



Improving Organisational Resilience

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The Research Context



In New Zealand we have not had a major natural disaster in living memory

....but we live in a very hazard prone country...

and we are very isolated....

"...In the US, they were an island of devastation in a sea of resources; in New Zealand we would be just an island of devastation..."

The Research Context



- *Organisations manage, maintain and operate our critical infrastructure.*
- *Contribute to both economy & community.*
- *September 11th -Business disruption costs far exceeded the sum of all property losses.*

*To **understand** the **impact** of hazard events, we need to be able to **evaluate** how **key organisations** are going to **perform** during and after these events.*

Resilient Organisations



6 yr FRST research programme involving:

- University of Canterbury,
- University of Auckland,
- Kestrel Group.

The programme has 3 strands

1. Organisational planning for hazard events
2. Prioritisation and deployment of resources
3. Legal and contractual frameworks

1) Organisational Planning



▪ **Goal:** To understand and improve the resilience of NZ organisations, and to facilitate integrated resilience planning between organisations.

▪ Research Team:

- Erica Dalziell
- David Brunson
- John Vargo

2) Prioritisation & Deployment



▪ **Goal:** Develop a decision support tool that can be used following a hazard event for prioritising physical response and recovery of networked infrastructure, such as the road network.

▪ Research team:

- Andre Dantas
- Erica Dalziell
- Alan Nicholson

3) Legal & Contractual Frameworks



- **Goal:** To establish a comprehensive procurement framework and programme management plan for reconstruction in the event of a national disaster.

- **Research team:**

- Suzanne Wilkinson
- Jason Le Masurier

Our Proposition...



Organisations are complex systems, characterised by numerous interdependent relationships both *within* and *between* organisations.

Systems concepts provide a framework for evaluating the potential performance of an organisation under stress.

Organisations under Stress




- In times of disaster and major disruption, different organisations are required to work **together** to develop solutions to novel problems.
- Organisations do not operate in a vacuum. The resilience or otherwise of other organisations impacts on the resilience of your organisation!
- This requires management of resilience **ACROSS organisational boundaries**

Exercising to Build a More Resilient Organisation:
A New Zealand Example



New Zealand foot and mouth disease simulation

Scope of Presentation



- Context: Foot & Mouth Disease in NZ
- Organisational Challenges Pre-exercise
- Exercise Planning process
- Building Resilient Organisations



This presentation uses the example of a major whole-of-government exercise in New Zealand to illustrate how exercises can be used to:

- (i) Highlight organisational vulnerability; and
- (ii) Provide a platform for improving organisational resilience

Context: Foot & Mouth Disease



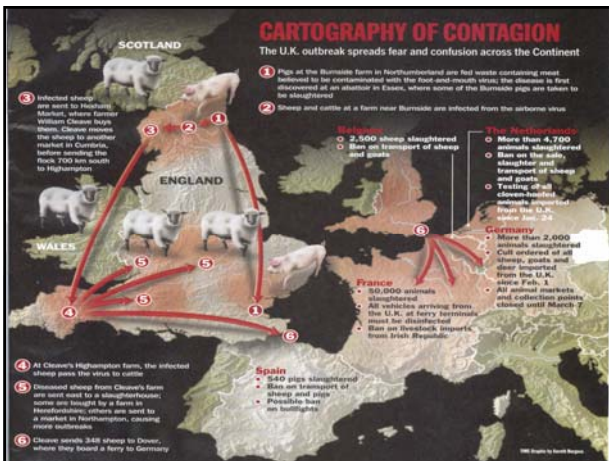
- The NZ economy is heavily dependent upon meat & dairy exports
- NZ has never had an outbreak of Foot and Mouth Disease
- NZ invests significantly in biosecurity to prevent an FMD outbreak
- Modelling indicates that an FMD outbreak would cost NZ \$6 billion in Year 1 (5% of GDP) and NZ\$10 billion (8% of GDP) in Year 2

FMD - The Disease



- Disease in Cattle
 - blisters on tongue, feet and teats
 - slobbering, smacking lips
 - tender and sore feet
 - shivering
 - raised temperature
 - reduced milk production





Foot and Mouth Disease Response in NZ



- Ministry of Agriculture & Forestry is the Lead Agency
 - Exotic Disease Response Centre (overseeing field response in the affected region(s))
 - National response (policy aspect & linkage with central govt)
- Department of Prime Minister & Cabinet is responsible for co-ordinating Whole of Government response

Organisational Challenges Pre-exercise



- MAF operates on a business unit model
 - Smaller units with varying levels of autonomy
 - Recently restructured further
 - No clear Incident Control mechanism above the units, which have potentially conflicting response objectives
- Comprehensive response procedures but written from a technical perspective and not updated for new structures

Is this Situation Unique?



- No!

Exercise Preparation Challenges



- Align the response management structures and procedures with the Business As Usual structures
- Get senior management commitment
 - To enable resource commitment for essential preparatory tasks & full participation
 - To resolve Incident Management issues
 - To fully play their own key response role

Sound familiar??



- Yes!

Exercise Programme:

1. Preparation



- Familiarisation exercise to make those involved aware of current shortcomings (Month 2)
- Specifically managed programme to address previous 'lessons' (Month 5)
- Further 'walkthrough' exercise to acknowledge progress but emphasise what still needed to be done (Month 10)
- Update response procedures to align with current structures (Months 11 to 13)

Exercise Programme:

2. Delivery



- Exercise development (Months 8 to 13)
- Exercise delivery (Month 14)
- Analysis & reporting (Months 15 & 16)

- Capability building takes time!

Exercise Taurus:

The Scope



- First stage field exercise in March (one week)
- Second stage national co-ordination exercise (two days)
 - Day 1 – first day that outbreak is confirmed (one positive test)
 - Day 2 – dealing with issues subsequent to the initial notifications and containment response

Exercise Taurus:

The Players



- Stage One participants
 - >100 people from MAF & other agencies
 - 5 international observers
- Stage Two participants
 - >50 people from MAF
 - >25 people from 15 government & other agencies
 - 5 international observers

Exercise Taurus:

The Postscript



- 3 weeks after Exercise Taurus, a suspected outbreak situation DID occur
 - A major response was mobilised
 - Was found to be a hoax very early on
- But all the participants were very grateful for the exercise 'practice'!!



Back to the Session Theme:

Building Resilient Organisations



**Exercise Taurus:
Organisational Issues to Emerge**



- The potential disconnect between govt agencies/ MAF national office/ MAF field response was highlighted
- The importance of working with other government agencies appears to lack emphasis in the procedures
- Mechanisms for engaging with local and regional government also need clarifying and communicating

**Exercise Taurus:
Organisational Issues to Emerge**



- Internal communications not always well handled
- Some teams/ units staffed for policy development struggled to adapt to the dynamics of being in 'response mode'
 - The need to reach out for information, rather than waiting for it to come in
 - Organising and resourcing a second shift

Wider Implications for Building Resilient Organisations (1)



- Organisations need to establish an effective work programme to develop & maintain response capability
 - familiarity with roles and procedures
 - policies & communication templates in place
 - induction for new personnel
- Organisations must identify dedicated resources to lead this programme

Wider Implications for Building Resilient Organisations (2)



- Organisations must build external support networks to be able to immediately involve
 - other organisations for *direct operational assistance*
 - other organisations for *resource support*
 - experienced Emergency Management professionals

**Building Resilient Organisations:
Question for You**



- Training and exercising for *low probability, high impact* events
 - Especially for organisations with little exposure to regular emergency events
- What is an appropriate *level* of training?
- What is an appropriate *form* of training?

**Finding Solutions for Real
Issues in Real Organisations**



10 in-depth Case Studies

- Developing a framework for evaluating resilience
- Variety of organisational types and sizes

Consequence Scenarios

- Regional event
- Localised event
- Distal event
- Societal event

Resilience Management



...bridging the interface between...

**Risk Management and Business Continuity
Planning**

Resilience = fn (Vulnerability, Adaptive Capacity)

Vulnerability

- The likelihood of individual link or node failure
- Criticality of individual link or node performance

Adaptive Capacity

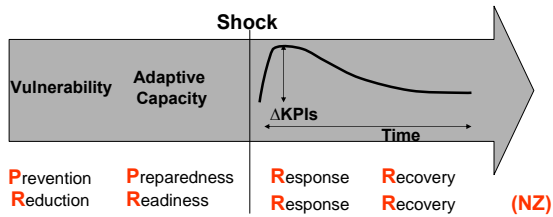
- Capacity to apply existing responses to problems
- Capacity to generate and apply innovative responses to new problems

Vulnerability Matrix



		Preparedness			
		High	Moderate	Limited	None
Criticality	Low				
	Moderate				
	High				
	Very High				

Metrics for Resilience



Resilient Organisations



KEY OUTCOMES:

- **Methodology** for Resilience Mgmt
- **Metrics** for quantifying Resilience
- **Best Practice** for improving Resilience
- And creating the **Business Case** for **Resilience!**



Thank You,

We would love to hear your questions & ideas!
