Save Science

Kia mau a tātou pūtaiao

Underfunding our future

the human face of the science cuts

Foreword by Dr Ben Wylie-van Eerd

Now is not the time to be weakening our science system. In an increasingly unstable and competitive world, it is more important than ever that New Zealand becomes a leader in research and development. Discovering things that we can do better than anyone else in the world is the best way we can secure our future.

Since 2010, New Zealand has been growing steadily stronger at research and development[1].

We have more firms doing it, from startups to established players. The amount of people they employ and money they spend to do it has been steadily growing. The firms which research grow faster, and the New Zealand economy becomes stronger and more diverse.

Investment into R&D works. This is well known internationally, and we can see it every day working in New Zealand. So why then are we putting that at risk and turning off the tap?

We can see in many of the new firms coming through the fruits of long-term investments by the public science sector. New plant varieties, improved animal health and production, magnetic and superconducting technologies, mineral and chemical processing, digital services, aerospace and medical advancements – all these areas of commercial success are underpinned by public science investments into people, facilities, and new knowledge generation.

Over 2024 and 2025, the government made deep cuts to our science system. Hundreds of millions of dollars have been withdrawn, and almost every one of our universities and research institutes have been affected. These cuts have meant the loss of hundreds of science and engineering jobs, and they will leave lasting impact on research in New Zealand.

In this report, we follow some of those researchers who have been affected by the cuts. We learn about the world-leading research that they have been doing, and what the cuts have meant for them, their work, and for New Zealand.

These stories are personal for me – I was one of the many scientists made redundant because of these cuts. I came very close to having to leave New Zealand. I left once before as a young scientist chasing my dreams, but I came back home and I brought the skills and connections I made with me. If I had been forced to leave again, I doubt I would have come back a second time.

These are only a few of the stories of the people affected. There are more than 700 other stories like these ones over the past two years. They speak of a weakening of our science system that we can ill afford in a time of increasing global competition and change.

Now is not the time to be hitting the brakes. If we want to maintain our place among prosperous nations, we need to keep growing that pipeline of high tech from the source.

New Zealand has an excellent education system that produces incredible talent. If we look after those people, we can grow and diversify our economy, increase our productivity and become a very attractive place for global investment and collaboration. Most political parties will sing the praises of science and technology. Indeed, the current government has named it as one of its five pillars for economic growth. We call on all political parties to put their money where their mouth is – by reversing the cuts and strengthening our public science system to ensure it remains a strategic asset for the whole nation.

1 - https://www.stats.govt.nz/information-releases/research-and-development-survey-2016/ , https://www.stats.govt.nz/information-releases/research-and-development-survey-2024/

Andrea Bubendorfer

With over 25 years working in the field of advanced technology, Andrea Bubendorfer is one of Aotearoa's foremost experts in applying pioneering science to real-world problems.

A self-described generalist, Andrea holds a Master of Science in Biophysical Chemistry and has worked in a variety of fields. What interests her most, however, is technology that has the power to drastically change how everyday people live.

"So that could be for example, the Government's current focus on AI, space, and quantum technology.

"What exactly is an area of advanced technology is more of an art than a science. Sometimes it's obvious because it's already there and we're kind of late to the party. Or sometimes it's clear if you're in the field, you can see something emerging."

Until recently, she led a team of researchers at a now-disestablished agency that was tasked with helping the country's scientists to commercialise their work.

"I was very much at the applied end of science – not just asking questions and finding out how things work, but working out how to solve problems.

Andrea compares a thriving science system to a well-stocked pantry.

"You need good staples like flour and sugar so you can make basic things like cake and scones, but you also need a few exciting ingredients so that you can make new recipes or the old ones in unexpected ways.

"The idea that you can just take research off the shelf and start to make money off it is not quite right. Actually many things that make money take decades to get to that point, so you can't chuck out ingredients and then expect anything you make to be good

"Once they're gone, there's no getting them back. The damage done to the science system is not reversible."

But to afford needs such as healthcare and education, it's essential that we are well equipped, as globally by far the biggest returns have come from science.

Andrea has now been looking for work for well over six months since learning her role was to be disestablished in September 2025. She's seen highly qualified and experienced former colleagues and friends suffer severe financial hardship, move overseas, retrain and start again, or pick up a few hours here and there to scrape the bills.

"It's really important for scientists but also the system as a whole is that we secure a bipartisan view on scientific research. Science doesn't move anywhere near as fast as politics."

"I was very much at the applied end of science – not just asking questions and finding out how things work, but working out how to solve problems."

Caleb Rapson Nuñez del Prado

A keen interest in emergency management and a desire to make a positive impact on the world led Caleb to a role as a GeoHazard Analyst (GHA) for Earth Sciences NZ (formerly GNS Science).

Caleb studied geography in university and learnt about how physical earth processes and social processes that we live within interact. A job in the 24/7 National GeoHazards Monitoring Centre (NGMC) was a natural fit.

The role includes 24/7 shift work monitoring live earthquake data and looking at potential risks to New Zealanders including tsunami risks. GHA's send out real time alerts to the National Emergency Management Agency (NEMA) advising them on risk and imminent danger regarding tsunamis, volcanoes and earthquakes.

Due to cuts announced in the Government Budget 2024, Caleb's team was cut from 20 GHA's to 15. This included Caleb opting for voluntary redundancy.

"What that means is a degradation in the service we provide, in particular the resiliency of the service," Caleb explains. "There will be times where New Zealand's monitoring will step backwards from a live monitoring system to an on-call system."

This could mean a slower reaction time to natural hazards, and a potential reduction in the timeliness of information provided to New Zealanders.

"Even having a 10 – 20 minute advantage in response time [to a tsunami] can make a big difference," says Caleb. Earthquakes on the Hikurangi or Kermadec subduction zones could create tsunamis which would reach mainland Aotearoa in less than an hour.

Caleb is currently working in Italy at the National Institute of Geophysics and Volcanology. He is also preparing to pursue further study options overseas that in New Zealand have become increasingly limited due in part to funding and to cuts to the geophysics department at Victoria University in late 2023.

Asked about whether he intends to return to New Zealand in future, Caleb says:

"To me, Government funded science and research exist to serve the public good, and understanding and responding to natural hazards does exactly that. The value of that work, and the lives it helps protect, can't be judged solely through a dollar-value or a return-on-investment lens. Yes, there should be efficiencies – things like promoting collaboration – but cutting funding and pushing these essential public services into a commercialised approach is not how you deliver these services for New Zealand."

"As a Kiwi, I am hopeful that I will one day be able to come back to New Zealand and apply what I've learnt overseas in the natural hazards/tsunami space. To do that, I hope that a new Government would address these issues with science funding, and I could come back to a New Zealand with a strong science funding system in place."

> *"To me, Government funded science and research exist to serve the public good, and understanding and responding to natural hazards does exactly that."*

Chamira Rajapaksha

Chamira came to Aotearoa New Zealand in 2018 to study forestry at the University of Canterbury, funded by a PhD scholarship from her home government of Sri Lanka.

Due to the worsening economic conditions and a widespread political crisis in her home country when she graduated in 2022, she chose to stay in Aotearoa and pay back her government for the scholarship – a cost of around NZ$200,000.

She was very excited when she got a role in analytical chemistry at Scion (now part of the New Zealand Institute of Bioeconomy Sciences) in Rotorua shortly after graduating with her PhD, but she was made redundant just a year later. Since then she has applied for over a hundred jobs but is yet to find a permanent position in any field.

"At Scion I worked on a number of different projects for both government and commercial clients, such as farming companies and water quality," she says. "We tested samples for contaminants, toxins, and for quality control. When I was made redundant, I was told that the organisation was forecasting a drop in commercial work because much of it was ultimately dependent on government funding. However, my team leaders said they were still being asked to do the same amount of work with fewer people. I know that this will lead to work being done more slowly, to a lower quality, and ultimately to workers burning out."

She has been shocked to discover how hard it is to find work even with a PhD in a highly applied field, doing work with significant economic relevance. "One woman I worked with moved to New Zealand for her job and was made redundant just three months later. That's not a right or stable way to run a science system."

"Aotearoa New Zealand is wealthy because of agriculture," she says. "If we want to develop our agricultural sector we need to invest in the science that supports it. Keeping the environment clean and healthy, and maintaining our biosecurity, requires people to do this work. They should also consider the impact of their funding decisions on people's lives. We're told that it's not personal or about us or our skills - but when you lose your job, it feels personal."

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Chris Hollis

After gaining a double major in geology and biology at university, Chris thought paleontology was the most interesting direction to head in.

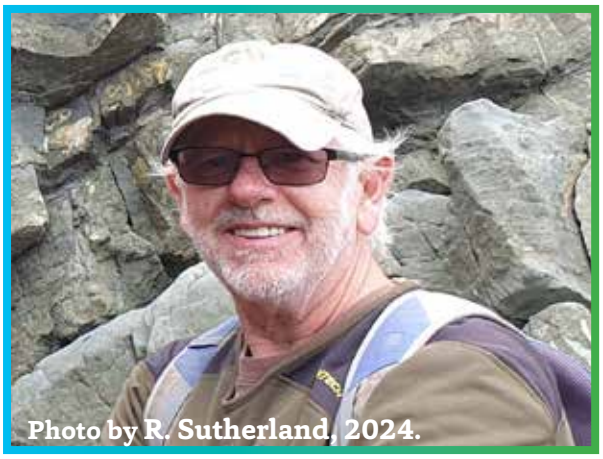
Photo by R. Sutherland, 2024.

He started at GNS science when it was at the centre of paleontological research and they were consulting for oil and gas entities. While he didn't have a strong interest in petroleum research he understood how focus on the geological record - looking at the past - could guide the future and in particular help us understand how we can tackle the biggest challenge of our times – climate change. He moved into this area of research.

Chris helped GNS establish the Global Change Through Time programme that investigates how global changes through geological time have impacted New Zealand and the South Pacific. It was established in 1998 and is still going.

When personal circumstances led to Chris leaving GNS, he says "I had a strong sense of foreboding that the research area I had established was not going to survive without me. As my team slowly got made redundant, I saw that was true.". He is concerned that now that this capability is lost, New Zealand will not have the skills and experience it needs to meet future challenges. "Unless you recognise you have to maintain broad capability, you can't solve future problems – you can't just get that expertise off the shelf". He points to the need to provide better pathways and career supports for post-doctoral students, or the capability pipeline will dry up.

For Chris it is "frustrating knowing that researchers overseas were envious of what we had developed – a strong multidisciplinary team spanning a wide range of paleontology and related geological disciplines. We were at the cutting edge of research on past greenhouse climates."

What do we lose when this work is not done here in Aotearoa? Chris says this work matters globally, "New Zealand is in quite a unique global setting for understanding the impacts of global change. We are at the transition zone between the tropical and southern oceans – here it can switch from hot to cold very quickly. We are a canary nation – we are likely to see the signals of global change before other countries...and that's why internationally people have been really keen to collaborate with us over the years."

Chris thinks the new science funding entity is a good step but "there needs to be a separation between the Ministry and the funding agency to establish long term research goals that don't change at the whim of government and are sufficiently broadly focussed to encourage people to push the envelope in a wide range of disciplines."

He says "They must reverse the changes to the Marsden Fund. The Fund was a fantastic way to maintain scientific excellence. Blue skies curiosity-driven research motivates scientists to push boundaries. It may not have any initial benefit at all but just might have huge benefits further down the track. I predict that the current focus on economic benefits will not generate the expected returns."

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Elizabeth Ostrowski

Elizabeth Ostrowski first became interested in evolution as an undergraduate studying a fungal epidemic in the USA that decimated its native chestnut trees. This led her to a PhD, and eventually a career, studying how organisms adapt to their environment.

Later, after she married a New Zealander who was working at the University of Houston, they decided to look for jobs in his home country and both found work at Massey University.

Elizabeth does what is known as 'basic' or 'fundamental' science. Basic research can lead the way to eventual applications. For example, Elizabeth's experience with a new type of genome sequencing eventually led her to the Liggins Institute, where she worked on the Newborn Genomics Programme. This programme uses this new genome sequencing technology to sequence genomes of sick newborns with suspected genetic conditions within a few days – potentially, saving lives.

"The cuts to science in Aotearoa New Zealand have been devastating to watch, but confirmed for me that I made the right decision to move back to the United States," she says. "Even with everything that is happening here under the Trump administration, there is still far more money available for basic research, which drives US dominance in science and technology. The situation in Aotearoa is much worse. People who don't have permanent roles – which are increasingly rare – can only stay in research if they are studying something incredibly topical."

Elizabeth also believes New Zealand doesn't value basic research the way that it should. "[The value of] basic research isn't emphasised in the school system. But without basic research, you don't get the key results and depth of expertise locally that will eventually drive innovations in applied research."

She believes that the number one thing our science system needs is more funding. She was hoping the recent Science System Advisory Group and University Advisory Group reports would lead to more funding, but instead it continues to decrease. The situation is particularly dire for 'postdocs', researchers who have recently finished their PhDs. There is very little targeted funding for this career stage now, which forces researchers overseas at a critical time in their careers.

"We've got to stop rearranging the deckchairs by restructuring," she says. "That can't fix the lack of funding – there are no magic bullets, and the loss of knowledge and experience through relentless cuts and restructures is devastating. Science is a long game that requires relationship-building and stable careers to develop the collaborations and long-term projects that lead to good applied research."

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Guang Zeng

Atmospheric scientist Guang Zeng and her husband lost their respective jobs at the National Institute of Water and Atmospheric Research (NIWA) during the same restructuring.

Now living and working in Germany, Guang has a new role in climate modelling.

"Even though we love New Zealand, with such a small science community we knew there was no hope to get another job here. It was a shame we had to leave, but we didn't have much choice," she says.

Guang obtained her PhD in physical chemistry at the University of Leeds in the UK before working as a research associate at Cambridge University.

She came to New Zealand in 2008 to take on a job at NIWA studying how climate change is affecting atmospheric conditions.

"The reason we moved to New Zealand was because the atmospheric research at NIWA was quite renowned internationally.

"Now, all the work we built up on global modelling of the climate and atmospheric chemistry system has stopped at NIWA. There are a few people studying this area still at the universities – but all the work we did and the relationships we had have ended.

"Feeding into the global knowledge base on this is quite important. Yes, New Zealand is small, but because of its remoteness in the middle of the ocean it has quite a unique atmosphere."

Guang says Government needs to understand that investing in science isn't a get-rich-quick scheme.

"Science isn't going to make you quick money, that's for sure. The basics of fundamental research should be a nation's bread and butter – it might turn into profit one day, who knows?

"But it takes a long time, and you never know. That's what research is about – you don't know something, and you want to find out."

> *"That's what research is about – you don't know something, and you want to find out."*

Gustavo Olivares

Gustavo Olivares became interested in air quality science as he grew up in Chile during the 1980s, when winter air pollution regularly obscured the beautiful view of the Andes mountains.

In 2007, Gustavo moved to New Zealand and began employment with NIWA (now known as the Earth Sciences New Zealand) in the air quality team. He worked there until 2024 when his team was disestablished.

"I had less of a focus on being able to see the mountains, but in helping people realise that burning something has more of an effect than just warming you up," says Gustavo. He points to the Health and Air Pollution in New Zealand study (HAPINZ), most recently published in 2022, which shows that more than 3000 people in New Zealand annually are dying prematurely due to air pollution, almost ten times the annual road toll.

"We at NIWA had a hand helping nearly every regional council or local authority, providing information and assistance and advice on how to manage or run an air quality plan," Gustavo explains.

Another aspect of the work of Gustavo's team was around resource management:

"Our team at NIWA did a lot of groundwork on how we could do things differently [for resource management] and making that information available to environmental managers. Because we had that stable funding from MBIE and its predecessors, we could tackle questions that didn't have an immediate application. We could anticipate the needs of stakeholders. There is now no stably funded air quality research group in the CRI's with the skillset that we had. There is nobody in the country anticipating the needs of central Govt and local councils for air quality management."

Expertise that councils previously had access to is now more expensive, and difficult to access. Funding streams such as Envirolink (which allows councils to purchase research from Crown Research Institutes and universities) no longer give councils access to the same breadth of air quality research.

Gustavo says "Local authorities are having to pay more to get the same expertise [from private consultancies]. Central Government developed this Intellectual Property through the CRIs, yet it now can't be used by regional councils to support their role without paying commercial rates for it."

Gustavo feels lucky to have found another job in air quality at Auckland Council, though the role has a more applied focus, and has less of a focus on research.

"By the end of 2024, I was completely exhausted, struggling to function and needing more time off than usual. The new job is a fascinating professional challenge with an applied focus, as I'm expanding the air quality exposure programme, but it is less research-focused. To keep the research work that we were doing alive, I've started a secondary company with former NIWA colleagues. However, balancing a full-time job and a family severely limits the time I can dedicate to that venture."

When asked what the Government needs to do to fix this, Gustavo says:

"Ministers were asked about whether they knew the impact of certain research areas that were being disestablished. The answer from the minister was that those were operational decisions for the CRI to consider. I believe that this statement is a dangerous one. Leaving these decisions to unelected officials (CRI executives) is a disservice to the country. I don't disagree that science needs to evolve and NZ can't do everything but the decision of which scientific areas NZ's public sector no longer participates in, is a bigger discussion that should have happened at a higher level. Are we as a country okay with this [research capability] disappearing from the public sector?"

> *"The decision of which scientific areas NZ's public sector no longer participates in, is a bigger discussion that should have happened at a higher level."*

Heather Davies

Heather Davies started her science career in microbiology laboratories following study at a polytechnic institute. When she was made redundant from ESR (now the New Zealand Institude of Public Health and Forensics) she had been working in laboratories for forty-four years.

Heather worked on notifiable diseases – diseases like meningococcal disease, measles and COVID-19 – which the government mandates must be monitored and reported to reference laboratories. "The current measles outbreak illustrates the need for this work," she says.

Last year the budget for the lab she worked in was cut by $20 million dollars, but she says "None of the work we needed to do – that we were required to do by legislation – disappeared. Instead, my former colleagues are now just treading water. We can't respond appropriately to outbreaks because we have fallen below the critical mass of workers and capability required for work like identification of different strains of notifiable diseases." Her laboratory had been involved since the start of the COVID-19 pandemic with a worldwide monitoring programme which led to several key scientific publications. Because of the long timeline for academic publishing, Heather's name is still going on publications coming out of that work, while she herself is no longer employed.

Heather says that losing her role was devastating and made her feel like she could no longer contribute to society. She is still in contact with many people who work at PHF Science and knows they are struggling to keep up.

"Maintaining capability in these areas is not easy, but getting it back once it's gone is almost impossible," she says. "People retire, they move to Australia – they don't come back, and it takes a long time to train people up to do this work. If the organisation wants good quality data, they have to fund good quality scientists and technicians."

Asked what a future Government could do to fix this, Heather says "We need to put more money in the system and focus it where it's needed – not continue to reduce our existing scientific capability. We need to think about what the most important work is we can be doing to improve our public health, and adequate monitoring is a huge part of that. We can't just keep expecting our scientists to do more work for less."

> *"We need to put more money in the system and focus it where it's needed – not continue to reduce our existing scientific capability"*

Olaf Morgenstern

Olaf Morgenstern followed his interest and a Diploma in physics to a PHD in meteorology at ETH Zurich and then on to an atmospheric chemistry post doc at Cambridge University.

With this specialization he became well placed to understand how global warming is affecting and changing our atmosphere and also what's happening with our weather.

Olaf moved here with his wife, also a climate scientist, in 2008. Through his work at NIWA he was able to improve our understanding of why and how ozone depletion has affected weather in New Zealand over the last 30/40 years, what kind of storm activity we can expect in future and how we can prepare for this. Olaf was helping lead the Deep South National Science Challenge. Its mission was to enable New Zealanders to adapt, manage risk and thrive in a changing climate. It was producing tools and information to help farms, businesses, homes and communities adapt to climate change. The value of this work was thrown into sharp relief when Cyclone Gabrielle hit, highlighting NZ's lack of preparation for extreme weather likely to grow more extreme under climate change.

In mid-2024, with a new government instructing CRIs to save money and focus on "commercial" work, NIWA terminated global climate modelling, and the Deep South Challenge expired without any successor. Olaf was made redundant. After building a life in Aotearoa for 16 years and spending 21 years helping to develop a model that was directly contributing to growing our national resilience, he had to abandon this area of work. His wife was also made redundant. They have moved to Germany to find new roles. While New Zealand still feels like home, there is no work for them here.

Olaf reflects that Kiwis sometimes seem to be afflicted by an "inferiority complex", whereby we can just rely on knowledge developed elsewhere in the world – we're too small to matter, and our science cannot be important internationally. This is an extremely unfortunate attitude. Olaf has encountered many very bright colleagues ready to contribute on the global stage. Doing so is not just important for global science, but also grows local expertise required to devise strategies to cope with climate change. Aotearoa has a unique geographic location and social and economic context, and without science done locally, we will not know how to best respond to what is actually happening here.

Olaf notes that internationally only a small fraction of climate research is privately funded. The notion that climate science should be "commercialized" would elsewhere be considered unrealistic and ethically problematic. If here in New Zealand we only support commercially valuable science, the impartial, public-interest science will not be done that government, communities, and businesses need to ensure we have a resilient environment and economy able to face progressive climate change. Olaf says, "No one wants to pay for this research – industry may pay for the icing on the cake but not the cake itself." Moreover, without a publicly funded backbone of fundamental research, any actor in this field would become unattractive for private industry to partner with.

Olaf sets a challenge to us here in Aotearoa: "Most European countries consider themselves to be knowledge-based societies, because science is one of the engines of economic and social growth. For New Zealand to do well and join this group, it must invest more in science." The Organization for Economic Cooperation and Development (OECD) sets a benchmark of 3% of GDP to be invested in science and research. New Zealand has in recent times spent around 1.4%.

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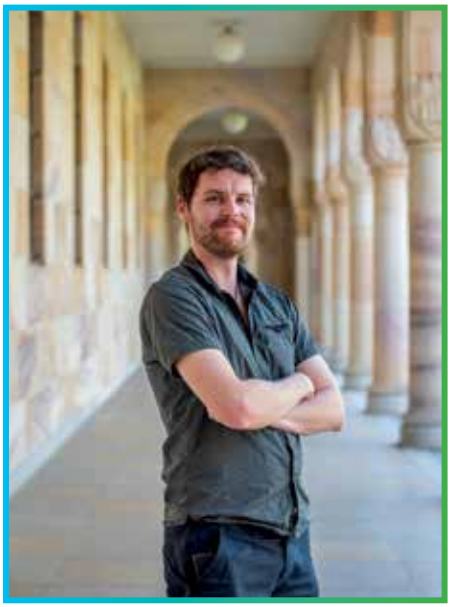
Sean Bisset

After completing his first postdoc position in Sweden, biochemist Sean Bisset returned to New Zealand only to find it very difficult to find work.



"We ended up coming back to Palmerston North because my partner got a job there," he says.

"We got back in 2022, and we were really shocked at how much science funding had gone while we were away.

"I reached out to my old supervisor in desperation, and I said look, do you know of anyone hiring, because it's pretty grim out there. She fortunately offered me a role at her start-up, which was utilising technology I had also been involved with in the past."

Sean considers himself pretty lucky to have been in the right place at the right time to land that practical experience.

"Without that I would have likely had to leave science altogether."

He has now relocated to Australia, where there are more opportunities, networks and funding for him (and his partner) to grow their careers.

Sean's field of study is in the mechanics of antibiotic resistance, and a molecule that could be important in combatting it so current medicines work more effectively for longer.

While further research is always on the cards for him, his real passion is industry-side: applying scientific solutions to real-world problems.

Sean credits that drive in him to Massey University, where he studied at both an undergraduate level and completing his PhD before heading to Sweden.

"Massey is really, really good at giving strong practical skills to their science students," he says.

"So it's really sad to see Massey University start to cut down science."

For the science system to succeed, Sean says there needs to be more emphasis on incentivising researchers to stay in the country.

"You need to offer some peace of mind for people that want to progress with their careers, and a big part of that is supporting PhD research or at least having a scheme where there's funding for actual employees in science.

"So much talent has already been lost, it's hard to replace. But we can make sure we can keep people to stay here and transmit all their knowledge and skills."

"We got back in 2022, and we were really shocked at how much science funding had gone while we were away."

Stuart Henrys

Stuart is a geophysicist. His interest in Earth sciences started as a spark of natural curiosity. He attended the University of Auckland with the aim of doing a chemistry degree but a few years of spending long hours under fume hoods could not compare to the experience of fieldwork he did as part of geology courses.

He went on to complete his PhD on the Ohaaki-Broadlands geothermal system in the Taupō Volcanic Zone followed by a brief stint as lecturer at the Geothermal Institute, University of Auckland. His career then took him to Rice University in Houston, Texas, for three years before returning to New Zealand as a Postdoctoral Fellow at the Antarctic Research Centre, Victoria University of Wellington. In 1994, Stuart joined GNS Science.

In 2025 Stuart was elected as a Companion of the Royal Society Te Apārangi for his scientific leadership which has significantly advanced knowledge and understanding of Earth science and tectonics in New Zealand.

Reflecting on his career Stuart says he became increasingly aware of the challenges small nations like Aotearoa New Zealand face when tackling big science questions that underpin natural hazard resilience, climate change risk, and resource potential.

"Yet I also came to see our position – astride the Australian/Pacific plate boundary and at the edge of the Southern Ocean and Antarctica – as a natural laboratory, uniquely positioned to address those questions."

"Driven by this vision, I worked with colleagues to help found GeoDiscoveryNZ, a collaborative initiative bringing together Crown Research Institutes and universities. Together, we built a cohesive Earth science community able to co-design proposals, cultivate leadership, and secure access to international research platforms, including major scientific drilling projects and expeditions." Through these global partnerships, New Zealand scientists gained access to world-class facilities that unlocked research opportunities and impact that would have been impossible alone".

Ultimately Stuart's motivation is clear; "I want this knowledge to advance the next-generation of hazard models that can make communities safer. The drive to understand the forces that threaten us, and to help protect people, has been at the heart of my career."

Despite being made redundant by GNS Science following the 2024 science cuts, Stuart continues to advocate for the critical role of research and mentoring in New Zealand's future. He believes science and innovation are under-recognised as drivers of economic growth and warns that New Zealand lags way behind OECD peers in science investment.

"Harnessing science to deliver on government priorities, requires stronger alignment between education, workforce capability, institutions, research infrastructure, and funding. This will ensure that knowledge translates into tangible outcomes for the nation."

> *"The drive to understand the forces that threaten us, and to help protect people, has been at the heart of my career."*

Science is one of the key engines of economic growth and social and environmental wellbeing.

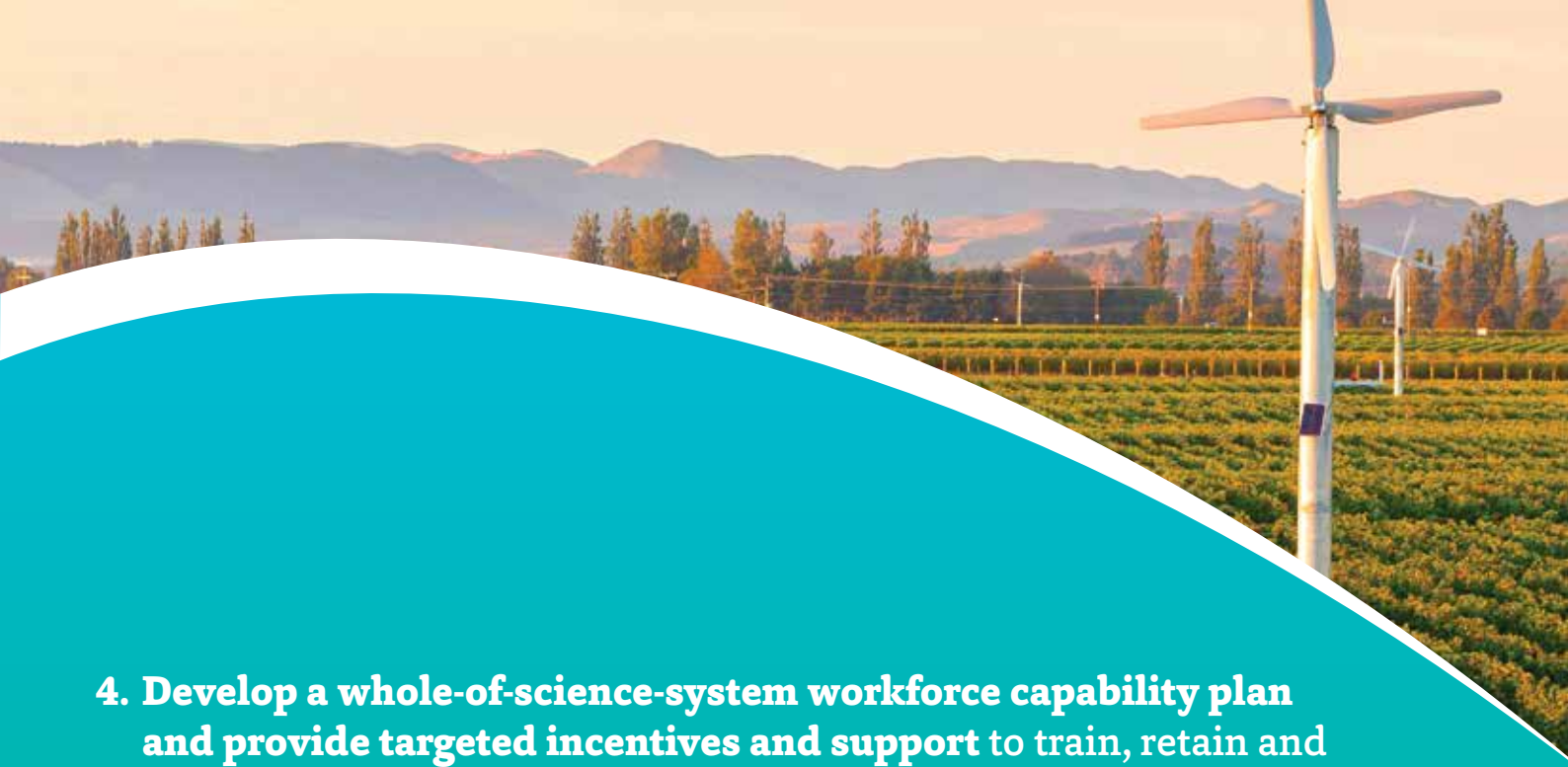
For New Zealand to do well and truly be a knowledge-based society, it must invest more in science and research.

What the Save Science Coalition wants to see from the next Government:

1. **Back science as an engine of economic growth.** Lift investment in science and research to at least 2% of GDP, with at least 0.6 % of that being public science. New Zealand has in recent times spent around 1.4%. The Organization for Economic Cooperation and Development (OECD)'s benchmark is 3%.

2. **Reach a cross-party consensus to restore and expand non-contestable baseline funding** for public-good and foundational research across disciplines to reduce over-reliance on short-term competitive grants and to stabilise research careers.

3. **Ensure the proposed Public Research Organisation legislation and funding mechanisms explicitly recognise disciplines that serve the public good** but may not generate direct commercial returns. This includes the humanities, social sciences, and Mātauranga Māori (all of which contribute significantly to public wellbeing) as well as environmental and hazards science, and any other areas of high public interest.



4. **Develop a whole-of-science-system workforce capability plan and provide targeted incentives and support** to train, retain and attract diverse researchers, while addressing early-career precarity. Enable flexible movement of staff across universities, CRIs, government and industry including through industry standards for fair and equitable pay and conditions and seamless career pathways.

5. **Protect and fund science infrastructure (physical, digital, data) as a strategic national asset,** with dedicated, long-term budgets for maintenance and growth. This should be integrated into our National Infrastructure Plan.

6. **Improve commercialisation of scientific research** by investing in the public good and fundamental research which underlies it and providing fit for purpose commercial support to transition research into commercial outcomes.

7. **Design funding streams and metrics** that actively incentivise genuine collaboration (including on a global scale), open data sharing, reduced duplication, and system level outcomes.

8. **Establish formal mechanisms** for regular, expert-informed dialogue between scientists, policymakers and the public.

The background to Aotearoa New Zealand's current science funding crisis

A science system that can deliver both impact and excellence in research, to address risk and improve performance at an industry and societal level, requires adequate investment. New Zealand has been consistently under-investing in science over the long term. As a proportion of GDP, total R&D expenditure in New Zealand is low compared with the OECD and other small advanced economies.

Successive governments have set the goal of increasing R&D spending to 2% of GDP; the most recent Labour-led Government set a goal to reach the 2% GDP goal over the ten years from 2017 to 2027, and reiterated this goal in its 2022 white paper as part of the Te Ara Paerangi reform process; and government documents released this year indicate 2% of GDP is still the aim of government. This target covers spending across the public sector, universities and business.

R&D spending has increased over the last decade, with business spending on R&D rising faster than public spending, but overall New Zealand's total investment in R&D has been well below the Government's 2% of GDP goal.

New Zealand's funding and institutions have internationally unusual structures which are a source of instability and excessive competition fuelling growing confusion and distrust. This includes the practice of including overheads into all contracts, a large proportion of which are contestable. With a lack of stable support for the foundations of research, the cost of overheads continues to swallow more funding leaving less for the research itself. Most troubling of all, investments generally do not receive adjustments for inflation so that as GDP grows, the same level of government contributions effectively provides less.

The inadequacy of funding overall, coupled with the contestable and temporary nature of most of New Zealand's major science funding sources, has created a system in which funding and therefore work is precarious. Capped funding over long periods limits investment in science infrastructure, makes projects unnecessarily precarious, and forces institutions to cut valuable work to meet bottom lines. The time-limited nature of many funding sources makes it difficult to provide career stability or certainty and limits us from retaining our best scientists. Rising overheads that aren't met by rising

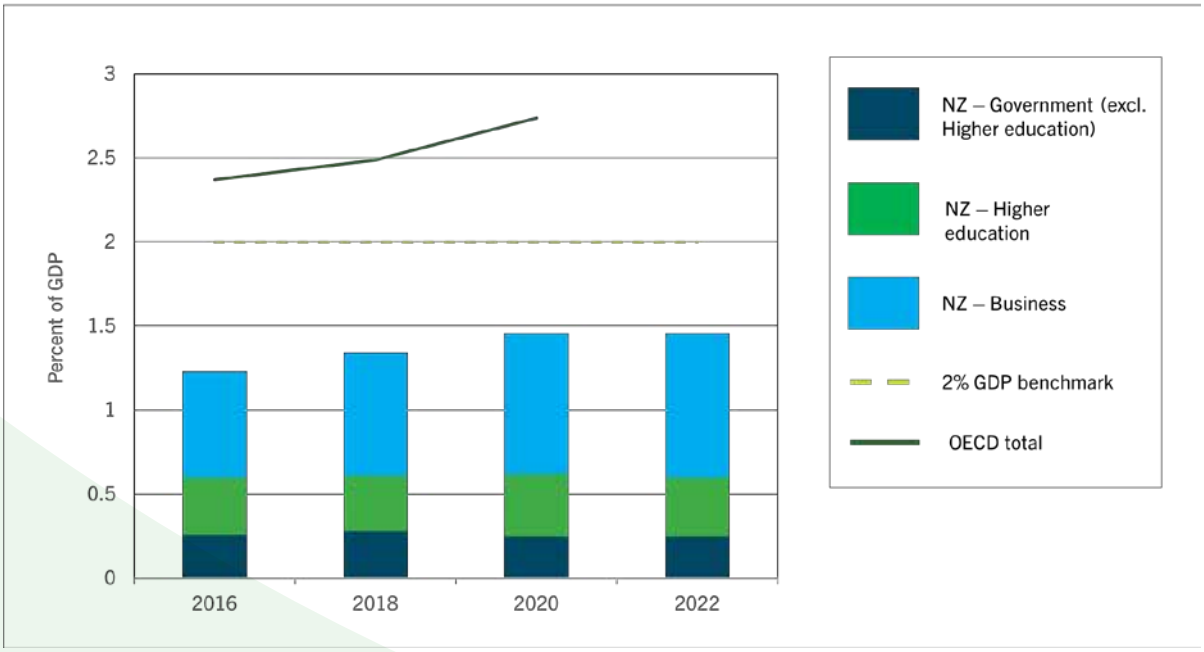


Figure 1: New Zealand science funding as a percentage of GDP, by sector and compared to OECD total (Source: StatsNZ Research and Development Survey 2022)

Excerpt from the Save Science Report, July 2024, Save Science Coalition

investment mean doing less with the amount available. Within universities in particular, the normalising of temporary contracts has created an environment of insecure work.

Despite a rising overall spend as a proportion of GDP, driven largely by private rather than public spending, funding pressures on particular parts of the public science system have risen in recent years:

- The university funding system has suffered from declining operating revenues since 2020 caused by a combination of falling enrolments and falling government funding in real terms, leading to challenges the Tertiary Education Commission has described as unprecedented.
- Rising costs have not been met by increases to funding, such as in the example of the Strategic Science Investment Fund.
- In 2023 the Government put in place cuts to science funding of $115.3 million over a period of four years from 2023/24 to 2026/27 to respond to the cost-of-living crisis through public sector cost savings.

Pressures in some areas were counteracted by investment in others: in Budget 2023 the Government set aside $451 million in new research infrastructure funding in the form of its 'Wellington Science City Proposal'. Through its reform process it also started the process of developing national research priorities to guide funding that was expected to replace the National Science Challenges expiring in 2024. The funding for the National Science Challenges was originally reallocated from elsewhere in the sector, so replacing them represented only maintenance of existing funding levels going back many years.

The state of public science funding has worsened significantly following the election of the National-led coalition Government in late 2023 due to:

- requirements for public service organisations to identify 6.5-7.5% reductions in baseline spending, which will leave them with less resource with which to commission research
- the cancellation of science infrastructure that would have been provided through Wellington Science City
- loss of direct science funding through the expiry of the National Science Challenges and through signalled reductions in other funds.

At the same time, through Budget 2024 the Government has made cuts to several sources of public science funding, or chosen not to extend time-limited funding sources that were due to expire, which anecdotally, appears to be leading to research and other science-related work commissioned from CRIs and universities being cancelled.

The combined result of these changes is that science organisations are cutting jobs, failing to invest in infrastructure, and scaling back the work they do for the good of New Zealand and the national economy. The details of these cuts are discussed in the following sections.

The 2024 report documented a funding shortfall for the public science sector of:

- $64 million per year of expired National Science Challenge funding compared to 2023/24 levels
- $451 million of withdrawn capital funding that would have been spent on science infrastructure through Wellington Science City
- a net $7.15 million decrease in the Strategic Science Investment Fund over the next four years
- a $20.26 million decrease in geohazard information funding over the next four years compared to 2023/24
- a $9.75 million reduction in the Endeavour Fund over the next four years
- a $3.09 million reduction in the Marsden Fund over the next four years
- a $4.91 million reduction in the Health Research Fund over the next four years
- a $4.46 million reduction in government spending on policy advice and related services on science, innovation and technology in 2024/25
- a $4.8m reduction in Unlocking Curious Minds funding over the next four years
- a $3.6m reduction in the Participatory Science Platform funding over the next four years.

This report also documents job losses including:

- approximately 349-359 science roles lost or proposed to be lost across the sector, with more likely to follow
- wider reductions in funding and roles in wider areas of evidence, data, insights, research and intelligence that provide much of the evidence basis for decision-making within government.

Since the 2024 report, job losses in the science sector have now reached over 700 jobs

The Save Science coalition