

## 16. Science and research organisations

**Summary** Knowledge, information, and advice services are provided to agencies and CDEM Groups by universities, Crown research institutes, private organisations, and international networks. Improving the coordination, promotion, and accessibility of science and research is fundamental to CDEM.

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## 16.1 Introduction

### Part 5

#### Role and Responsibilities

##### Science and research organisations

#### 81 Introduction

- (1) *Knowledge, information, and advice services are provided to agencies and CDEM Groups by universities, Crown research institutes, private organisations, and international networks.*
- (2) *Improving the co-ordination, promotion, and accessibility of science and research is fundamental to CDEM.*
- (3) *The Ministry of Business, Innovation, and Employment co-ordinates Crown-funded research in support of the National CDEM Strategy's goals and objectives.*
- (4) *Those arrangements aim to build research capacity that—*
  - (a) *enables avoidance or mitigation of risks that have potential for significant consequences for New Zealand's economy, environment, or social well-being; and*
  - (b) *develops community, organisational, and infrastructural resilience to those consequences; and*
  - (c) *supports the dissemination of knowledge and advice, and their application by CDEM practitioners.*
- (5) *The Earthquake Commission, under the Earthquake Commission Act 1993, may facilitate research and education regarding natural hazards, the means of reducing the impact of natural hazards, and improving emergency management practices.*
- (6) *Science and research providers also undertake public and privately contracted research services involving other funding sources in support of CDEM.*
- (7) *In readiness for, and response to, an emergency, the science and research organisations may assist with—*
  - (a) *hazard monitoring; and*
  - (b) *the provision of hazard and risk information; and*
  - (c) *scientific advice to agencies managing an emergency; and*
  - (d) *public information on hazards and risks and safety measures.*

#### Note – Plan clause 81(5)

Under Section 5(e) of the *Earthquake Commission Act 1993*, EQC may facilitate research and education about matters relevant to natural disaster damage, methods of reducing or preventing natural disaster damage, and the insurance provided under the *Earthquake Commission Act 1993*.

## 16.2 Objective

#### 82 Objective

*The objective of science and research organisations is to provide evidence-based advice to support agencies and CDEM Groups carrying out CDEM at the national, CDEM Group, and local levels across the 4 Rs.*

## 16.3 Principles

### 83 Principles

*The principles underlying the role of science and research organisations are to—*

- (a) consider all hazards and risks to New Zealand and societal resilience and vulnerability factors, including variability in those factors over time; and*
- (b) provide for long-term basic targeted research and short-term applied research that meet identified end-user needs; and*
- (c) actively develop and maintain appropriate research capabilities to a high standard; and*
- (d) acknowledge the need for, and work towards, collaborative efforts to maximise the societal benefits from publicly funded research; and*
- (e) endeavour to make research outputs widely known and to assist with their transfer and application as relevant for CDEM throughout New Zealand.*

## 16.4 Role of science and research organisations during reduction and recovery

### 84 Role of science and research organisations during reduction and recovery

*Research is carried out at the national, CDEM Group, and local levels, and through international collaboration, to help communities and decision makers to—*

- (a) identify, understand, and communicate information on hazards; and*
- (b) determine acceptable levels of risk; and*
- (c) develop and implement effective means to avoid or mitigate risks; and*
- (d) understand hazards and the management of their consequences; and*
- (e) carry out recovery activities, including, as appropriate, reducing ongoing risks; and*
- (f) monitor and review CDEM processes and outcomes.*

## 16.5 Role of science and research providers during readiness and response

### Lead and support agencies

### 85 Role of science and research providers during readiness and response

- (1) Lead and support agencies may access a range of science and research organisations during an emergency to provide definitive scientific advice or to communicate risk (those organisations include universities, Crown research institutes, and private organisations).*

### GNS Science

- (2) GNS Science—*
  - (a) manages the GeoNet system for the detection of earthquakes, land movement, volcanic activity, and the potential for local-source tsunamis; and*
  - (b) assesses the threat of tsunamis with the support of a multi-agency tsunami experts panel; and*
  - (c) provides advice to the MCDEM on the issuing of national advisories and warnings about geological hazards; and*
  - (d) provides scientific advice to the NCMC, agencies, and CDEM Groups as needed; and*
  - (e) contributes to the management of public information on geological hazards and associated emergencies.*

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|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Meteorological Service of New Zealand (MetService)</b>              | <p>(3) <i>The Meteorological Service of New Zealand Limited—</i></p> <ul style="list-style-type: none"> <li>(a) <i>maintains a weather forecasting service and issues weather warnings to the public; and</i></li> <li>(b) <i>contributes to the management of public information about weather hazards and associated emergencies; and</i></li> <li>(c) <i>issues, as necessary, volcanic ash advisories for the civil aviation industry; and</i></li> <li>(d) <i>provides scientific advice to the NCMC, agencies, and CDEM Groups as needed.</i></li> </ul>           |
| <b>Regional councils and unitary authorities</b>                       | <p>(4) <i>Regional councils and some territorial authorities monitor rainfall, lake and river levels, and volumetric flows for flood prediction and management</i></p>                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>National Institute of Water and Atmospheric Research Ltd (NIWA)</b> | <p>(5) <i>National Institute of Water and Atmospheric Research Limited—</i></p> <ul style="list-style-type: none"> <li>(a) <i>provides public information on—</i> <ul style="list-style-type: none"> <li>(i) <i>climatic and seasonal risks (including drought); and</i></li> <li>(ii) <i>marine geological, seafloor, and coastal hazards and processes; and</i></li> </ul> </li> <li>(b) <i>provides scientific advice to the NCMC, agencies, and CDEM Groups as needed; and</i></li> <li>(c) <i>provides representatives on the tsunami experts panel.</i></li> </ul> |
| <b>The Ministry of Business, Innovation, and Employment</b>            | <p>(6) <i>The Ministry of Business, Innovation, and Employment, during and after an emergency, may take additional steps to—</i></p> <ul style="list-style-type: none"> <li>(a) <i>integrate consistent and coherent scientific advice to agencies and CDEM Groups; and</i></li> <li>(b) <i>divert existing funding or allocate new funding to ensure that the appropriate technical resources in core physical and social science, engineering, and risk management are available nationally to support the needs of agencies and CDEM Groups.</i></li> </ul>           |

The additional steps that the Ministry of Business, Innovation, and Employment (MBIE) may take will utilise existing administrative and funding structures, notably the Natural Hazards Research Platform, and National Science Challenges: Resilience to Nature's Challenges.

## 16.6 References and links

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| <b>Other sections of the Guide</b> | <ul style="list-style-type: none"> <li>♦ Section 2, Hazards and risks</li> <li>♦ Section 5, Ministry of Civil Defence &amp; Emergency Management (MCDEM)</li> <li>♦ Section 6, Civil Defence Emergency Management Groups (CDEM Groups)</li> <li>♦ Section 17, Reduction</li> <li>♦ Section 18, Readiness</li> <li>♦ Section 24, Response</li> <li>♦ Section 25, National warnings and advisories</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Other documents</b>             | <ul style="list-style-type: none"> <li>♦ For information on the Ministry of Business, Innovation, and Employment's National Science Challenges, visit <a href="http://www.mbie.govt.nz">www.mbie.govt.nz</a> (search for 'national science challenges')</li> <li>♦ The Natural Hazards Research Platform (<a href="http://www.naturalhazards.org.nz">www.naturalhazards.org.nz</a>)</li> <li>♦ National Institute of Water and Atmospheric Research (<a href="http://www.niwa.co.nz">www.niwa.co.nz</a>)</li> <li>♦ GNS Science (<a href="http://www.gns.cri.nz">www.gns.cri.nz</a>)</li> <li>♦ GeoNet system (<a href="http://www.geonet.org.nz">www.geonet.org.nz</a>)</li> <li>♦ The Meteorological Service of New Zealand Limited (MetService) (<a href="http://www.metservice.com">www.metservice.com</a>)</li> <li>♦ Earthquake Commission (EQC) (<a href="http://www.eqc.govt.nz">www.eqc.govt.nz</a>)</li> </ul> |