

IN CONFIDENCE

LessoNZ Report



Aerial Shot White Island and New Zealand Police's Deodar III. Photo: NZ Police

Whakaari/White Island Volcanic Eruption Response

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A just culture is about balancing demands for accountability regarding failures with an ability to collect enough information to make sense of the situation to contribute to learning and safety improvement. A non-judgmental just culture encourages learning and maximises the potential for ongoing improvement.

If stakeholders do not feel safe to speak up without fear of ridicule or blame, or if others declaring a contrary view challenge them, they can be discouraged from sharing their experiences.

Australian Government. (2019, p.11).
Lessons Management. Australian Disaster Resilience Handbook Collection.

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Purpose

This report has been prepared by members of the LessoNZ community of practice at the request of the Chair of the Officials Committee for Domestic and External Security Coordination (ODESC).¹

The LessoNZ community of practice was tasked to collate and assess key overarching themes and lessons identified during the National Security System (NSS) activation for the Whakaari/White Island Volcanic Eruption which occurred on Monday, 9 December 2019, and produce a consolidated summary report including recommendations.²

This report is prepared for learning purposes and does not apportion blame or criticism to any agency or individual.

The report includes:

- * Recommendations
- * Insights and lessons identified in the Whakaari/White Island response
- * An analysis as to whether issues identified in the *Post Operation Deans National Security System Review* (June 2019) reoccurred during the Whakaari/White Island response.³

The report is in five parts:

- * Part I is the recommendations
- * Part II explains the background to the Whakaari/White Island event
- * Part III explains the Lessons approach and methodology that informed the recommendations
- * Part IV is the findings, including successes, insights and lessons identified
- * Part V is an assessment of the lessons identified for the Whakaari/White Island response with the recommendations of the *Post Operation Deans National Security System Review*. The assessment ascertained whether any Operation Deans recommendations resurfaced as lessons in the Whakaari/White Island response.

Operational demands to support the Covid-19 response have delayed an earlier release of this report.

The LessoNZ community of practice is formed from personnel working across government agencies in the field of continuous improvement. The group meet several times a year to share experiences and learnings to improve operational practice.

1 A committee of Chief Executives, which, during an emerging or actual security event, is responsible for providing strategic direction and coordinating the all-of-government response.

2 Officials Committee for Domestic and External Security Co-ordination. (19 December 2019). Whakaari-White Island Volcanic Eruption, Inter-Agency Working Group Meeting #2 [Minutes].

3 Operation Deans is the name given to the emergency response to the terrorist attack of 15 March 2019, in which 51 people in Christchurch lost their lives.

Executive Summary

Whakaari/White Island, off-shore from the Whakatāne township in the Bay of Plenty, New Zealand, erupted at 14:11 New Zealand Daylight Time on 9 December 2019.

Earlier that morning, the National Emergency Management Agency (NEMA) had activated its National Coordination Centre (NCC) in support of a South Island Severe Weather event. Some government agencies were responding to both emergencies.

NEMA had only recently been established on 1 December, to replace the Ministry of Civil Defence & Emergency Management (MCDEM). The Scientific and Technical Advisory Committee (STAC), an entity providing scientific and technical guidance to response agencies and Incident Management Teams, was brought together for its first emergency event.⁴

In mid-December 2019, Government agencies were asked to submit their reviews, debriefs and feedback from the Whakaari/White Island event, to LessoNZ, to inform an analysis of the all-of-government response to the event. This is the first time a Lessons Management methodology has been used to inform continuous improvement across all-of-government for a major emergency event.

The LessoNZ community of practice collated and assessed observations from 25 agencies that responded to the eruption.

Findings

The observations were summarised into nineteen insights. Common themes were the need for better understanding of roles and responsibilities (eight insights) concerns with the flow of information (six insights) and matters relating to resourcing and capability (two insights). The insights were developed into eight lessons that were further developed into five recommendations.

Included in agencies observations were positive reflections on the themes of leadership and professionalism, skills and expertise of individuals and groups contributing to the whole, and systems and facilities that supported leadership and enabled collegial support and teamwork. These are summarised in this report as successes, or “what worked well.”

The Whakaari/White Island lessons were assessed against the recommendations from the *Post Operation Deans National Security System Review*. It was found that the Whakaari/White Island recommendations reinforce ten of the 18 Operation Deans recommendations.

⁴ STAC is the Scientific and Technical Advisory Committee for Hazmat (hazardous materials) and CBRNE incidents (chemical, biological, radiological, nuclear and explosive). STAC is referenced in the *National Security System Handbook* (2016, p. 14). *The National Counter Terrorism Standard Operating Procedures Version 15 11 July 2016 (Draft, Restricted)* informs that STAC is chaired by FENZ. The draft STAC charter (2019) informs that STAC is activated through the on call National Commander, FENZ.

Part I Recommendations

Five recommendations for improvement have been developed. These are supplemented with guiding information.

Recommendation 1

That a comprehensive plan is developed to increase agency and community understanding of the governance structure and functions of the National Security System (NSS), and the importance of the information flow. This could include:

- * The development of an accessible online induction package for all personnel in central and local government and the general public about the relationship between the NSS, the Coordinated Incident Management System (CIMS) and the National Civil Defence Emergency Management Plan (CDEM Plan). This induction package could include links to the online NSS and CIMS handbooks.^{5,6}
- * Training to facilitate understanding of the NSS embedded into emergency management training pathways and qualifications.
- * The provision of portable NSS and CIMS handbooks for quick reference in the office and Coordination Centres, to assist the agency response.

⁵ An example of an accessible free training approach, is the anti-corruption training provided by Transparency International New Zealand. A free 1.5 hour online learning module provides comprehensive anti-corruption training designed by leading experts in the field, and enables organisations to provide training for their personnel. Refer <https://www.transparency.org.nz/anti-corruption-training/>

⁶ Online reference material currently includes:

- *The National Security System Handbook* which explains The National Security System, National Security Governance structures and NZ's National Security System in response to a potential emergency or actual event.
- *The New Zealand Coordinated Incident Management System (CIMS)* handbook which describes how New Zealand agencies coordinate, command, and control incident response of any scale, how the response can be structured, and the relationships between the respective CIMS functions and between the levels of response
- *The National Exercise Programme objectives*. The objectives allow for regular inter-agency exercises, which help prepare agencies (and communities) to be able to conduct an effective response (and recovery planning) to a significant incident or emerging threat on and offshore.
- *The National Civil Defence Emergency Management Plan 2015*, and its guide, which sets out the roles and responsibilities of everyone involved in reducing risks and preparing for, responding to and recovering from emergencies. This includes central and local government, lifeline utilities, emergency services and non-government organisations.

Recommendation 2

That the National Exercise Programme (NEP) is reviewed to determine whether it is making maximum use of lessons identified. This review should take into account international best practice and could consider:

- * Whether the current objectives contribute to the implementation of identified lessons and recommendations post-exercise.
- * Whether the objectives could be more flexible, driven by a Continuous Improvement framework incorporating Lessons Management via evaluation of both exercises and emergency/event responses.
- * How performance is evaluated in NEP exercises and how lessons are identified and shared.
- * How exercise design could best support clarity around lead agencies and other roles and responsibilities.

Recommendation 3

That the government invests in a national Lessons Management system, including the establishment of national guidelines, a common language and consistent practices.

- * Consideration could be given to interoperability with international partners (for example Australia) who already have established Lessons Management systems.
- * The Lessons Management system should have the NEP as a key component, with work programmes coordinated accordingly.

Recommendation 4

Invest in a "Common Operating Picture" and note this was also a recommendation in the Technical Advisory group's Ministerial Review *Better responses to natural disasters and other emergencies in New Zealand (2018)*.⁷

- * A Common Operating Picture will provide standardised reporting templates and ways of communicating to ensure everyone involved provides, and receives, full, not partial information.
- * A Common Operating Picture would support enhanced information flows to Mayors and in the public information/social media space – critically important in an emergency.

Families of victims of the White Island eruption were welcomed and supported at a Whakatāne marae. Photo: Associated Press

Recommendation 5

That agencies recognise the importance of mental health and well-being for those managing the all-of-government response at higher levels and within coordination centres, and work together on a joint mental health and well-being plan during an event. Supporting mechanisms could include:

- * The consideration of psychological support within the 'Guidelines to support consistent CIMS implementation' currently under development by NEMA.
- * Lead agencies supporting a culture of mental health and well-being at all levels, not just first responders, within their Standard Operating Procedures and guidelines.
- * All agencies incorporating appropriate guidelines, training and best-practice psychological support into their higher-level management response (i.e. mental health and well-being is for everyone, it's not just for first responders).



⁷ *Delivering better responses to natural disasters and other emergencies: Government response to the Technical Advisory Group's recommendations (2018)*. <https://dpmc.govt.nz/our-business-units/ministry-civil-defence-emergency-management/ministerial-review-better-responses>

Part II Background

Whakaari/White Island

Whakaari/White Island is New Zealand's most active volcano and is located 48km off the North Island's Bay of Plenty coast, north-east of Whakatāne.

The island is approximately 2km in diameter, with 70 per cent of the cone under the sea and the highest point at an elevation of 321 metres. It is at the northern end of the Taupo Volcanic Zone. The main crater takes up much of the island, with the crater floor less than 30m above sea level. Whakaari/White Island has been active for at least 150,000 years.

Whakaari is within the traditional tribal area of Ngāti Awa, who are based in the eastern Bay of Plenty.⁸ Whakaari is significant to Te Whānau-a-Apanui iwi.⁹

The island is a private reserve and has been owned by one family since 1936.

Prior to the eruption, Whakaari/White Island was a popular tourist attraction (more than 10,000 visitors annually) and visited by tour operators flying above and around the island, helicopters and boats landing on the island, and boats mooring near the island.¹⁰

Situation

The Whakaari/White Island volcano erupted on Monday, 9 December 2019 at 14:11 New Zealand Daylight Time.

There were 47 people on the island at the time of the eruption. These were:

- * Thirty eight passengers from the *Ovation of the Seas* cruise liner operated by global cruise ship company Royal Caribbean
- * Four White Island Tours guides (guiding the cruise liner tourists)
- * One Volcanic Air helicopter pilot
- * Four tourist passengers of the Volcanic Air pilot.¹¹

There were 21 fatalities in total. Nineteen people died in New Zealand and two people later died in Australia. The fatalities were as follows:

- * Five people were confirmed deceased on arrival at Whakatāne
- * Six deceased people were later recovered from the island
- * Two people reported missing have since been declared deceased
- * Eight people later passed away in hospital (six in New Zealand, two in Australia).¹²

⁸ Harvey, L. (2020). *Ngāti Awa - Origins, Te Ara - the Encyclopedia of New Zealand*. <http://www.TeAra.govt.nz/en/ngati-awa/page-1>

⁹ Paora, R. (2020). *Te Whānau-a-Apanui, Te Ara - the Encyclopedia of New Zealand*. <http://www.TeAra.govt.nz/en/te-whanau-a-apanui>

¹⁰ Bay of Plenty Civil Defence Emergency Management Group. (2019). *Whakaari/White Island Response Plan*. <http://www.bopcivildefence.govt.nz/media/1362/whakaari-white-island-response-plan-2019-operational-draft-eruption-9-december-2019-redacted-lgoima.pdf>

¹¹ NZ Police, personal communication, March 3, 2020

¹² NZ Police, personal communication, March 3, 2020

Experts from GNS Science identified the event as a phreatic eruption - a release of steam and volcanic gases that caused an explosion, launching rock and ash into the air.

The ongoing seismic and volcanic activity in the area, as well as heavy rainfall, low visibility and toxic gases hampered recovery efforts over the week following the incident.

All-of-Government Response

At the time of the eruption on Whakaari/White Island, NEMA was already running its NCC in support of a South Island Severe Weather event.

When the eruption occurred, the NEMA Duty Team called in additional staff to support response operations across the two events, with the NCC Activation Mode elevated to Mode 2 (Engage). On Tuesday, 10 December, the NCC Mode of Activation for the Bay of Plenty event was raised to Mode 3 (Assist).^{13, 14}

The Bay of Plenty Civil Defence Emergency Management (CDEM) Group led the coordinated response from Whakatāne, where they activated a combined local and regional Emergency Operation Centre (EOC). Ngāti Awa was the iwi lead, providing

for the integration of iwi/Māori perspectives and tikanga.¹⁵

There were complexities to the central government response, with different agencies leading on different aspects.

National security challenges are often complex and cut across a range of agencies and sectors. When there is ambiguity as to who should be the lead, agencies are expected to consult with the Chief Executive of DPMC at the earliest opportunity in order to resolve doubt and confirm arrangements.

Department of Prime Minister and Cabinet. (2016, p. 19)
National Security System Handbook

From central government, NEMA was the lead agency supporting the CDEM Group as per New Zealand's emergency management system arrangements. New Zealand Police led the rescue and body recovery, with support from the New Zealand Defence Force. The Ministry of Health and District Health Boards led the provision of medical treatment for victims.

¹³ The four Modes are 1 = Monitor, 2 = Engage, 3 = Assist, 4 = Direct. The role of Mode 3 Assist role is, in addition to engagement activities, to process or co-ordinate requests for support from regional and local organisations, including assistance from overseas, and international liaison and to report to or advise Government. For further information about Modes, refer to *The Guide to the National Civil Defence Emergency Management Plan 2015*. <https://www.civildefence.govt.nz/assets/guide-to-the-national-cdem-plan/Guide-to-the-National-CDEM-Plan-2015.pdf>

¹⁴ Activation Modes and timings provided by NEMA, personal communication, May 6, 2020.

¹⁵ The Government aims for greater recognition, understanding and integration of iwi/Māori perspectives and tikanga in emergency management and greater recognition, understanding and integration of the capacity and capability of marae to look after people in an emergency. For further information refer to Chapter 4: Role of Iwi in the publication *Delivering better responses to natural disasters and other emergencies: Government response to the Technical Advisory Group's recommendations* (2018). <https://dpmc.govt.nz/our-business-units/ministry-civil-defence-emergency-management/ministerial-review-better-responses>

This response was also the first opportunity for the recently re-established Scientific and Technical Advisory Committee (STAC) - an entity providing scientific and technical guidance to response agencies and Incident Management Teams - to play a role.

The all-of-government response to the Whakaari/ White Island eruption lasted 11 days in total. The NCC remained operational until Friday 20 December 2019, when it was stood down for the Christmas holiday period (but with enhanced duty and standby arrangements in place).

National Security System activation

Crises or events that impact New Zealand or its interests can occur at any time, and at a variety of scales. The NSS is activated when one or more of the following apply:

- * Increasing risk, or a disaster or crisis, affects New Zealand interests
- * Active, or close coordination, or extensive resources are required
- * The crisis might involve risk to New Zealand's international reputation
- * An issue is of large scale, high intensity or great complexity
- * Multiple smaller, simultaneous, events require coordination
- * An emerging issue might meet the above criteria in the future, and would benefit from proactive management.¹⁶

The NSS provides for a coordinated government response in which:

- * Risks are identified and managed
- * The response is timely and appropriate
- * National resources are applied effectively
- * Adverse outcomes are minimised
- * Multiple objectives are dealt with together
- * Agencies' activities are coordinated.¹⁷

In order to support robust decision-making to achieve the desired outcomes, over the course of the all-of-government response, the NSS held two ODESC meetings (10 and 11 December 2019), two Watch Groups (10 and 12 December 2019) and two Inter-Agency Working Groups (12 and 19 December 2019).

Recovery teams go through the decontamination process after returning from Whakaari/ White Island. Photo: NZ Police



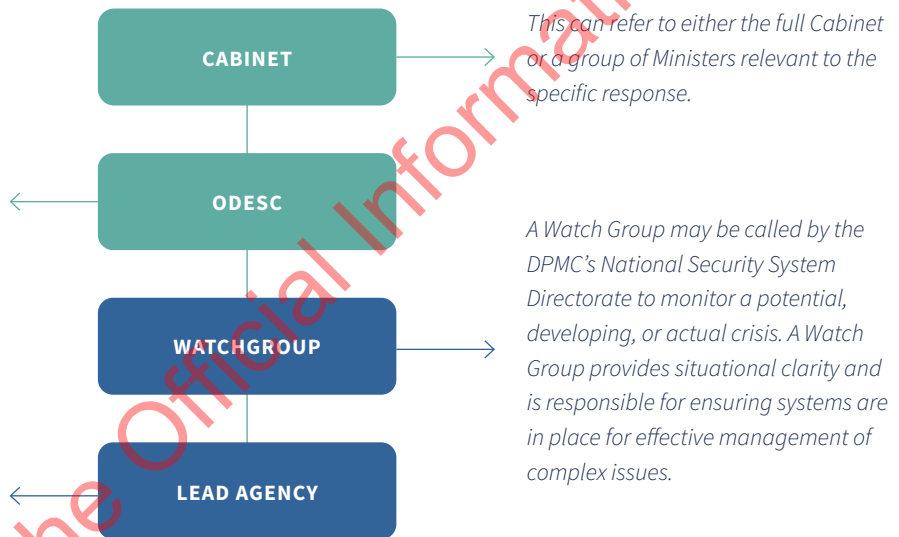
¹⁶ Department of Prime Minister and Cabinet. (2016, p.40). *National Security System Handbook*. <https://dpmc.govt.nz/publications/national-security-system-handbook-htm>

¹⁷ Department of Prime Minister and Cabinet. (2016, p.40). *National Security System Handbook*. <https://dpmc.govt.nz/publications/national-security-system-handbook-htm>

Diagram 2 National Security System roles and relationships in a crisis

Officials Committee for Domestic and External Security Co-ordination - A committee of Chief Executives which, during an emerging or actual security event, is responsible for providing strategic direction and coordinating the all-of-government response.

Lead agency means the agency with the primary mandate for managing the response to an emergency, as legislated in the National Civil Defence Emergency Management Plan Order 2015.



Helicopter returns to Whakatāne Airport after the body recovery operation. Photo: DPA

Part III Approach and Methodology

Background to LessoNZ

New Zealand does not have a national standard for Lessons Management and unlike Australia, doesn't have a handbook with best practice guidance for Lessons Management in disaster resilience.

In 2018, the emergency response sector recognised there was a keenness to enhance interoperability and organisational learning and there was a willingness to share lessons identified across agencies. As a result, the multi-agency LessoNZ community of practice was established in October 2018.

The group currently has 47 members from 25 agencies representing emergency services, Defence and key infrastructure providers. Participation operates on the principle of trust (particularly in matters of confidentiality) and a willingness to share debriefs, reviews and lessons.

Data Collection

In mid-December 2019, Government agencies were asked to submit their reviews, debriefs and feedback from the Whakaari/White Island event, to LessoNZ, to inform an analysis of the all-of-government response to the event.

Constraints

LessoNZ worked with the information provided to them by agencies responding to the request to submit feedback. This consultation was at the high-level inter-agency response, not local level. As a result, there was no information received directly

from Ngāti Awa, private business, local government or community groups in the Whakatāne area. The local debrief was led by Bay of Plenty Civil Defence Emergency Management Group.

Contributors

Contributions were received from people representing the agencies listed below. It includes feedback from people seconded into centres managing the event, for example, the National Crisis Management Centre (NCMC), Whakatāne EOC and the Police Major Operations Centre.

- * Accident Compensation Corporation including Whakatāne Branch
- * Crown Law
- * Department of Conservation
- * Department of Internal Affairs
- * Department of the Prime Minister and Cabinet
- * Ministry of Health
- * Fire and Emergency New Zealand
- * Immigration New Zealand
- * Institute of Environmental Science and Research
- * Ministry for the Environment
- * Ministry of Business, Innovation and Employment
- * Ministry of Foreign Affairs and Trade
- * Ministry of Justice
- * Ministry of Transport
- * Ministry of Social Development
- * Ministry for Primary Industries
- * National Emergency Management Agency
- * New Zealand Customs Service
- * New Zealand Defence Force

- * New Zealand Police
- * Oranga Tamariki
- * State Services Commission
- * Te Puni Kōkiri
- * Tourism New Zealand
- * WorkSafe New Zealand.

Contributions were also received from people in the Scientific and Technical Advisory Committee.

Observations from the Whakaari White Island event

As there is currently no all-of-government national standard or guidelines for capturing and submitting feedback for lessons, the observations received by LessoNZ were varied in structure, detail and format.

Observations were obtained via the following sources:

- * A Lessons Observation Survey circulated with an invitation to submit individual or organisation observations
- * A dedicated email address provided for submitting relevant documents and reports that were not captured by the survey
- * Debrief sessions organised by National Security System Directorate (NSSD).

Methodology

Practitioners from the LessoNZ community of practice used the OILL methodology (i.e.

observations, insights, lessons identified, lessons learned) to review and analyse the data. This method collates observations and uses a thematic process to stream them into insights and lessons identified. Recommendations were developed from the lessons identified.

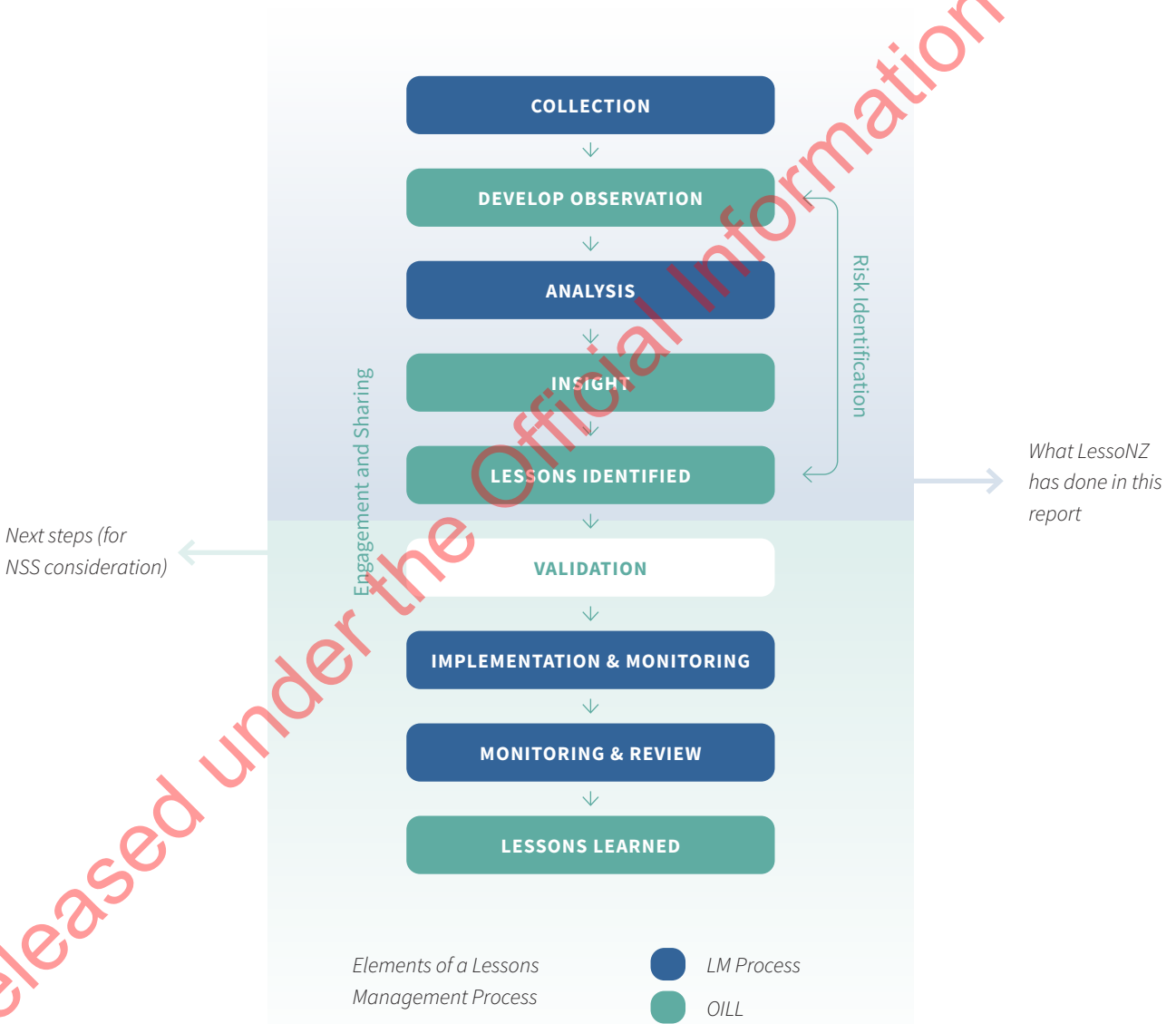
The agency reports, debriefs and feedback were analysed for:

- * Emerging trends
- * Issues that warranted highlighting
- * Success stories of what went well
- * Opportunities for improvement.

A dive search team at Whakaari/White Island. Photo: NZ Police



Diagram 1 Lessons Management



The Lessons Management handbook (2019) for Australian Disaster Resilience, provides definitions to assist in understanding O.I.L.L terminology.¹⁸

OBSERVATION: A record of a noteworthy fact or occurrence that someone has heard, seen, noticed or experienced as an opportunity for improvement or an example of good practice.

INSIGHT: A deduction drawn from the evidence collected (observations), which needs to be further considered.

Insights occur when there are multiple observations (pieces of evidence), which are similarly themed. As a general rule, a minimum of three observations (from multiple sources) should be used for an insight although an insight may be developed when a single observation poses a high risk to the organisation. Insights may also identify an opportunity

for further analysis. Insights can be positive or negative, and can contribute to reinforcing positive behaviour or changing practices. An insight defines the issue, not the solution.

LESSON: A lesson is knowledge or understanding gained by experience. The experience may be positive (a good practice) or negative (a gap in performance or doctrine).

LESSON IDENTIFIED: A conclusion with a determined root cause based on the analysis of one or more insights and a viable course of action that can either sustain a positive action or address an area for improvement.

LESSON LEARNED: A lesson is only learned once the approved change is implemented and embedded in the organisation. Depending on the changes required, it may take several years for the change to be institutionalised across the organisation.

¹⁸ Australian Government. (2019, p.24). *Lessons Management. Australian Disaster Resilience Handbook Collection*. https://www.aidr.org.au/media/1760/aidr_handbookcollection_lessonsmanagement_2019.pdf

Part IV Findings

This part of the report covers successes (what worked well), insights, and lessons identified.

Successes

Observations acknowledging things that went well during the Whakaari-White Island response centred on three themes:

- * Leadership and professionalism
- * Skills and expertise of individuals and groups contributing to the whole
- * Systems and facilities that supported leadership and enabled collegial support and teamwork.

The following successes were noted by contributing agencies:

1. An agency commented that bringing operational agencies together in the EOC, close to the centre of the event, contributed greatly to the ability to develop and deliver the body recovery plan.
2. STAC was valued by several agencies for its expertise, operational strengths and live interaction with the operational teams at the Whakatāne EOC.
3. An agency noted that the importance placed on Tikanga Māori processes (the Maori way of doing things) was valued. Early engagement with Ngāti Awa was considered central to community responsiveness and support.
4. An agency noted that the early establishment of the Transport Recovery Team was proactive and enabled the team to build agency relationships early, thereby enabling the effective handling of two concurrent significant events.¹⁹
5. An agency commented that the early establishment of an inter-agency Border working group comprising of the New Zealand Customs Service, Immigration New Zealand and the Ministry for Primary Industries enabled a co-ordinated approach and response.
6. The facilities arranged for the agencies providing Welfare services worked well. The Welfare hub was established away from the centre of the operational response and was appropriate in the context of this event due to welfare staff working directly with affected family members. The hub was in a vacant building which had a large meeting space, smaller breakout rooms for private interviews, a kitchen with fridge, WiFi-connectivity, and a cleaning crew.

¹⁹ The transport sector agencies involved in the Transport Recovery Team for the Whakaari/White Island response were the Ministry of Transport, the Civil Aviation Authority and Maritime New Zealand (including the Rescue Coordination Centre for New Zealand). Two other transport sector entities were involved in the response, although not part of the Transport Recovery Team. These were the MetService, for volcanic ash forecasts, and Airways New Zealand who issued a Notice to Airmen (NOTAM) in accordance with Civil Aviation procedures for volcanic eruptions.

7. Deploying a strategic communications group to work at the operational (front end) of the event was reported by an agency to have worked well, with the suggestion that this should be done early in an event.
8. An agency noted that the continuity of the liaison officer, and other agency personnel, led to improved inter-agency co-operation.
9. Special mention was made of the:
 - * Leadership of the Police Acting Superintendent who led the planning for the return to Whakaari and the body recovery phase
 - * Bravery and professionalism of the NZ SAS personnel who volunteered to return to Whakaari to recover bodies.

“

“STAC was able to pull together expertise and best practice advice at very short notice, and to respond to a situation that posed unprecedented challenges.”

- *Observation*



Rescuers land on New Zealand's White Island after a volcanic eruption on 9 December. **Photo:** Xinhua/Barcroft Media

Insights

Insights can be positive or negative and can sustain a positive action or address an area of improvement.

Nineteen insights were formed into the following themes:

- * Roles and responsibilities (eight insights)
- * Information flow (six insights)
- * Resourcing and capability (two insights)
- * Facilities, mental health and well-being and Continuous Improvement (one insight each)

Roles and responsibilities

a) Observations highlight challenges identifying who was the lead agency in the early stages, who were support agencies and who had responsibility for some roles and whether it was locally or nationally led. More education of senior leaders is required on the CDEM Plan and the NSS Handbook which lays out the requirements for these roles and functions.

(Insight 2. Contributes to Lessons 1 and 2)

b) Observations indicate there is room for improvement in tasking, and follow up. There was confusion over who had responsibility for tasking. Reference should be made to the current CDEM Plan and NSS Handbook which state who is responsible for what tasks to alleviate this issue. *(Insight 3. Contributes to Lessons 1 and 2)*

c) STAC provide valued scientific/technical advice and expertise to response agencies and Incident Management Teams. Observations highlight that there wasn't a clear understanding internally and externally as to the function or capabilities of this team. This should be addressed to ensure better outcomes in the future. *(Insight 5. Contributes to Lessons 1 and 3)*

d) Observations reflect the eruption was a type of event new to most of those involved in the response. Given New Zealand's geothermal make up, specific training around roles and responsibilities during volcanic events should be considered along with taking the opportunity to allow for trainees to shadow key roles in incident management teams and in the NCMC to cater for a greater spread of experience and succession planning. *(Insight 8. Contributes to Lesson 5)*

e) Feedback indicates the application of CIMS worked well for this event. Feedback also highlighted the need for a Memorandum of Understanding between First Response agencies and Iwi partners. *(Insight 12. Contributes to Lesson 2)*

f) The STAC has no formal processes, templates or Standard Operating Procedures. These are yet to be developed. *(Insight 13. Contributes to Lesson 1)*

- g)** Observations report conflicting reactions to some people in liaison roles at the incident. Some were good and operated within the scope of their duties and some tried to take on more than they were tasked with or capable of. This resulted in some hard conversations that detracted from the good work being done. It is important that the right people are appointed to these roles and the functions and requirements of the role are clearly defined. *(Insight 17. Contributes to Lessons 1 and 2)*
- h)** Observations highlight there needs to be early engagement with the all-of-government group of agencies. Some agencies felt they missed opportunities to be involved and add value in their specialist areas. A list of agencies and their responsibilities should be made available to the lead agency for each event. It may not be apparent at the start of an incident that the span of responsibilities may need to stretch to cover multiple phases in response and recovery and also have implications for other agencies. This is especially true for services engaging with the community and Iwi liaison/Tikanga Māori. *(Insight 18. Contributes to Lessons 1 and 2)*

Information flow

- i)** Observations indicate the communication, actions agreed and accountabilities between agencies needs improvement. There was no formal structure to some meetings and inconsistencies in recording or disseminating information from them. *(Insight 1. Contributes to Lessons 1, 2, 3 and 4)*
- j)** Observations point to some concern about information protection. Information requirements were not clear to all external agencies, including the handling of distribution lists. The absence of an all-of-government Common Operating Picture featured prominently in the NEMA debriefs.²⁰ *(Insight 4. Contributes to Lessons 3 and 4)*
- k)** Feedback from the NEMA debrief highlight that the NCMC, although adequate in this response, is not truly fit for purpose as a national response centre. There is a need for more workspaces, breakout rooms, and easier access for support staff. The ability to link directly with the Police National Command and Coordination Centre

²⁰ “A Common Operating /picture (COP) is a representation of relevant incident information that can be shared across relevant functions and agencies during a response. A COP is achieved through a system of protocols, procedures and tools that facilitate shared awareness and understanding of the situation and enable consolidated planning.” NZ Government. (2019). *Coordinated Incident Management System (CIMS)*. Officials’ Committee for Domestic and External Security Coordination.

The Government’s response to the Technical Advisory Group recommendations relating to a Common Operating Picture can be found in the document *Delivering better responses to natural disasters and other emergencies. Government response to the Technical Advisory Group’s recommendations. August 2018.* <https://dpmc.govt.nz/our-business-units/ministry-civil-defence-emergency-management/ministerial-review-better-responses> These are R 3.4 (p. 24), Rec 7.1 (p. 35), R 7.2 (p. 36), R 8.1 (p. 38) and R 8.4 (p. 40).

(NCCC), or running the NEMA and Police responses side-by-side, and linking with the Whakatāne based EOC would have been more resource efficient and enhanced the response. *(Insight 7. Contributes to Lesson 4)*

- l)** Observations highlight the high information demand at both public and official levels, and the importance of consistency of information through a single source of truth. Challenges were experienced catering to the international media that had no physical presence in New Zealand because they couldn't attend media briefings. *(Insight 9. Contributes to Lessons 4, 5 and 8)*
- m)** Inaccuracy around the number and status of the victims was a continuous issue in the first few days of the incident with several agencies reporting different figures. Unfortunately these inaccuracies made their way into the public space. *(Insight 10. Contributes to Lessons 3 and 4)*
- n)** Observations from STAC suggest a central document repository would ensure all relevant information, inputs and outputs are captured and a directory of experts and their contact details would be available. This may be relevant to all government agencies involved in an incident, to provide a consistent source of information and prevent multiple tasking for work already underway or completed. *(Insight 15. Contributes to Lessons 3 and 4)*

Resourcing and capability

- o)** Feedback from the NEMA debrief is that agencies were generally subject to resourcing constraints. The matter of surge staffing and cross agency resource sharing featured prominently along with the issue of managing concurrent responses, noting that dual responses have a strain on resources. Dual responses functioning at different paces require an appropriately balanced approach and while having the potential for joined national reporting, this may not be the right approach. Guidelines are required. *(Insight 11. Contributes to Lesson 5)*
- p)** Observations from STAC members highlight the need for succession planning for prolonged responses. This may require assistance from overseas. This is also true for all specialist response positions where there is a limited pool available. Consideration could be given to creating a list of specialists that can be drawn from across all government agencies. *(Insight 14. Contributes to Lesson 5)*

Facilities

- q)** Observations from the Welfare providers indicate the welfare hub concept, set up at a location near the Whakatāne based EOC, worked well with a dedicated space to meet and deal with the needs of whanau and the community. It could be beneficial if each CDEM area identifies suitable spaces in their locality that could be utilised in this way for future events. *(Insight 6)*

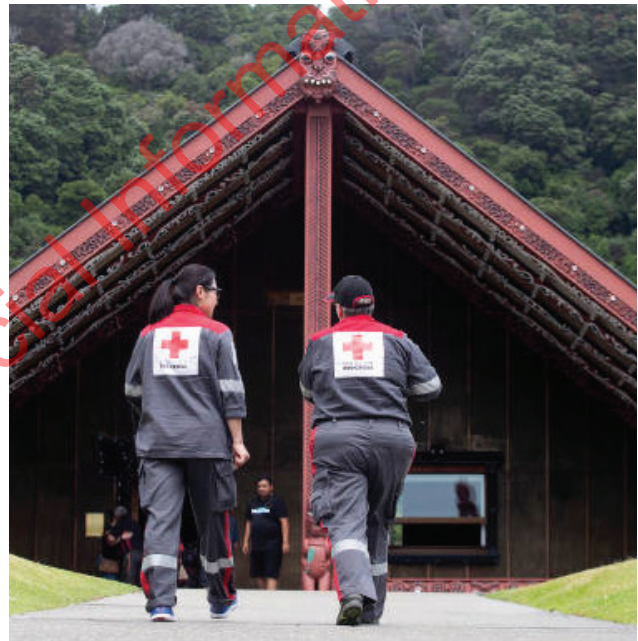
Mental health and wellbeing

- r) Feedback from the NEMA debrief indicate there was high appreciation for collegial (peer to peer) support among staff. There was mixed feedback about formal psychological support. While some staff appreciate the presence and accessibility of the Employee Assistance Programme (EAP Services), some question the appropriateness and timing of having EAP Services present in the NCMC. In some cases psychological support is left to a person's home agency or is assumed rather than confirmed and this appears to be an area without clear agency responsibility boundaries. *(Insight 16. Contributes to Lesson 6)*

Continuous Improvement Advisor

- s) A key observation reported the opportunity for Lessons Management/Real-Time Monitoring when NCMC/NCC is stood up by providing a neutral observer rostered on for lessons management/observations/immediate efficiencies. *(Insight 19. Contributes to Lesson 7)*

Medics at Marae Photo: John Boren Getty Images



White Island Memorial Flowers. Photo: John Boren Getty Images



Lessons

The 19 insights were developed into eight lessons. These lessons in turn inform the recommendations.

LESSON 1

It is important that roles and responsibilities between agencies, coordination centres and incident management team functions are identified early in the incident and made visible to all involved. *(Contributes to Recommendation 1 and 2)*

LESSON 2

Responsibilities of agencies and Iwi at the operational level and the governance level need to be clearly delineated and consistent with the CDEM plan, the NSS handbook and the CIMS manual. *(Contributes to Recommendation 1 and 2)*

LESSON 3

Agencies need clarity about how information flow works, to ensure information is reaching the right people at the right place at the right time. *(Contributes to Recommendation 1 and 4)*

LESSON 4

The ability to share information in real-time in a virtual environment between the National and Regional Coordination Centres (i.e. between the NCMC at Parliament, the Police NCCC and the Whakatāne EOC) would have been more resource efficient and enhanced the response. *(Contributes to Recommendation 4)*

LESSON 5

There is a shortage of well-trained and capable staff who can surge across to support the lead agency and operate in responses to different hazards (while being mindful of the need for agencies to also manage their own response) and a system that enables this. *(Contributes to Recommendation 1 and 2)*

LESSON 6

Formal psychological support for those involved in the response should be accessible, appropriate and well-timed, with clear agency responsibilities. *(Contributes to Recommendation 5)*

LESSON 7

A real-time and independent continuous improvement advisor embedded in the response structure would enable the early identification of inefficiencies, issues, and concerns, and allow for timely continuous improvement advice that takes into account lessons previously identified. *(Contributes to Recommendation 3)*

LESSON 8

A more visible and integrated system is required to manage the relationship with international media and international inquiries. *(Contributes to Recommendation 4)*

Part V Operation Deans - Recurrence of Lessons

This part relates to an assessment of the eight Whakaari/White Island lessons against the 18 recommendations from the *Post Operation Deans National Security System Review*.

The intent of this assessment is to ascertain whether the Operation Deans recommendations resurfaced as lessons identified in the Whakaari/White Island response.

Key Findings

The Whakaari/White Island recommendations reinforce ten of the 18 Operation Deans recommendations.

The Operation Deans recommendations, which resurfaced as lessons identified in the Whakaari/White Island response, are demonstrated on pages 25-28.

Within the grouping, Recommendation 3 and 18 from the Operation Deans review resurfaced the most often in the Whakaari/White Island lessons. These are:

- * Operation Deans Recommendation 3, which is about improving agencies understanding of the National Security System
- * Operation Deans Recommendation 18, which relates to agencies streamlining information about the status of victims.



“The event emphasised the importance of the Tikanga Māori process in response and recovery.” - *Observation*



People wait to be evacuated amid smoke from the volcanic eruption of Whakaari, on Monday, December 9, 2019. Photo: Via social media via Reuters

LESSON 1

It is important that roles and responsibilities between agencies, coordination centres and incident management team functions are identified early in the incident and made visible to all involved. *(Contributes to Whakaari/White Island Recommendation 1 and 2)*

OPERATION DEANS**Recommendation 13**

Reinforce with lead agencies that, in the context of an ODESC-led or emergency management initiated response, responsibility for coordinating the welfare services function rests with MCDEM [now NEMA] at the national level, and CDEM Groups at the regional and local levels.

Recommendation 14

Confirm which agency should be responsible for the broader social environment, particularly in transitioning to recovery.

Recommendation 15

Ensure transition of responsibility of welfare functions to a lead agency is clearly identified and understood when the ODESC response phase concludes.

LESSON 2

Responsibilities of agencies and Iwi at the operational level and the governance level need to be clearly delineated and consistent with the CDEM plan, the NSS handbook and the CIMS manual. *(Contributes to Whakaari/White Island Recommendation 1 and 2)*

OPERATION DEANS**Recommendation 3**

DPMC and the MCDEM [NEMA] to collaborate on ways to improve agencies understanding of coordination mechanisms, including through the second edition of the NSS handbook; forums, conferences and training events; and the NEP.

Recommendation 4

The NEP to plan exercises based on responses led by agencies from outside the NCMC.

Recommendation 13

Reinforce with lead agencies that, in the context of an ODESC-led or emergency management initiated response, responsibility for coordinating the welfare services function rests with MCDEM [NEMA] at the national level, and CDEM Groups at the regional and local levels.

Recommendation 14

Confirm which agency should be responsible for the broader social environment, particularly in transitioning to recovery.

LESSON 3

Agencies need clarity about how information flow works, to ensure information is reaching the right people at the right place at the right time. *(Contributes to Whakaari/White Island Recommendation 1 and 4)*

OPERATION DEANS**Recommendation 3**

DPMC and the MCDEM [NEMA] to collaborate on ways to improve agencies understanding of coordination mechanisms, including through the second Edition of the NSS handbook; forums, conferences and training events; and the NEP.

Recommendation 5

ODESC to review processes for sharing information outside of the core response agencies.

Recommendation 17

DPMC will incorporate lessons learned into the work programme underway to reinforce the core areas of cooperation that need to exist between central and local government in times of emergency response.

Recommendation 18

The Ministry of Foreign Affairs and Trade, NZ Police, Ministry of Business, Innovation and Employment, and the Department of Internal Affairs to consider how to streamline information sharing about victims of mass casualty events.

LESSON 4

The ability to share information in real-time in a virtual environment between the National and Regional Coordination Centres (i.e. between the NCMC at Parliament, the Police NCCC and the Whakatāne EOC) would have been more resource efficient and enhanced the response. *(Contributes to Whakaari/White Island Recommendation 4)*

OPERATION DEANS**Recommendation 5**

ODESC to review processes for sharing information outside of the core response agencies.

Recommendation 18

The Ministry of Foreign Affairs and Trade, NZ Police, Ministry of Business, Innovation and Employment, and the Department of Internal Affairs to consider how to streamline information sharing about victims of mass casualty events.

LESSON 5

There is a shortage of well-trained and capable staff who can surge across to support the lead agency and operate in responses to different hazards (while being mindful of the need for agencies to also manage their own response) and a system that enables this. *(Contributes to Whakaari/White Island Recommendation 1 and 2)*

OPERATION DEANS

Recommendation 1

The National Exercise Programme to continue to run exercises focused on non-natural hazards emergencies, to allow agencies to practise their response.

Recommendation 4

The National Exercise Programme to plan exercises based on responses led by agencies from outside the National Crisis Management Centre.

Recommendation 16

All government agencies to continue active efforts to build capability so that they can better understand and deliver for the diverse communities they serve.

LESSON 6

Formal psychological support for those involved in the response should be accessible, appropriate and well-timed, with clear agency responsibilities. *(Contributes to Whakaari/White Island Recommendation 5)*

NIL recommendations



Tribute to victims of the Whakaari/White Island eruption near the port of Tauranga berth cruise ship Ovation of the Seas, which carried passengers who travelled to the volcano when it erupted. Photo: John Boren, Getty Images

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LESSON 7

A real-time and independent continuous improvement advisor embedded in the response structure would enable the early identification of inefficiencies, issues, and concerns, and allow for timely continuous improvement advice that takes into account lessons previously identified. *(Contributes to Whakaari/White Island Recommendation 3)*

OPERATION DEANS**Recommendation 3**

DPMC and the MCDEM [NEMA] to collaborate on ways to improve agencies understanding of coordination mechanisms, including through the second Edition of the National Security Handbook; forums, conferences and training events; and the NEP.

Recommendation 17

DPMC will incorporate lessons learned into the work programme underway to reinforce the core areas of cooperation that need to exist between central and local government.

LESSON 8

A more visible and integrated system is required to manage the relationship with international media and international inquiries. *(Contributes to Whakaari/White Island Recommendation 4)*

OPERATION DEANS**Recommendation 11**

Following the review, the Disaster Victim Identification Committee to provide information for domestic and international audiences on disaster victim identification processes in New Zealand.

Recommendation 18

The Ministry of Foreign Affairs and Trade, NZ Police, Ministry of Business, Innovation and Employment, and the Department of Internal Affairs to consider how to streamline information sharing about victims of mass casualty events.

Concluding comments

From LessoNZ

The Whakaari/White Island volcanic eruption on Monday, 9 December 2019 presented extraordinary challenges for an all-of-government emergency response. The rescue of people and recovery of bodies from an active volcano on an off-shore island was unprecedented in New Zealand.

The ongoing seismic and volcanic activity in the area as well as heavy rainfall, low visibility and toxic gases hampered recovery efforts over the week following the incident.

There were 47 people on the island at the time of the eruption. Twenty one people died.

The Chair of the Officials Committee for Domestic and External Security Coordination invited the LessoNZ community of practice to collate and assess key overarching themes and lessons identified during the National Security System activation for the Whakaari/White Island volcanic eruption and produce a consolidated summary report including recommendations.

The Lessons Management approach is that of a non-judgemental just culture, which encourages learning and maximises the potential for ongoing improvement. Therefore, we were heartened by the observations received from the government agencies. They spoke of a commitment to working together, getting it right, and collegial support. At the same time, the agencies were open and honest in their feedback about the gaps and where improvements could be made.

The five recommendations should now be formed into an implementation plan, which is monitored and reviewed, so that continuous improvement of the National Security System is realised.

Acknowledgments

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White Island aerial photo after its eruption. Photo: George Novak, New Zealand Herald

Document acronyms

Acronyms	Description
CDEM	Civil Defence Emergency Management
DPMC	Department of Prime Minister and Cabinet
EAP	Employee Assistance Programme
EOC	Emergency Operation Centre
GNS Science	Institute of Geological and Nuclear Science Limited
NCC	National Coordination Centre
NCCC	National Command and Coordination Centre
NCMC	National Crisis Management Centre
NEP	National Exercise Programme
NSSD	National Security System Directorate
NEMA	National Emergency Management Agency
ODESC	The Officials Committee for Domestic and External Security Coordination
STAC	Scientific and Technical Advisory Committee

Whakaari/White Island Volcanic Eruption Response

November 2020

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