



‘The Future of Emergency Management’

National Emergency Management Conference 1-2 June 2016

Exercise Tangaroa Side Workshop 31 May 2016



Agenda



Urban Search & Rescue (USAR)





Mass Casualty



MANATŪ HAUORA



Mass Fatality



International Assistance/VIPs/Assisting foreign diplomatic missions





Media Coverage





Science & Research





Economic Impacts





Group discussion & report back





Exercise Tangaroa 2016



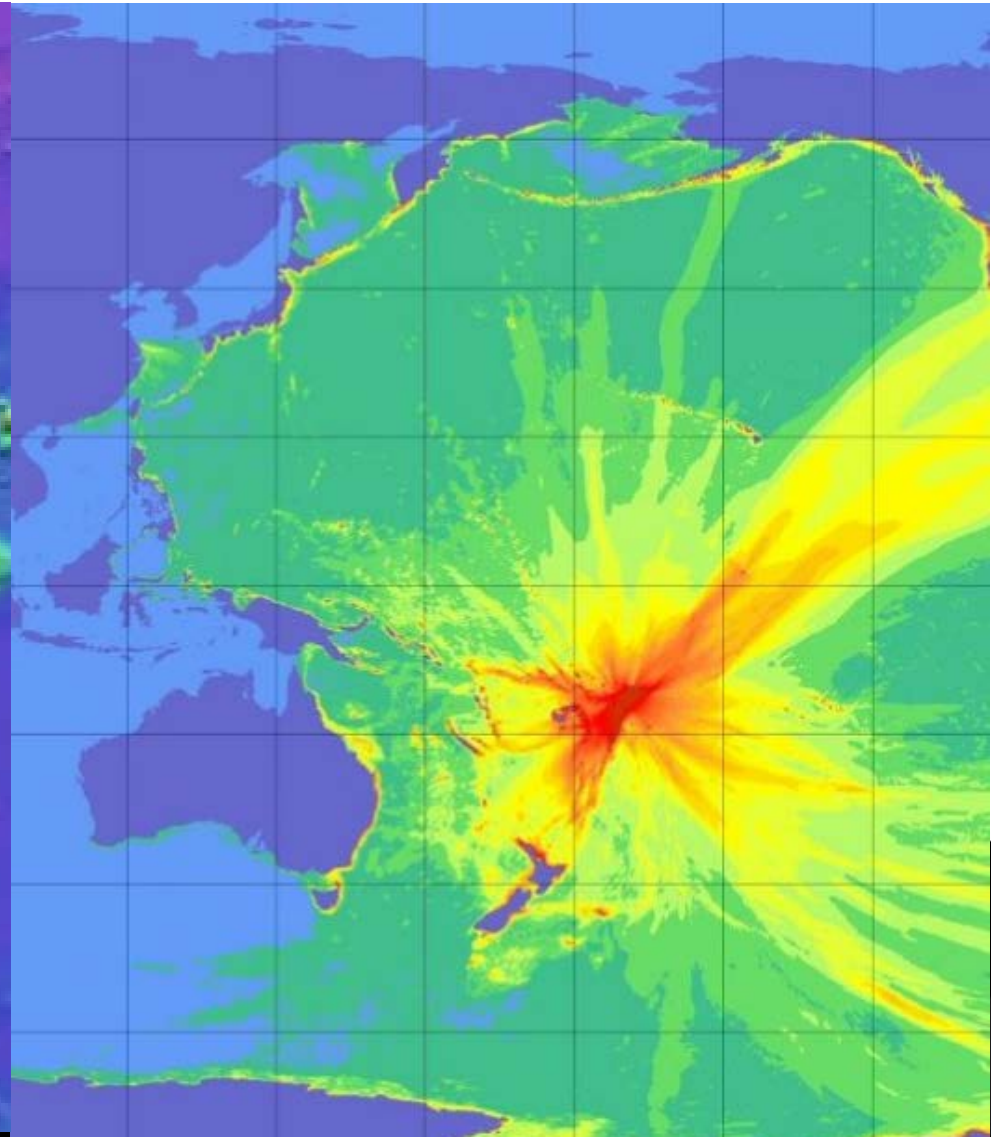
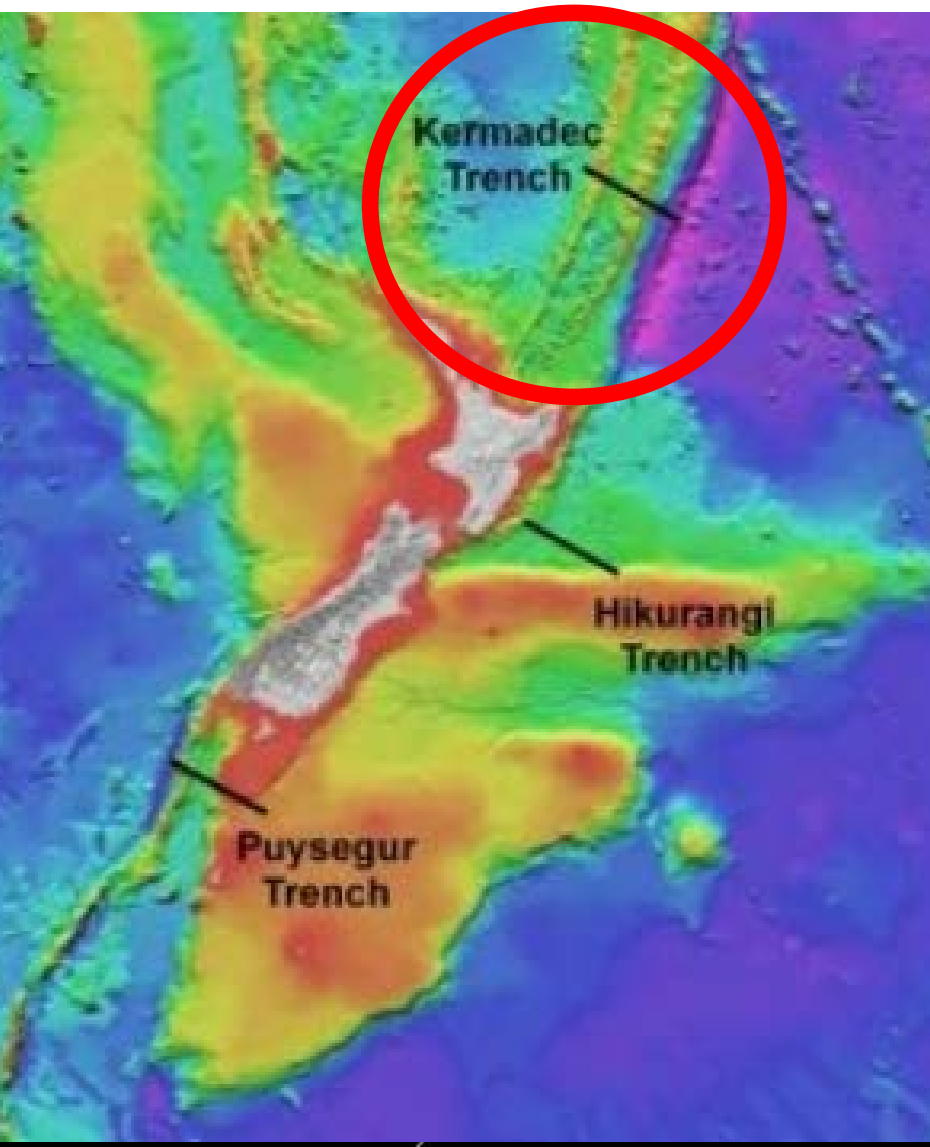
Aim

To test New Zealand's arrangements for preparing for, responding to, and recovering from a national tsunami impact.

Scenario



Kermadec Trench - Regional source



Dates





Wed 31 August 2016

Warning and initial impacts



Wed 14 Sept 2016 – Post Impact

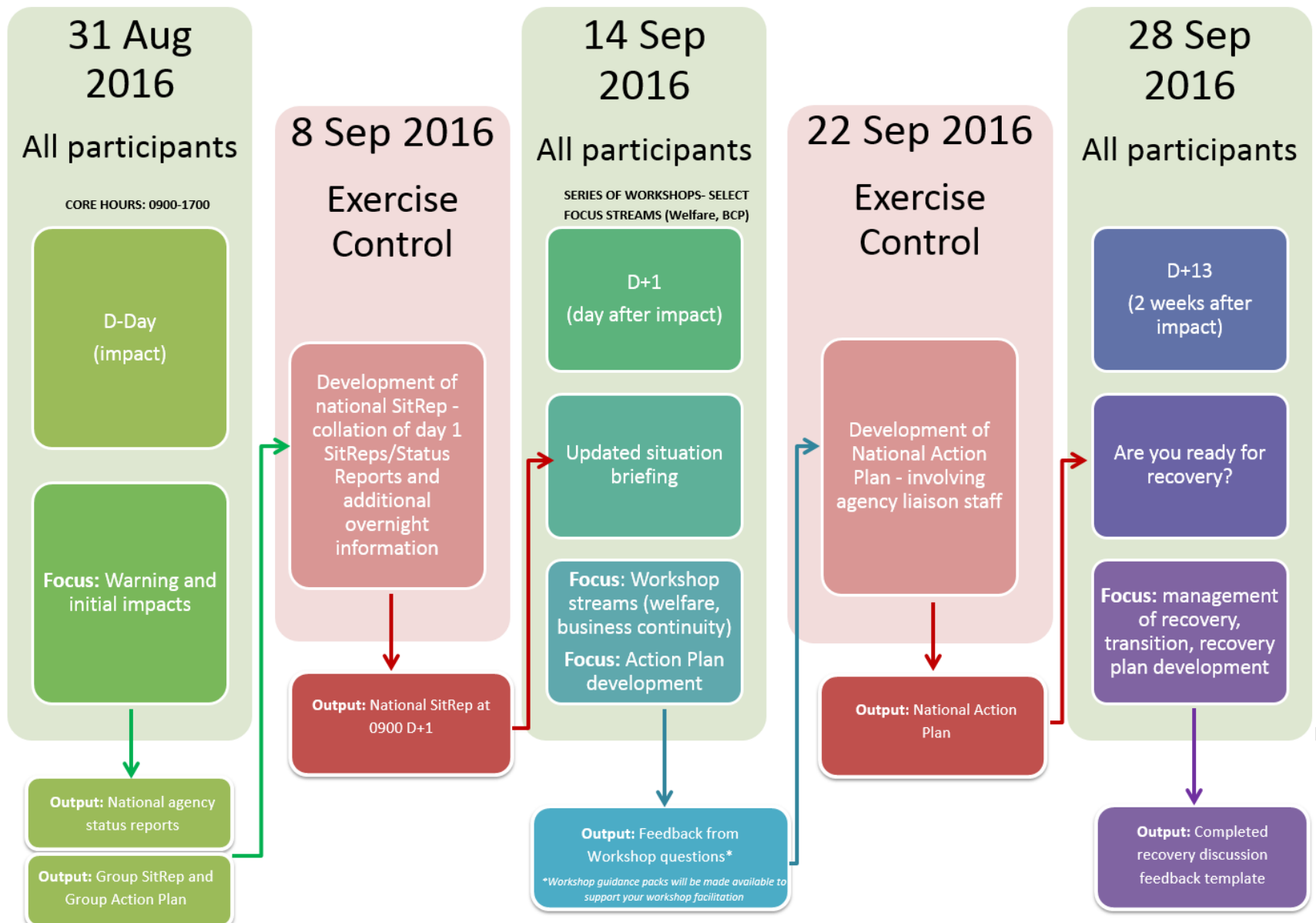




Wed 28 Sept 2016 – Recovery



Outputs



Further information





Exercises

[National CDEM Exercise Programme](#)

[National Exercise Programme \(interagency\)](#)

[Resources](#)

[CDEM exercise calendar](#)

[Exercise Tangaroa 2016](#)

Exercise Tangaroa 2016

We are testing New Zealand's arrangements for preparing for, responding to, and recovering from a national tsunami impact.

[What is Exercise Tangaroa?](#)

[What's in it for you?](#)

[How can you get involved?](#)

[Resources](#)

[Newsletters](#)

[Who can I talk to about Exercise Tangaroa?](#)



What is Exercise Tangaroa?

Exercise Tangaroa is a national (Tier 4) exercise under the National CDEM Exercise Programme and the first full exercise held under the [Interagency National Exercise Programme](#).



The Exercise will take place over three days – on 31 August, 14 September, and 28 September 2016 and will be based on a regional source tsunami scenario. This will test New Zealand's preparations for, response to, and recovery from, a national tsunami impact.



TABLE OF CONTENTS

- [Exercise Tangaroa Update Newsletter #4 - April 2016](#)
- Remember the dates!
- Agency participation in the exercise
- Why should your agency get involved?
- What is a tsunami?
- Writing is underway!
- Injects and the Master Schedule of Events List
- Exercise Tangaroa – Planning for Business Continuity
- Coming soon...
- Exercise planning progress
- National Emergency Management Conference
- [Check out our webpage](#)

Exercise Tangaroa Update Newsletter #4 - April 2016



Welcome to our fourth update newsletter for Exercise Tangaroa! We hope your exercise planning is going well. These newsletters will be issued monthly to give exercise participants an update on exercise preparations and updates on tsunami work across the



Enquiries

Your local REMA

or

Jo Guard or Sara Mitchell (nee Leighton)

Exercise Coordinators

MCDEM

CDEMexercises@dpmc.govt.nz

04 817 8555



Urban Search & Rescue (USAR)



Urban Search & Rescue (USAR)



NZ USAR Task Force 1 (NZL1)



INSARAG Classified Team

Domestically 3 locations

3 teams - 210 staff approx

Management
Technicians
Logistics
Canine
Medics
Doctors
Engineers



St John



Urban Search & Rescue (USAR)

The Role of USAR



Heavy Technical Rescue

- Management
- Logistics
- Search
- Rescue
- Medical

Recovery of people from collapsed concrete structures

Urban Search & Rescue (USAR)

The Event??



Urban Search & Rescue (USAR)

The response: First responders



New Zealand
POLICE
Nga Pirihimana o Aotearoa



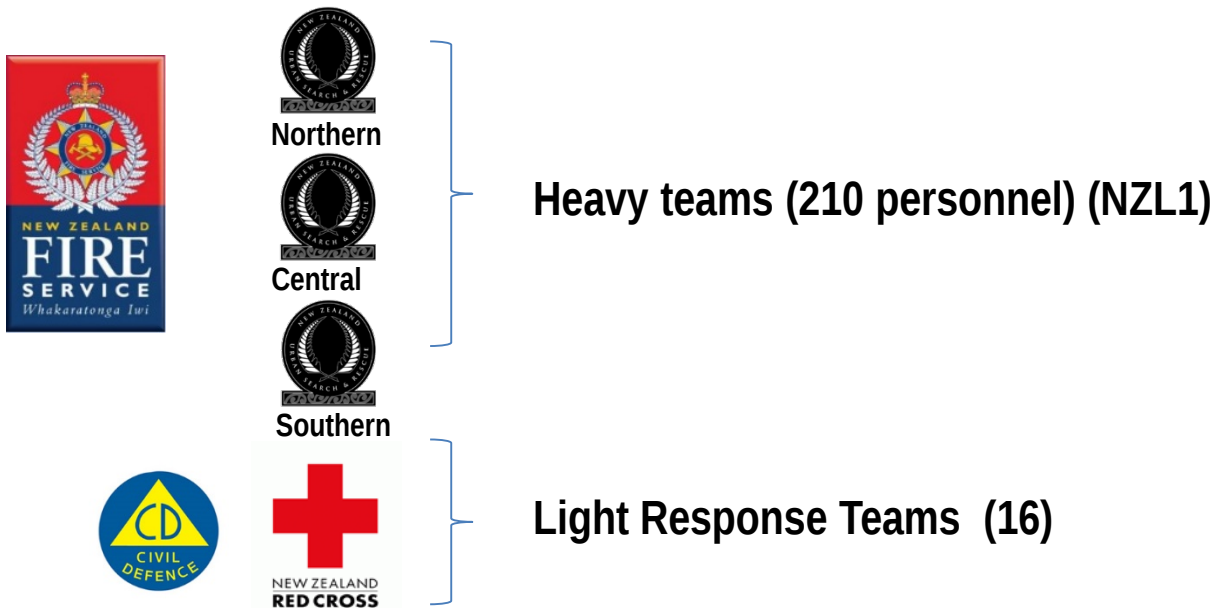
NZFS – Capabilities

- 1500 operational personnel (Career & Volunteer)
- 430 + Stations across New Zealand
- Capabilities
 - Command (C2)
 - Rescue (Technical Rescue – USAR capabilities)
 - HAZMAT
 - Firefighting



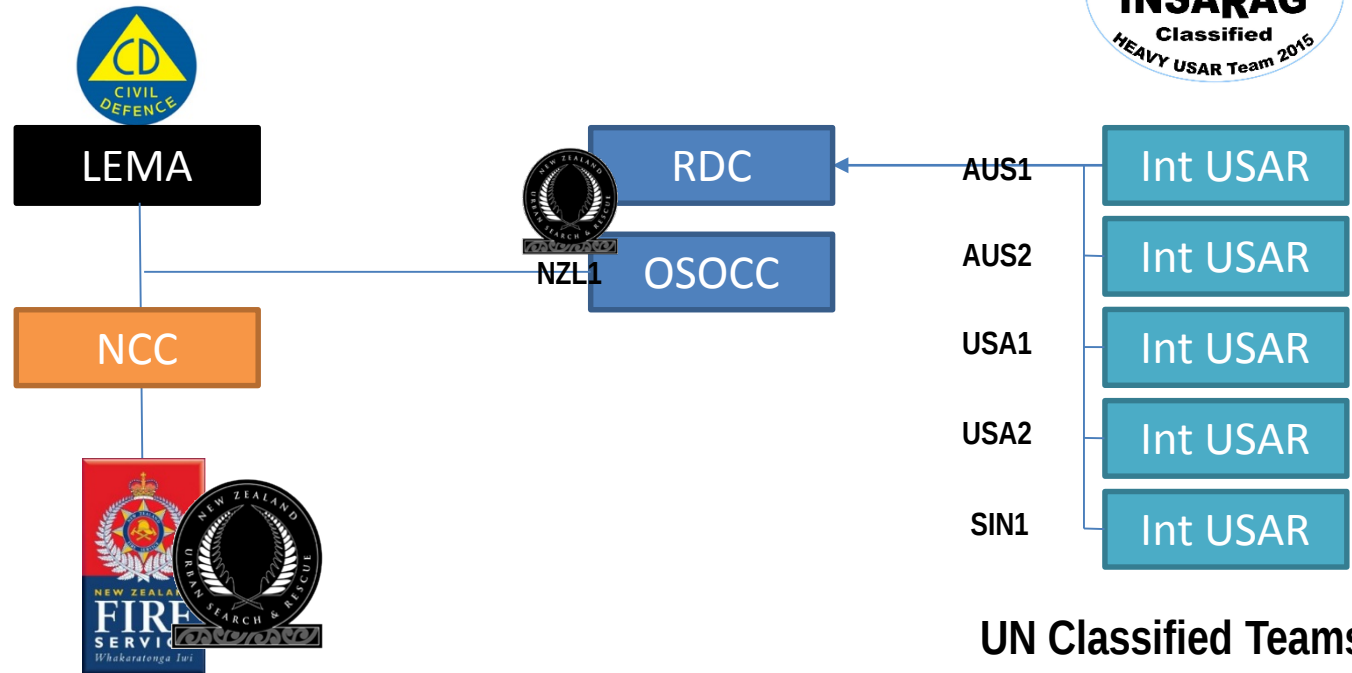
Urban Search & Rescue (USAR)

The response: NZ USAR Response



Urban Search & Rescue (USAR)

The response: International USAR Response



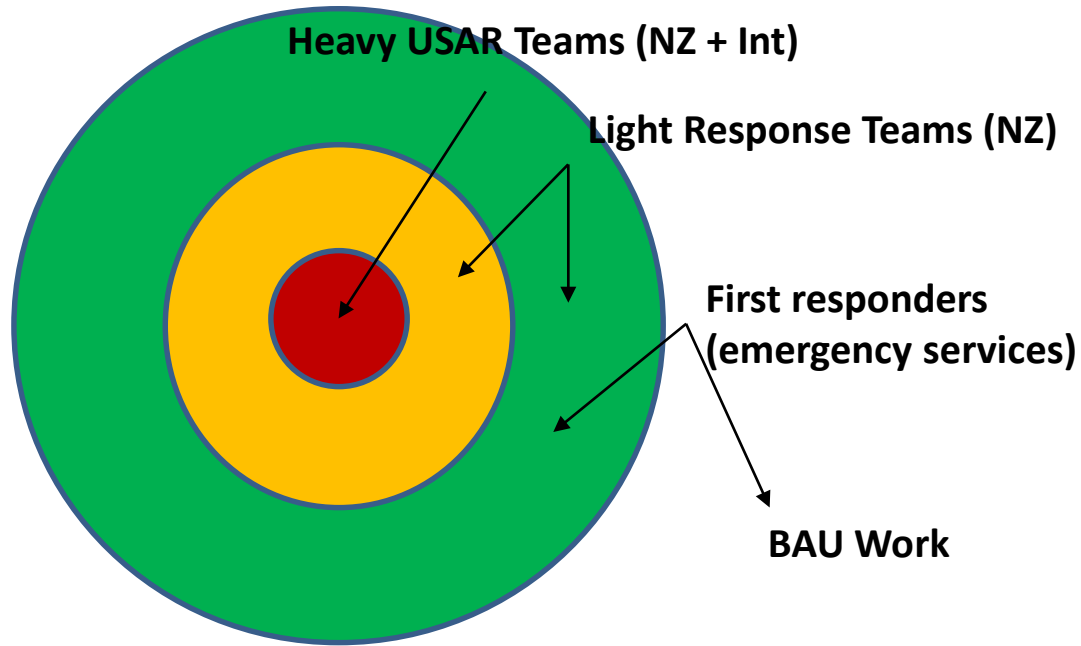
Urban Search & Rescue (USAR)

The response: International USAR Response



Urban Search & Rescue (USAR)

The response: Everything in place



USA1



CIMS

CIMS

Urban Search & Rescue (USAR)

Beyond the Rubble Pile (Recovery)



USAR / DART Operations in Recovery

- Modulised capacity
- Specialist support to BAU
- Water generation
- HAZMAT ID
- Coordination
- Infrastructure repair
- Shelter
- Medical Support (NZMAT)





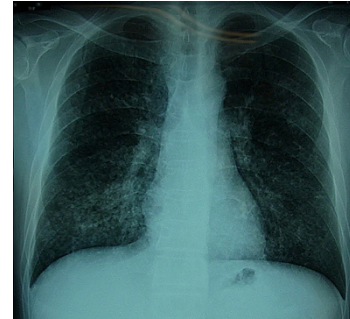
Health sector impact following tsunami





Great East Japan earthquake and tsunami

- 15,894, 2561 missing direct deaths; drowning and hypothermia
- 6152 'injured'
- 340,000 displaced, 100's CD Centres
- Structural & non structural damage to Health Care Facilities, primary care, residential care providers and lifeline utilities
- Loss of habitation and livelihood – broad social determinants of health
- Tsunami lung
- Public and Environmental Health impacts
- Psychosocial
- Long term conditions exacerbated



[10.5365/WPSAR.2011.2.4.002](http://www.dailymail.co.uk/news/article-1375981/Japan-nuclear-crisis-Radiation-bad-Chernobyl-level-7-reached-2nd-time-history.html)

<http://www.dailymail.co.uk/news/article-1375981/Japan-nuclear-crisis-Radiation-bad-Chernobyl-level-7-reached-2nd-time-history.html>

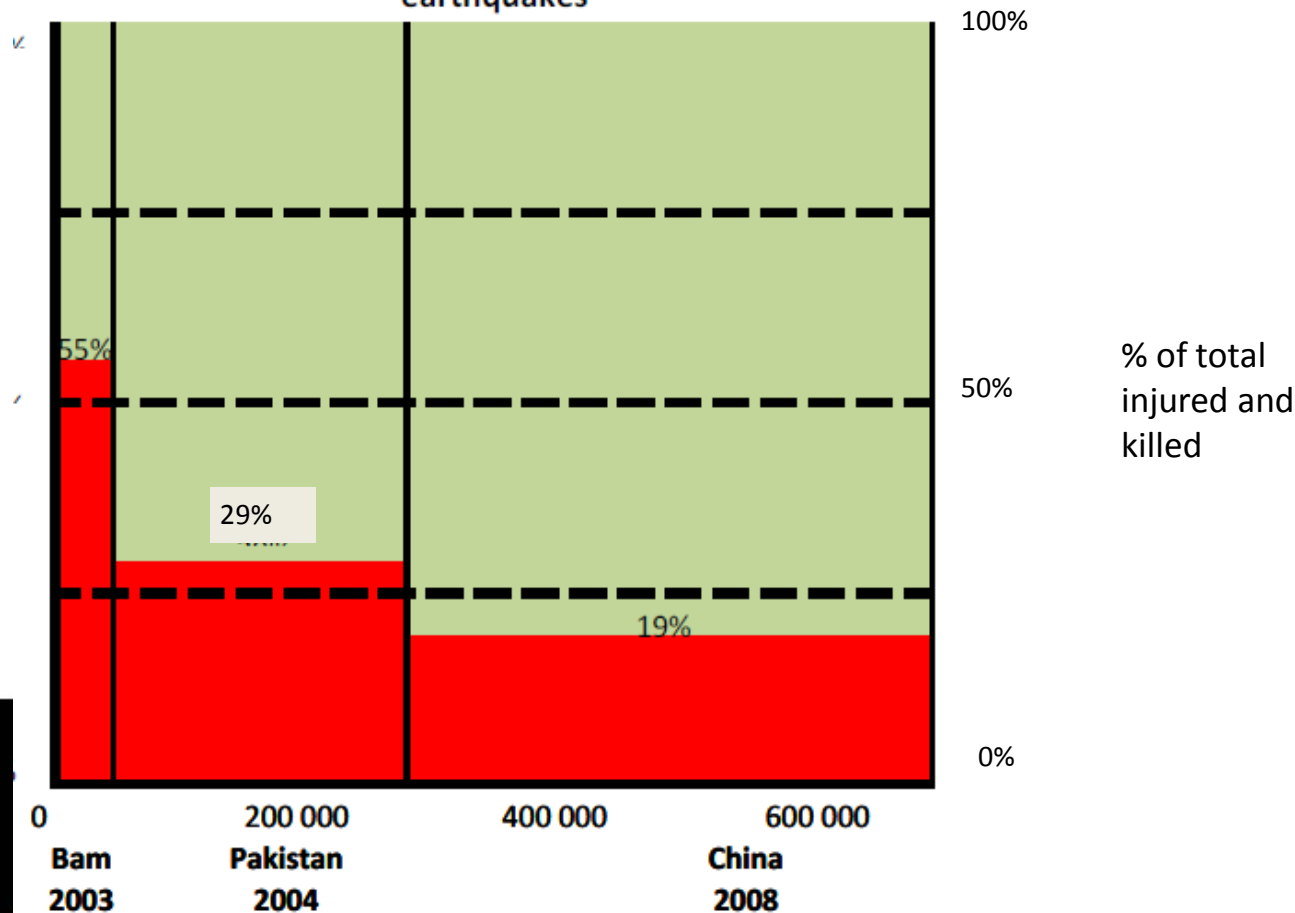


<i>Effect</i>	<i>Earthquakes</i>	<i>Strong Winds</i>	<i>Tsunamis and Flash floods</i>	<i>Ordinary Floods</i>	<i>Landslides</i>	<i>Volcanic and Lava Activity</i>
Loss of lives	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>High</i>
Severe injuries requiring complex treatment	High	Moderate	Low	Low	Low	Low
Major risk of communicable diseases	<i>Potential risk following all significant phenomena (Likelihood increases with crowding and the degradation of sanitary conditions)</i>					
Damage to health facilities	<i>Severe (structure and equipment)</i>	<i>Severe</i>	<i>Severe but localized</i>	<i>Severe (equipment only)</i>	<i>Severe but localized</i>	<i>Severe (structure and equipment)</i>
Damage to water supply systems	<i>Severe</i>	<i>Light</i>	<i>Severe</i>	<i>Light</i>	<i>Severe but localized</i>	<i>Severe</i>
Food scarcity	<i>Infrequent (generally caused by economic or logistical factors)</i>		<i>Common</i>	<i>Common</i>	<i>Infrequent</i>	<i>Infrequent</i>
Large migrations	<i>Infrequent (common in severely affected urban areas)</i>		<i>Common (Generally limited)</i>			



Earthquakes vs Tsunami

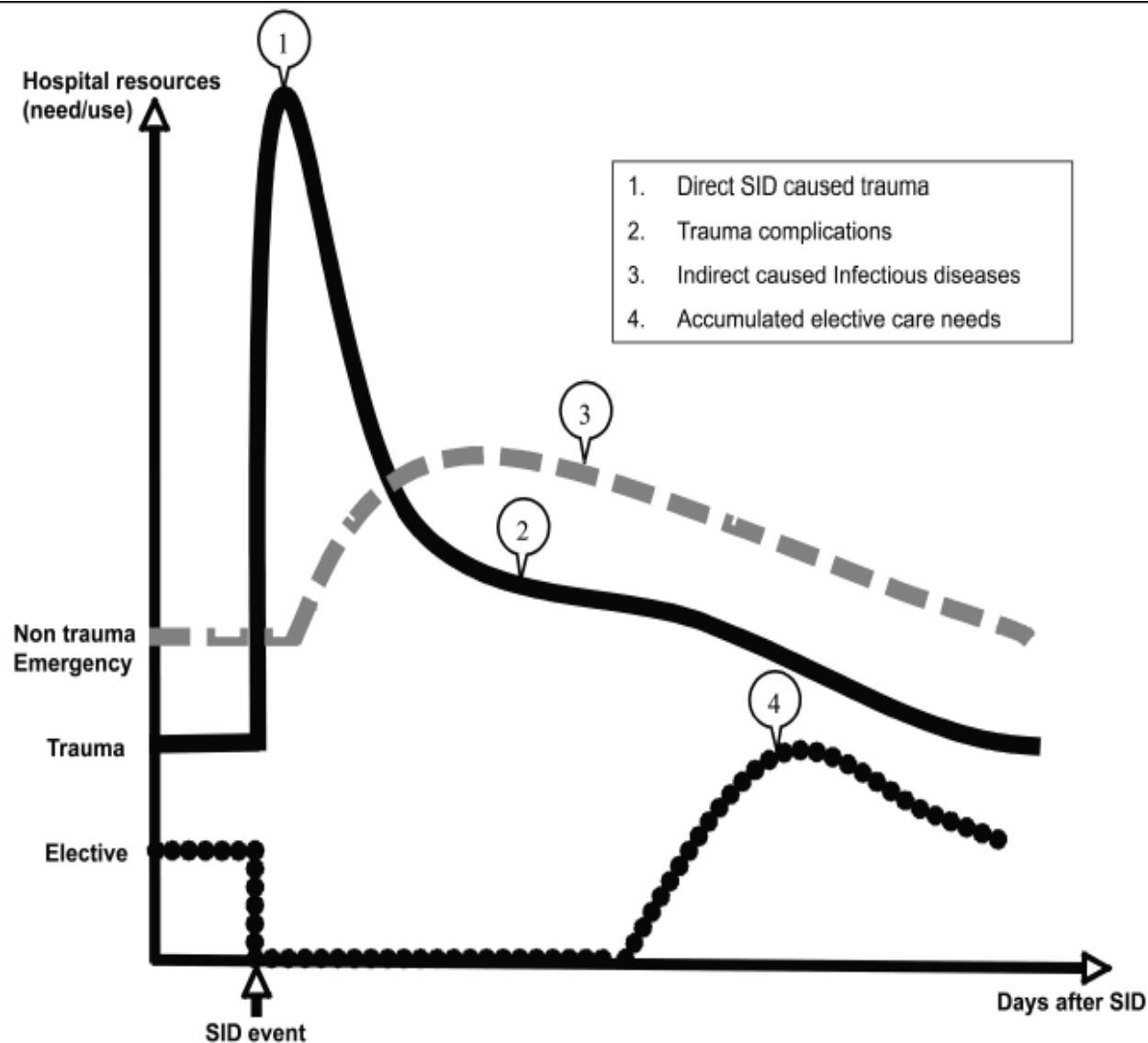
Relationship between killed and injured in three recent earthquakes



Note: Photo of wound debridement in field hospital removed



Burden of disease in disaster





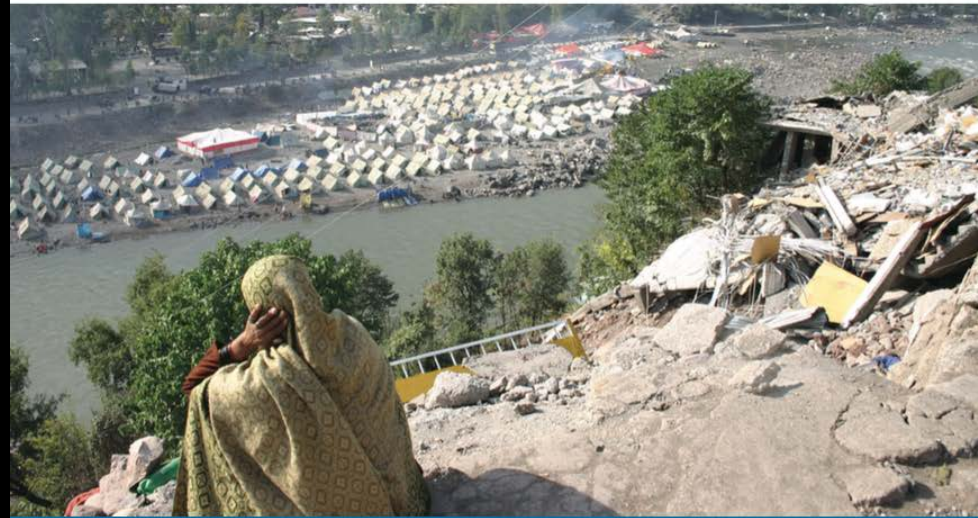


WHO INITIATIVE DEVELOPED POST HAITI

- INAPPROPRIATE
- UNREGISTERED
- UNQUALIFIED RESPONSES

MINIMUM AND TECHNICAL STANDARDS FOR TRAUMA AND SURGICAL RESPONSE TO SUDDEN ONSET DISASTER

- TYPHOON HAIYAN
- EBOLA VIRUS DISEASE
- CYCLONE PAM
- NEPAL EARTHQUAKE
- ECUADOR EARTHQUAKE



CLASSIFICATION AND MINIMUM STANDARDS FOR FOREIGN MEDICAL TEAMS IN SUDDEN ONSET DISASTERS





Classification of and standards for Foreign Medical Teams

FMT Type	Definition	Services	Key Characteristics	Minimal Benchmark Indicators	Opening Hours
1. Outpatient Emergency Care	Outpatient initial emergency care of injured patients and other significant health issues	- Triage, assessment, first aid - Stabilisation + referral of severe trauma and non-emergencies	- Light, portable and adaptable - Care adapted to context and	100 patients/day	Day time services
2. Inpatient Surgical Emergency Care	Inpatient acute care, general and obstetric surgery for trauma and other medical conditions	- Surgical triage, assessment and advanced life support - Definitive wound and basic fracture management	- Use existing or deployable facility structures - Clean operating theatre	1 operating theatre with 1 operating room:	Day and night services
3. Inpatient Referral Care	Complex inpatient referral surgical care including intensive capacity	- Capacity to provide type 2 services - Complex reconstructive wound and orthopaedic care	- Use existing or deployable facility structures - Sterile operating theatre	1 operating theatre with at least 2 operating	Day and night services
Additional Specialist Care	Additional specialised care cells with	- Intensive care beds with 24h monitoring and ability to ventilate - Acceptance and referral services	Care appropriate to support referrals from FMT1+2 and national health system	- minor operations per day 4-6 intensive care beds	On request

Type 1- Outpatient Emergency Care and Referral

Type 2- Inpatient Surgical Emergency Care

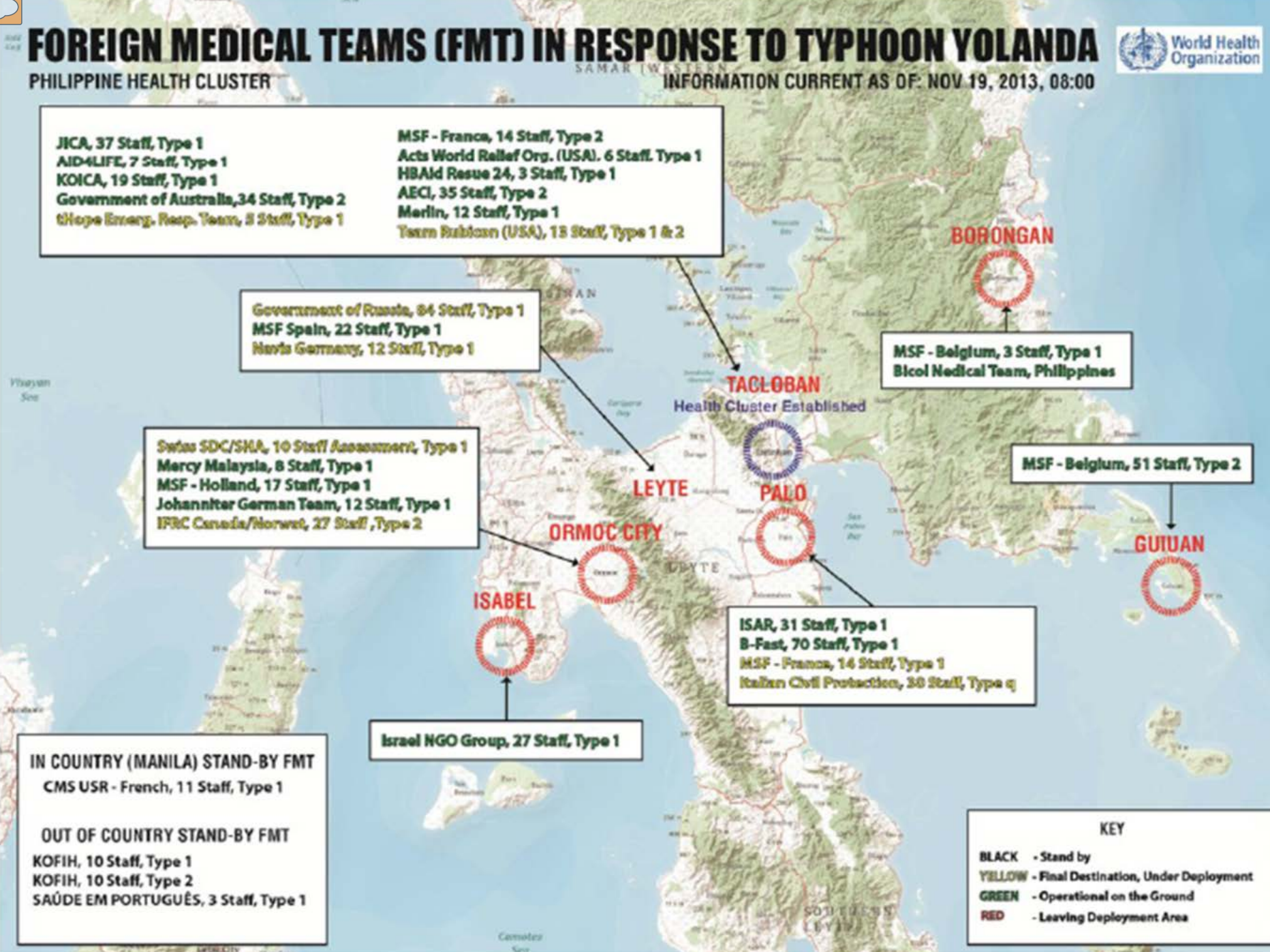
Type 3- Inpatient Referral Care

Additional Specialist Care FMT (e.g. Paediatric Surgery etc)

FOREIGN MEDICAL TEAMS (FMT) IN RESPONSE TO TYPHOON YOLANDA

PHILIPPINE HEALTH CLUSTER

INFORMATION CURRENT AS OF: NOV 19, 2013, 08:00



JICA, 37 Staff, Type 1
AID4LIFE, 7 Staff, Type 1
KOICA, 19 Staff, Type 1
Government of Australia, 34 Staff, Type 2
tHope Emerg. Resp. Team, 3 Staff, Type 1

MSF - France, 14 Staff, Type 2
Acts World Relief Org. (USA), 6 Staff, Type 1
HBAid Rescue 24, 3 Staff, Type 1
AECI, 35 Staff, Type 2
Merlin, 12 Staff, Type 1
Team Rubicon (USA), 13 Staff, Type 1 & 2

Government of Russia, 84 Staff, Type 1
MSF Spain, 22 Staff, Type 1
Navia Germany, 12 Staff, Type 1

Swiss SDC/SHA, 10 Staff Assessment, Type 1
Mercy Malaysia, 8 Staff, Type 1
MSF - Holland, 17 Staff, Type 1
Johanniter German Team, 12 Staff, Type 1
IFRC Canada/Norway, 27 Staff, Type 2

IN COUNTRY (MANILA) STAND-BY FMT
CMS USR - French, 11 Staff, Type 1

OUT OF COUNTRY STAND-BY FMT
KOFIH, 10 Staff, Type 1
KOFIH, 10 Staff, Type 2
SAÚDE EM PORTUGUÊS, 3 Staff, Type 1

Israel NGO Group, 27 Staff, Type 1

TACLOBAN
Health Cluster Established

MSF - Belgium, 3 Staff, Type 1
Bicol Medical Team, Philippines

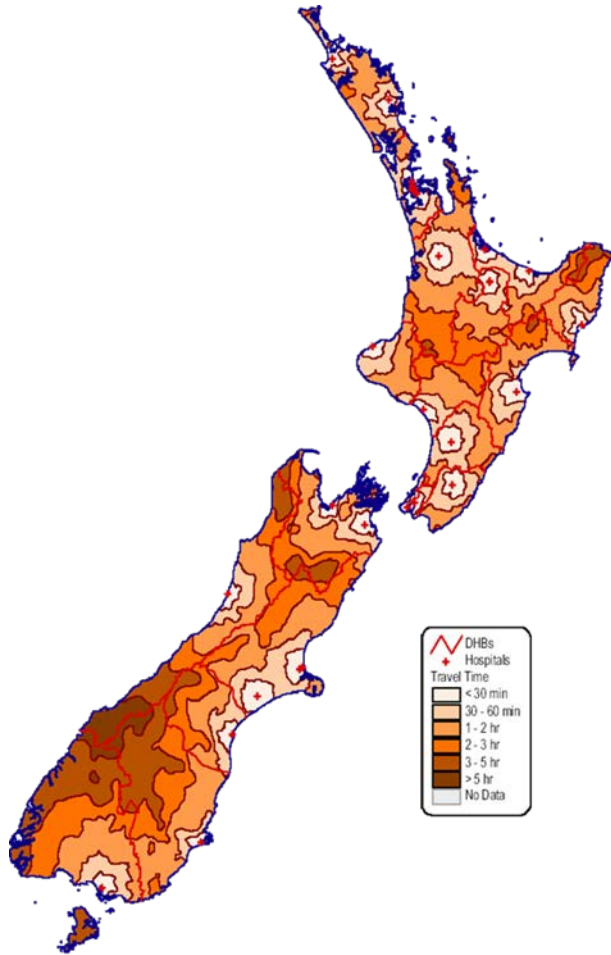
MSF - Belgium, 51 Staff, Type 2

ISAR, 31 Staff, Type 1
B-Fast, 70 Staff, Type 1
MSF - France, 14 Staff, Type 1
Italian Civil Protection, 30 Staff, Type 1

KEY

BLACK - Stand by
YELLOW - Final Destination, Under Deployment
GREEN - Operational on the Ground
RED - Leaving Deployment Area

NZ health priorities post impact



- Shelter
- Access to safe water and food
- Disease surveillance
- Secondary trauma and infections
- Long term conditions
- Psychosocial welfare
- Service reconfiguration
- Access to primary care
- National staffing and supply chain

Disaster Victim Identification

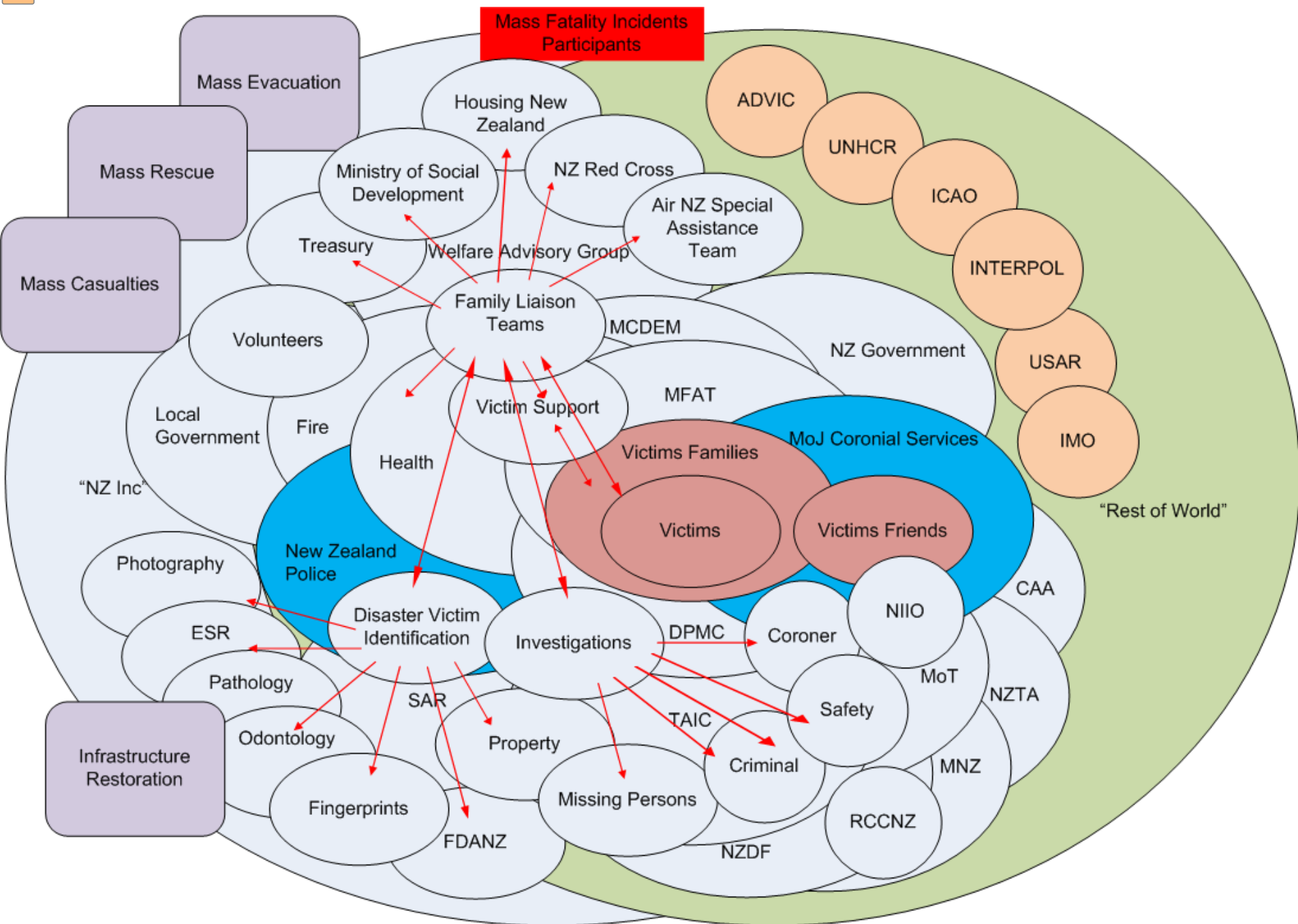


Inspector Geoff Logan

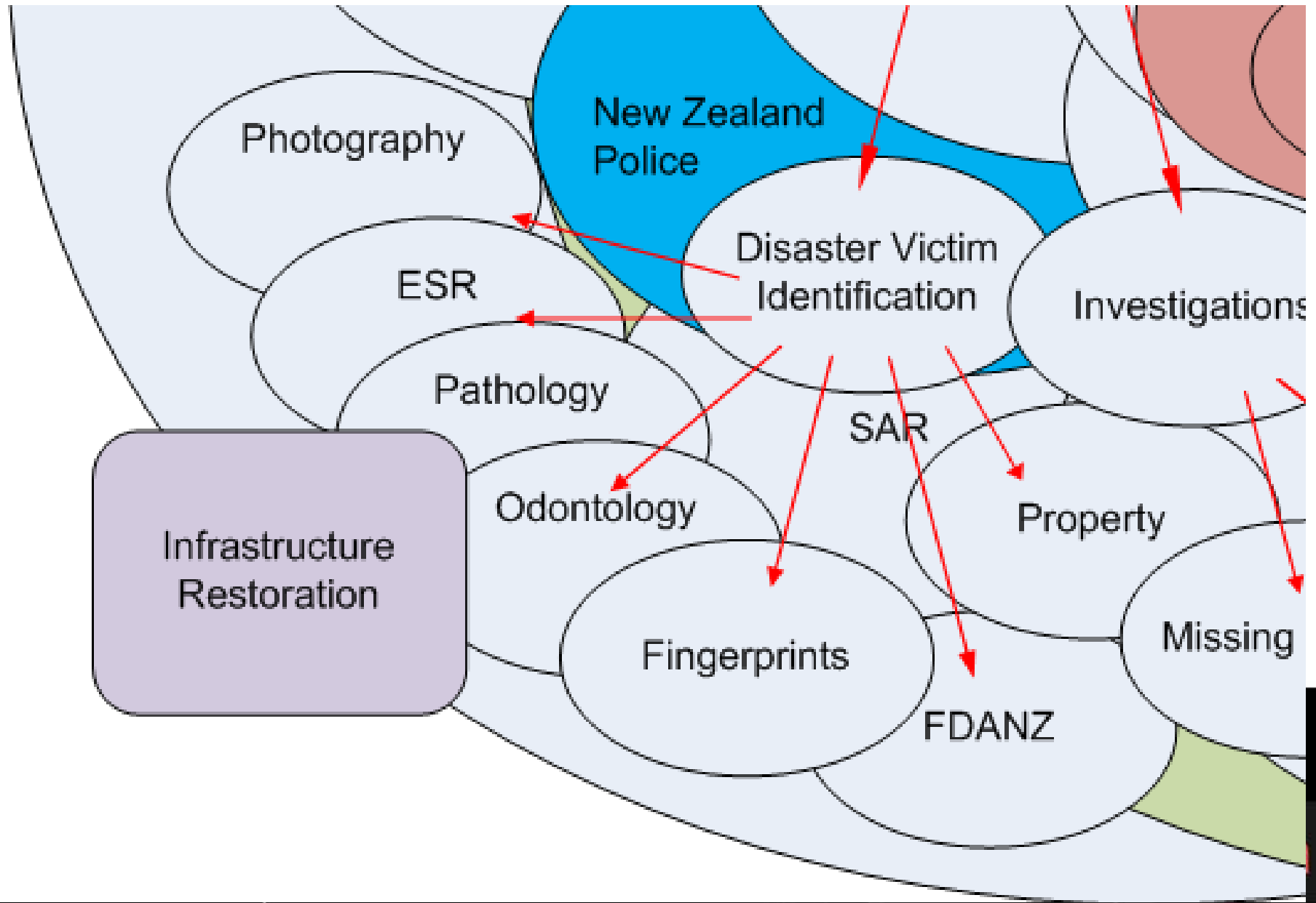
Phuket December 2004



garoa



The DVI “Space”



Mass Fatalities Framework

- Number and nature of the fatalities is greater than the local resource can manage
- Co-dependencies across Government with other agencies including MoJ, (including Coronial), Police, MOT, TAIC, MFAT, and DPMC

Principles Include

- Government responsibility
- Victim centric approach
- Victims include survivors, families, communities
- Deceased are treated with dignity from recovery, identification to repatriation
- Best endeavours will be made to ensure each mass disaster is treated with best practice



Coroners and Police

- Coroners have the responsibility to:
 - Identify deceased persons,
 - Identify the time, date, and place the death/s have occurred, and
 - Determine the manner, cause and circumstances surrounding the death.
- Police are empowered with the responsibility of establishing the identity of deceased person/s to the satisfaction of the Coroner.

Disaster Victim Identification

- Principles follow CIMS protocols and Police instructions.
- Police work closely with the Coroner.
- Overseas assistance is managed through MFAT.
- Police utilise the Plass Data System which matches information when the victim was alive (ante-mortem data) to information gained from the victim that has died (post-mortem data). Used in over 190 INTERPOL member countries. The software compares the data, then suggests plausible matches for subsequent manual examination and identification.

The DVI Process

- Phase I 'The Scene'
- Phase II 'The Mortuary'
- Phase III 'Ante Mortem Information Retrieval'
- Phase IV 'Reconciliation'
- Phase V 'Debriefing'

Limitations / Influences

- Level of fragmentation.
- Roles for external assistance and their capabilities.
- Coroners / Government's intent (immediate and long term public messaging).

New Zealand's ability to respond

- NZ Police have a national, deployable, DVI team of 20 persons
- NZ Police SAR squads in the 12 Police Districts train in DVI each year
- Police hold 3 caches of equipment (20-30 bodies, 2-3 days) for DVI
- Forensic photographers (trained and experienced in DVI, using modern imaging techniques and best practice)
- Fingerprint Officers trained and experienced in DVI

New Zealand's ability to respond (cont.)

- The Ministry of Justice and the Chief Coroner are responsible for coronial support, including ensuring that adequate facilities, resources and skills are available i.e. using a mix of temporary and fixed mortuaries as appropriate and contingency arrangements for supply of equipment
- Limited access to forensic pathologists or odontologists depending on event scale
- Certification of qualified experts (trained and exposed to DVI) is a constraint

International Support

- Forensic pathologists and odontologists must meet credentialing standard (Professional body's oversight / decision)
- Additional DVI trained staff from other policing jurisdictions (e.g. Thailand 30+ countries)
- With 5-7 “fly-ins” for every victims family, Family Welfare Centres and their management is crucial
- Volunteer agencies, and the efforts of Resources of Opportunity, must be coordinated and must be “safe”





International Assistance/VIPs/Assisting foreign diplomatic missions







Foreign VIPs and Guests of Government







076-354060
076-354055
076-354056
019108298-2777
012500024-7777
099279413-7777

SAMANTHA BANET (MEXICO)
LAST SEEN: KHAOLAK

Gender: F Date of Birth: 01/01/1990
Height: 1.60m Weight: 50kg
Hair: Brown Eyes: Brown
Skin: Fair

RUBY ROSE

Gender: F



Age: 18 Date of Birth: 01/01/1990
Height: 1.60m Weight: 50kg
Hair: Brown Eyes: Brown
Skin: Fair

Myet Aungmye

Gender: F Date of Birth: 01/01/1990
Height: 1.60m Weight: 50kg
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gettyimages®
PORNCHE KITTWONGSAKUL



Philippe (Philippe) (Philippe)

Gender: M Date of Birth: 01/01/1990
Height: 1.80m Weight: 80kg
Hair: Brown Eyes: Brown
Skin: Fair

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Media Coverage



Media coverage in a crisis



Coverage in Christchurch





Coverage in Christchurch

- Largest media coverage of a crisis in NZ's history
 - 1,259 local, national and international media were accredited. Most of them in the first week. Only 6 had their accreditation removed for bad behaviour
 - 177 public information staff - from local & central government and the private sector
 - The following were provided for media
 - Twice daily media conferences – 183 in all.
 - Bus tours in red zone to Cathedral, CTV Building, PGC Building
 - 400 media releases/advisories
 - 1,800 tweets
 - Opportunities to be embedded in SAR teams
 - Interviews arranged with key people - Mayor, Controller, Police, SAR, VIPs etc

Lessons





Lessons

- Media coverage impacts New Zealand's global reputation and instils confidence in the response and recovery
- *Building trust with the media is key – keep your promises*
 - Feed the machine – Media operates 24/7 – if you choose to say nothing then media will look for other ways to get content
 - Be available – provide media with information or advise when it can be expected
 - Have a good accreditation process
 - Dedicated venue from where to file
 - Wireless capability
 - Refreshments



NZ's ability to respond





NZ's ability to respond

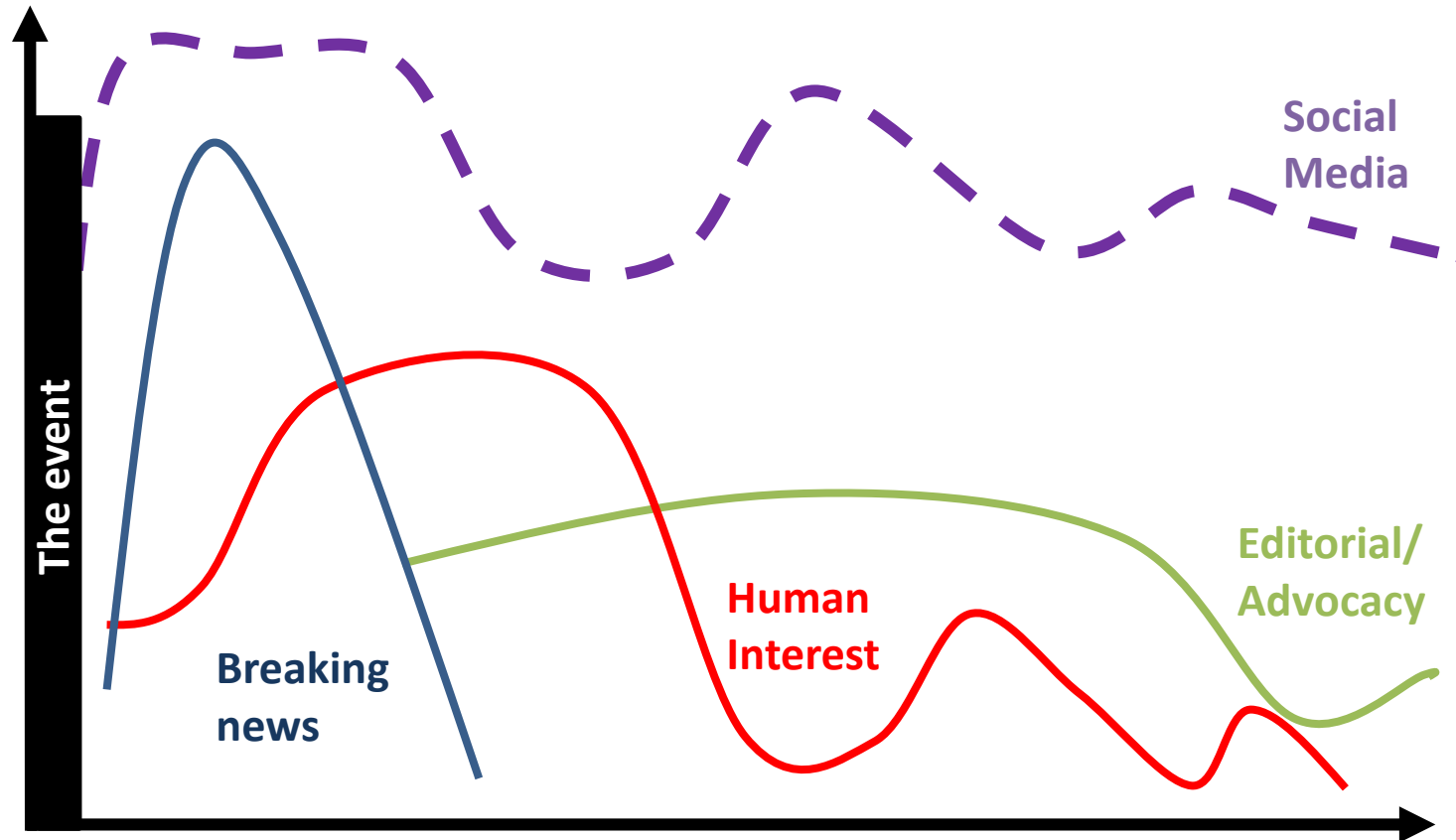
- The Canterbury earthquakes produced a group of communications people experienced in a managing communications/public information in a crisis - many of whom then offered to make themselves available for future crises
- The initial response to the Rena event indicated that there were problems in activating people with sufficient experience
 - The current status of those people (availability, location and experience) is unclear. Who owns the list?
 - The list needs to be kept up to date
 - People on the list need to train regularly
 - There is no apparent need for international support
 - Is there a media accreditation process already established for the next major event?



Just what do we mean by media?



The stages and focus of media coverage in a crisis



Social media is a growing channel for news consumption (41% via FB).

Smart phones are the growing platform for news consumption and capture.

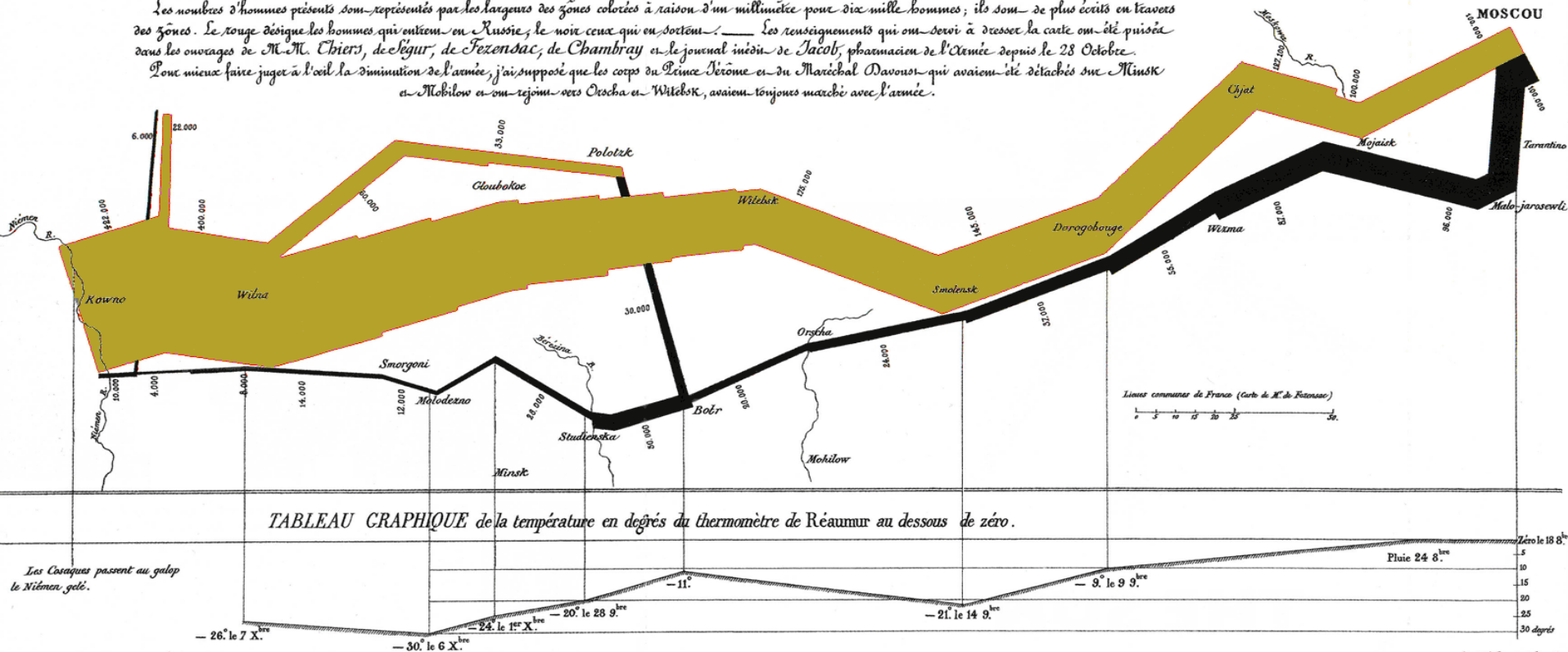
Print media is in decline while TV remains a trusted source.

Monitoring Analysing all media is critical

Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Dressée par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les largeurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en travers des zones. Le rouge désigne les hommes qui entrent en Russie, le noir ceux qui en sortent. Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Thiers, de Ségur, de Fozensac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 23 Octobre. Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Prince Jérôme et du Maréchal Davoust qui avaient été détachés sur Minsk et Mohilow et qui rejoignent vers Orscha et Witebsk, avaient toujours marché avec l'armée.



Autog. par Requin, 8. Par. 5^e Maria 5^e 0^{me} à Paris.

Imp. Lith. Requin et Derodet.



~~Monitoring~~ Analysing all media is critical

- Look for patterns: Don't just collate what is reported
 - Look for the patterns in the coverage to determine what messages are required and to anticipate adverse impacts on the management of the response
 - Ensure that the media team have a dedicated role for media analysis





**NATIONAL
EXERCISE
PROGRAMME**
INTERAGENCY
CAPABILITY BUILDING



exercise **tangaroa**



Science & Research

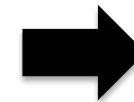
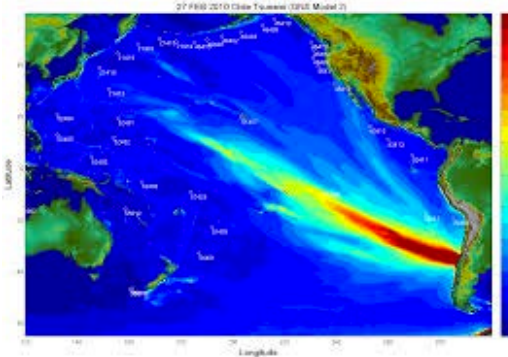




Science Response

Tsunami Experts Panel

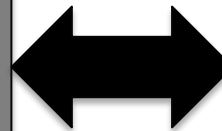
During-event



Post-event

Science Surveys

- Tsunami observations
- Tsunami damage to buildings and lifelines
- Social/behavioral aspects



Science Advice

- Tsunami heights around New Zealand (measured, observed)
- Imagery (aerial, satellite)
- Mapping and describing impacts
- Aftershock probabilities
- Potential for 'aftershock' tsunami



Science Surveys

Tsunami Observations

- Rapid surveying along coast in inundation zone
- 1-7 days after the event
- Foot surveys, drones



Damage Surveys

- Building/lifeline damage
- Days to weeks following event
- Foot surveys, drones, interviews



Social science surveys

- Casualties
- Behavioral aspects/survivor stories
- Weeks to months following event
- Interviews, surveys



UNESCO-IOC International Tsunami Information Center (ITIC) Guidelines

Host-Country Coordination Committee (HCCC)

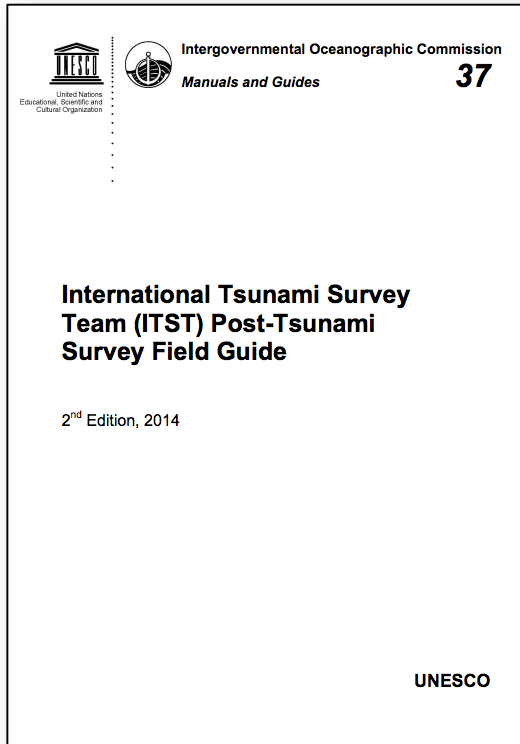
- IOC-UNESCO rep
- Government ministry
- CDEM rep
- Science agency rep

International Tsunami Survey Teams (ITST)

- Objectives
- Team composition
- Fields of interest
- Geographic areas
- Timing
- Approvals (ethics), cultural awareness

Survey Terms of Reference

- Field of interest (social, engineering etc)
- Media & communication
- Exclusion areas (geographic, surveys)
- Cultural/ethics considerations
- H&S....



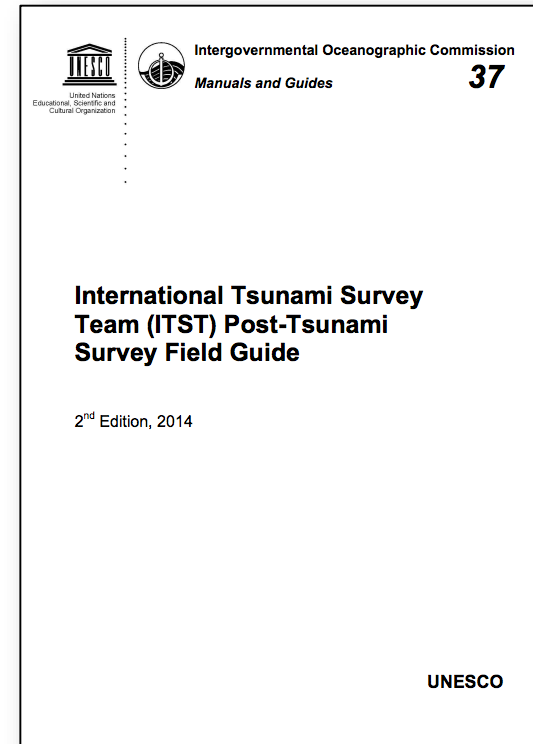
<http://goo.gl/kEA3zc>

UNESCO-IOC International Tsunami Information Center (ITIC) Guidelines

- ✓ *Entry briefing from HCCC to ITST*
 - ✓ *ToR, Expectations and Ground Rules*

- ✓ *Daily updates from ITST to HCCC*
 - ✓ *Situation Reports*
 - ✓ *Logistics*
 - ✓ *Coordination of other teams*

- ✓ *Exit briefing between ITST to HCCC*
 - ✓ *Knowledge transfer*



<http://goo.gl/kEA3zc>

Previous Tsunami Events



2009 Samoa
60 scientists
1 team



2010 Chile
70 scientists
25 teams



2011 Japan
> 100 scientist
30+ teams
Request for 1 month
delay due to
humanitarian response

The good the bad and the.....



Challenges

- Need for lead agency to set ground rules
 - Pre event policy? Especially around social science and cowboys/girls
- Coordination of survey teams
- Clear pathway for science information to CCC through CIMS system
- Mixed media messages from scientists
- Science teams may be first on the scene in some areas
- How to including science in medium term strategic issues



Economic Impacts



What do we know about the economic effects of the Christchurch earthquakes?

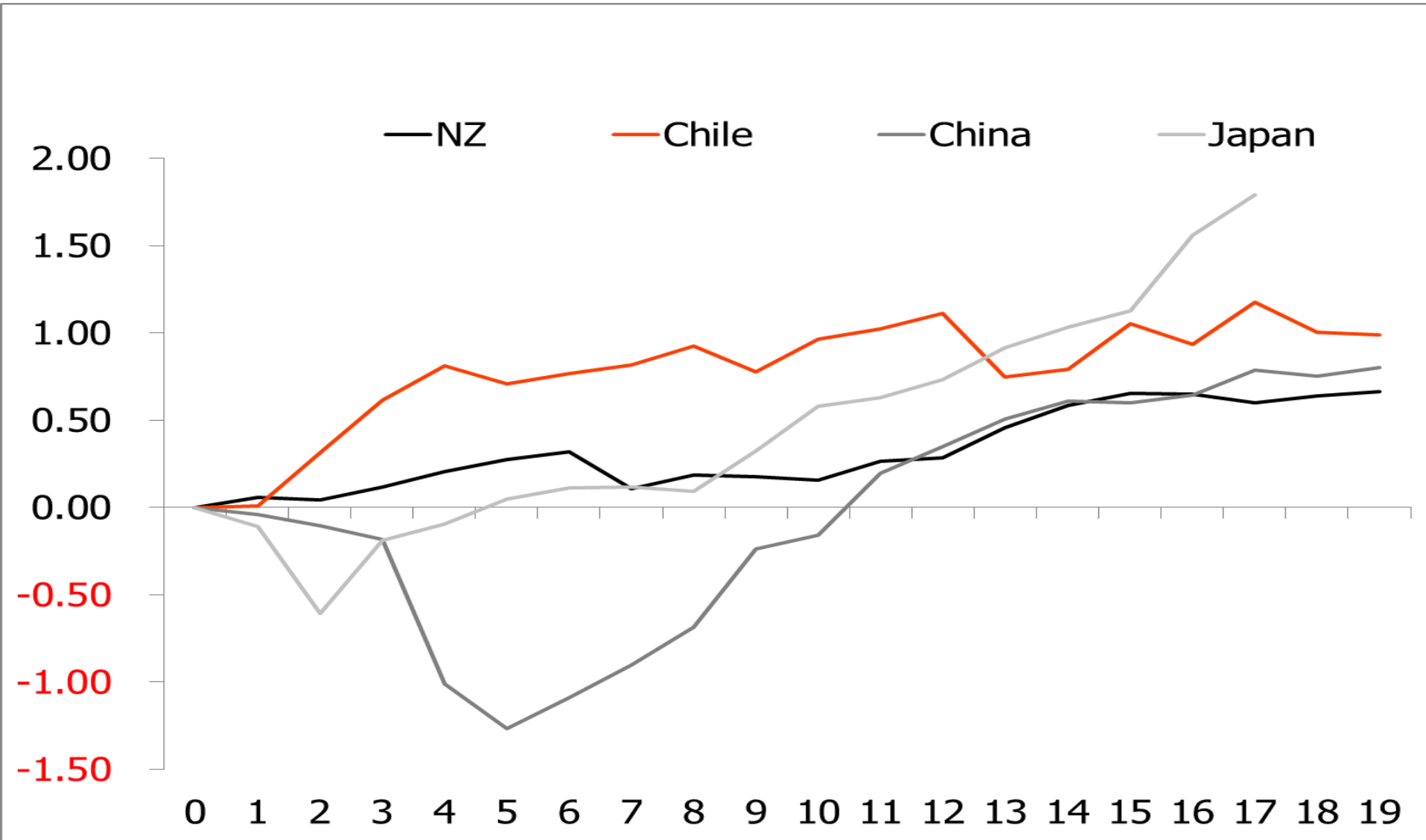
- The Christchurch earthquakes had negligible impact on *national* economic activity
- Economic activity in *Canterbury* returned to pre-earthquake levels in less than a year
- Canterbury very diversified so could absorb shocks
- Christchurch tourism & education services sectors particularly affected
- Need to rethink 'red zoning'

What do we know about the economic effects of natural disasters?

- Loss effects – direct impact is often localised and minimal
- Macroeconomic effects – indirect effects from macro-dynamics triggered by events
- Capital market effects – dynamics depended on % of Insurance coverage
- GDP/Output losses poor proxy for welfare losses/living standards

Post event recoveries compared

NZ (Chch 2010/11) Chile (2010 E & T) Japan (2011 Tsunami) China (Sichuan earthquake 2008)



What might this mean for the economic effects of tsunami?

It depends on source/time of day/readiness BUT

- NZIER/GNS modelling *2500 – 20,000* fatalities & *\$9b to \$45b* in property loss
- Loss effects – Property loss (mainly housing stock) combined with loss of life (disrupt services industries)
- Macroeconomic effects – indirect effects from macro-dynamics e.g. population shifts
- Capital market effects – potential failures of life insurers, access to re-insurance?
- Concentrated local effects – ‘zombie’ towns?



Group discussion & report back

1. Choose two (2) topics that interest you
2. Move to the first topic facilitator
3. Group discussion
4. Move to second topic facilitator
5. Group discussion
6. Report back





Group discussion questions

1. What issues would a New Zealand-wide tsunami impact generate for this topic?
2. What preparations are already in place?
3. What are the potential gaps/challenges New Zealand would face in this situation?
4. Does anyone have any experiences or examples of where this has been well managed?
5. Who would we call on internationally for assistance?
6. What do you think the next steps are for your organisation in this area?



Summary and close



Questions / feedback

Your local REMA

or

Jo Guard or Sara Mitchell (nee Leighton)

Exercise Coordinators

MCDEM

CDEMexercises@dpmc.govt.nz

04 817 8555