



Infrastructure Resilience Research 2021

Richard Smith
Director

Resilience National Science Challenge

Accelerating Aotearoa New Zealand's Resilience to Ever-changing Natural Hazards

RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa
– Ngā Ākina o
Te Ao Tūroa

National
SCIENCE
Challenges

National Science Challenges



- **Mission-driven** – science with impact
- **Māori as partners** and embedding mātauranga
- **Science excellence** – innovative, internationally relevant
- **Collaboration** – bringing the best **multi-disciplinary** research teams together
- **Research user participation** - engaged in co-design and co-production
- **Public Participation** – outreach and science communication

Resilience Challenge: The numbers

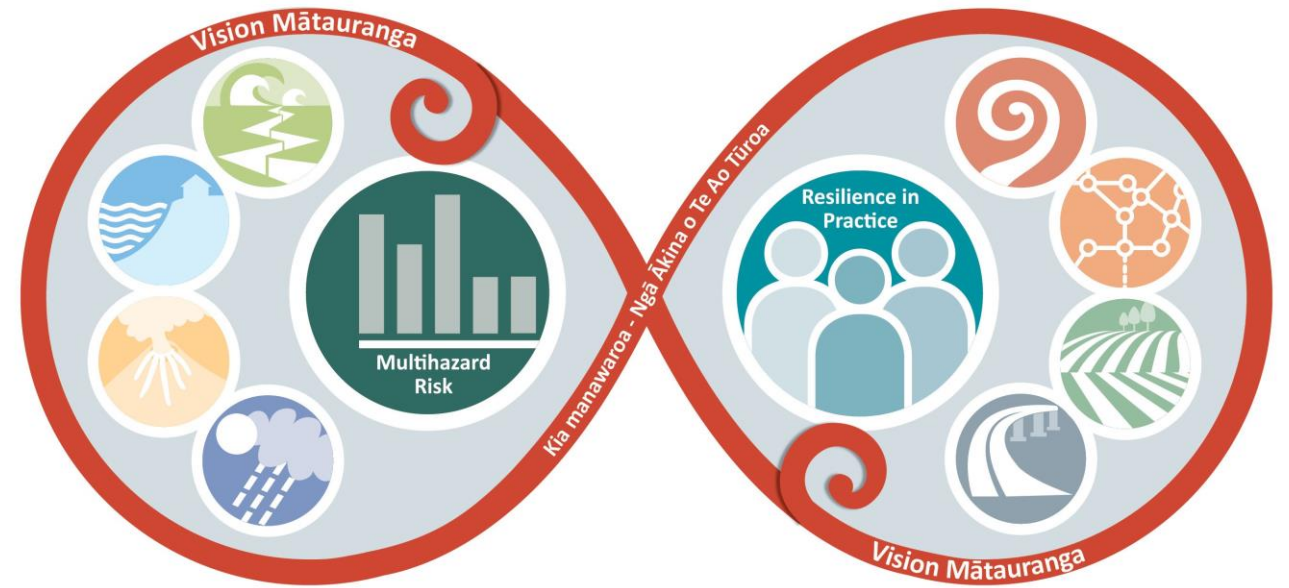
Funding until 2024

340+ researchers

136 Students

11 Post-docs

10 programmes; 37 projects



Manaaki Whenua
Landcare Research



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Some projects of Interest...



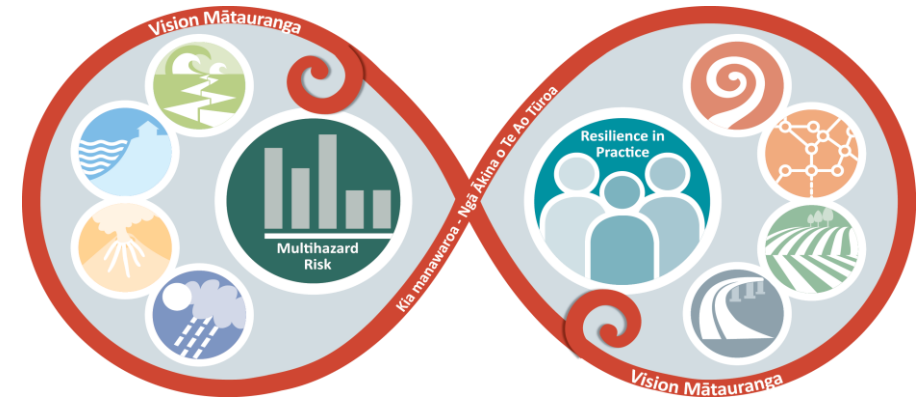
Multihazard
Risk

- Coincident and cascading hazard and risk models
- Social and economic impacts estimation
- Coastal change and inundation
- High-impact weather scenarios for Auckland
- Next generation national earthquake hazard assessment
- Volcanic forecasting and impact tools



Resilience in
Practice

- Innovation spaces for testing resilience policy choices
- Incentives for resilience investment
- Kaupapa Māori approaches to hazard research, resilience and risk communication
- Low-damage solutions for infrastructure networks and buildings
- Infrastructure network and distributed infrastructure resilience
- Early warning systems and effective risk communication
- Disaster resilient solutions for māori, rural communities, tourism, agribusiness



Highlights 2020

- **Partnership as pathways for resilience**
- **Coordinated science response in emergencies**
- **Models and tools for decision making**
- **Science for policy and practice**



Our Priorities 2021/2022

Integrated multi-hazard science

Stronger partnership with Māori

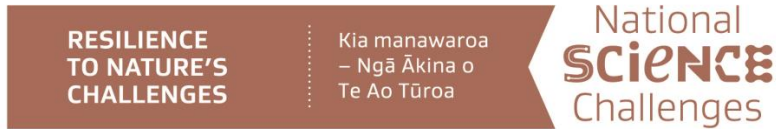
Elevated and integrated Mātauranga Māori

Maximising impact

Telling our story well



The Disaster Resilience Research Landscape...



Coastal People : Southern Skies



Endeavour Fund 2020
Reducing flood inundation hazard and risk across Aotearoa

Endeavour Fund 2020
Faster Earthquake and Tsunami Characterisation



Endeavour Fund 2019
Whakahura: Extreme Events and the Emergence of Climate Change research programme



Co-development and Engagement

Individual Projects

- Active participation
- Workshops/wananga
- Local case-studies, policy briefs etc.
- Piloting tools
- Hapū partnerships

Challenge Programmes

- User Advisory Groups (e.g Volcano, Urban, Rural, Infrastructure, Whanake te kura)
- Workshops/wananga
- Webinars and Symposia

Cross-Cutting Issues/Themes

- Partnership with 'boundary organisations' eg. AF8, IOF, Devora, ECLAB
- Collaborations with others (eg Deep South, ECLIPSE, Taranaki Volcano)
- Webinars and Symposia



RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa
– Ngā Ākina o
Te Ao Tūroa

National
Science
Challenges

Thank You



resiliencechallenge.nz/



twitter.com/ResilienceNSC



facebook.com/resiliencechallengeNSC