

Cambridge Judge Business School

Centre for Risk Studies 7th Risk Summit Research Showcase

Recovery and Resilience after Catastrophes

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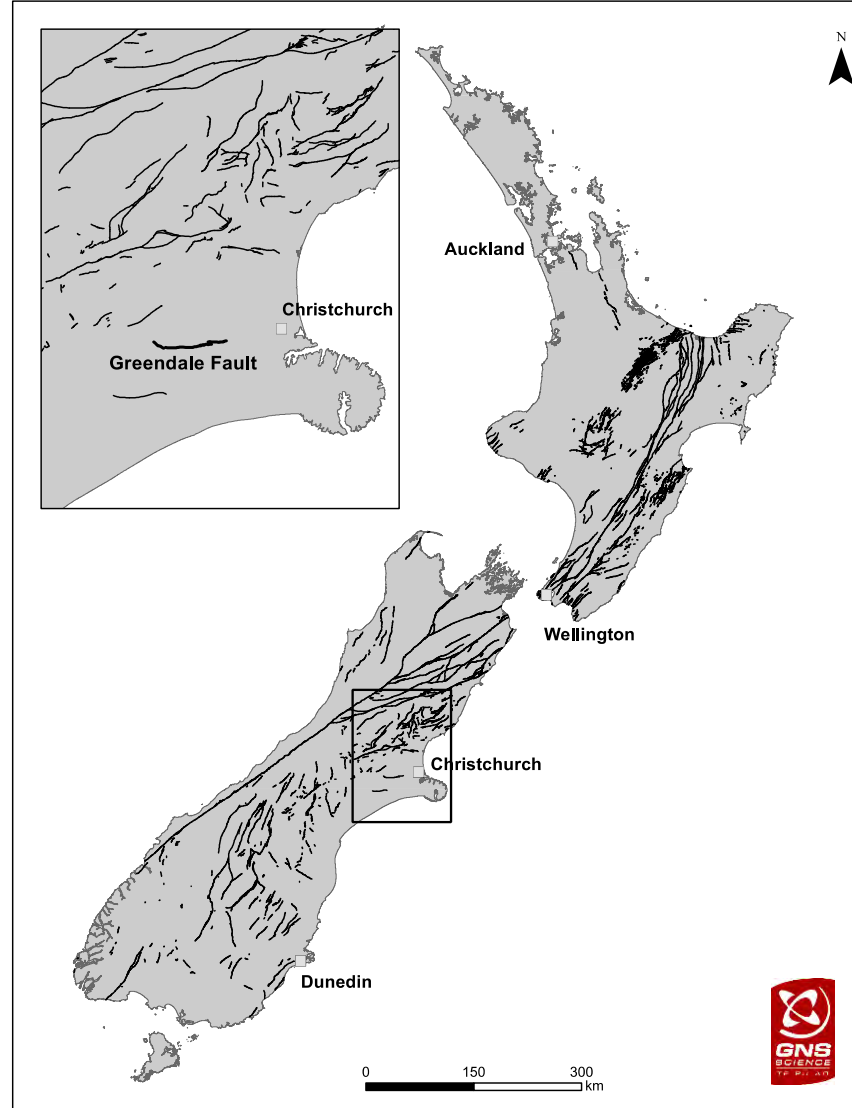
Cambridge, UK

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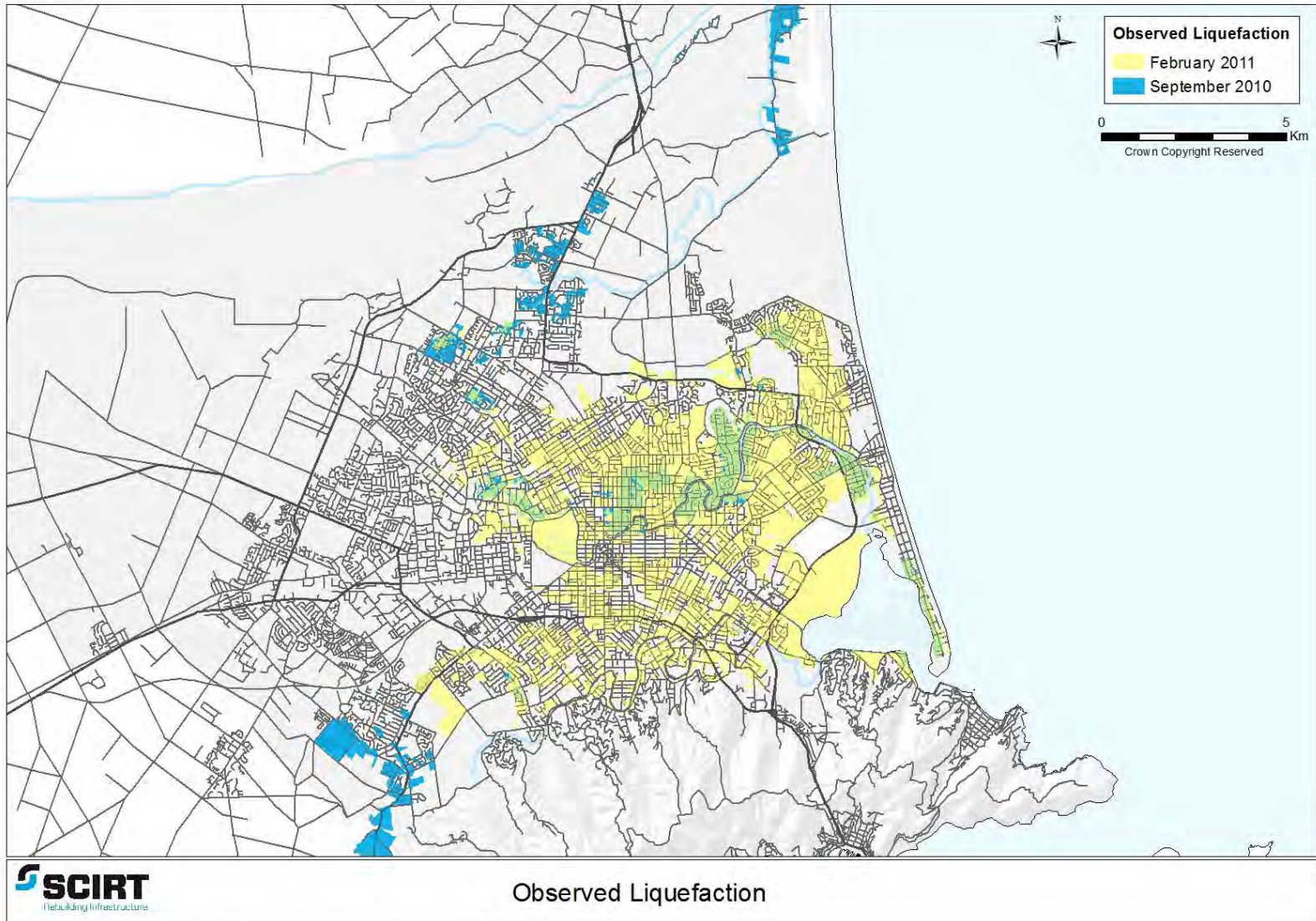


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New Zealand: An Earthquake-Prone Country



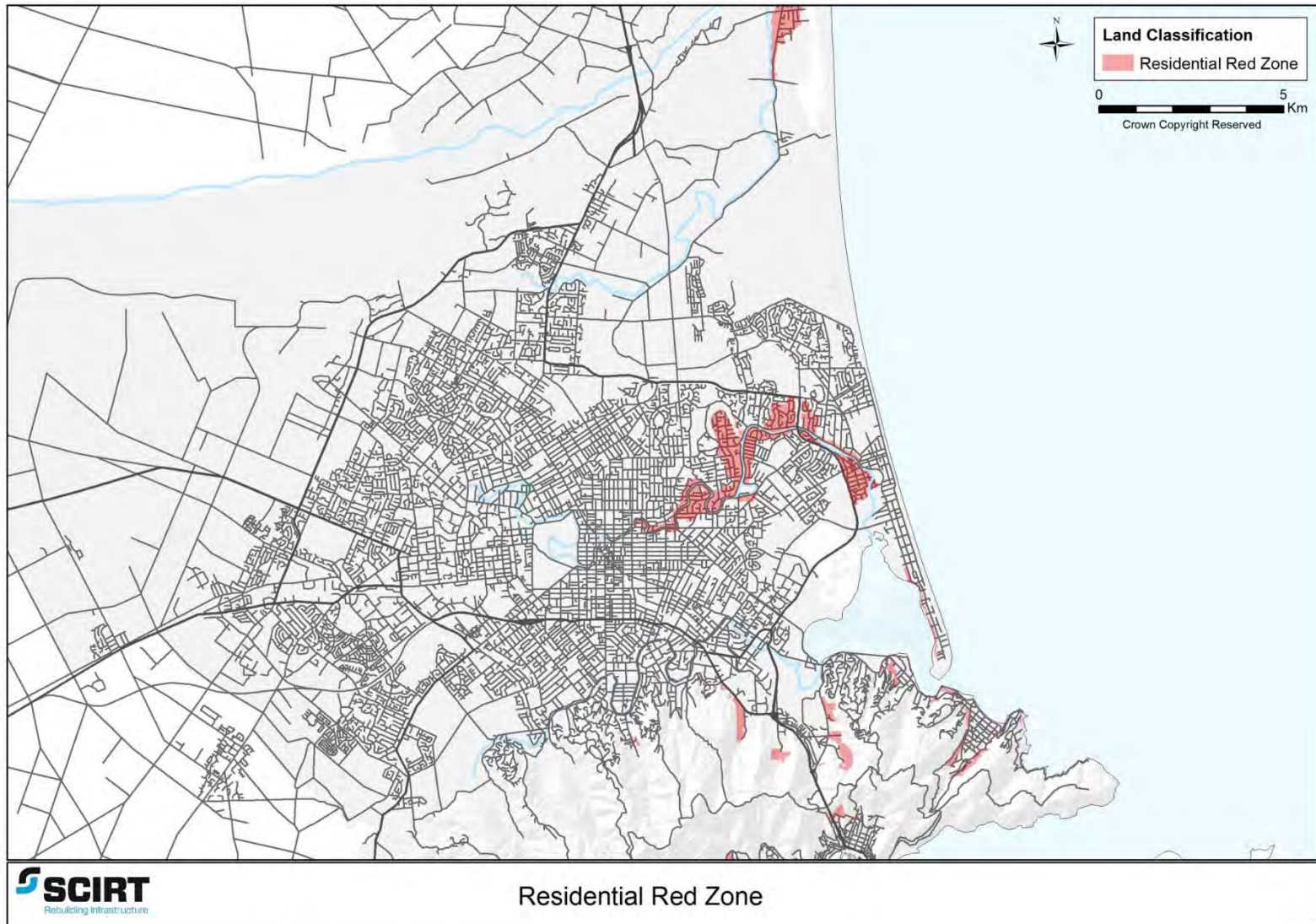
Severity of Damage Following Christchurch EQs



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Severity of damage following Christchurch EQs



Document Path: G:\GIS\Admin\Action Requests\TaskData\1813\1813_Map7_RedZone_A4.mxd



View of Christchurch from the Port Hills



A focus on infrastructure systems

Figure 1

Relationships between public sector entities, private companies, Ngāi Tahu, and Canterbury earthquake recovery tasks

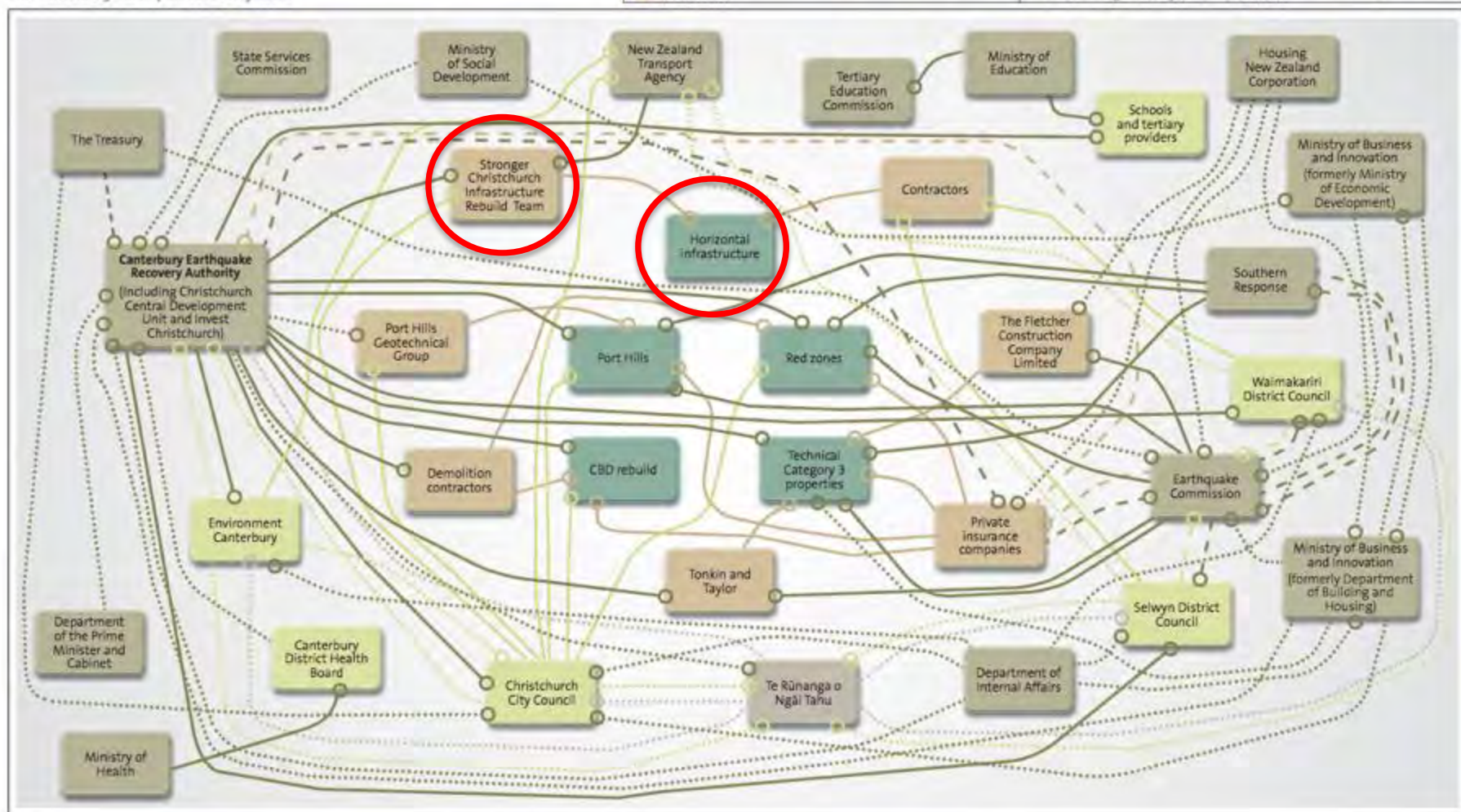


Figure from a 2012 parliamentary paper: “Roles, responsibilities and funding of public entities after the Canterbury earthquakes”, Office of the Auditor General, New Zealand

Opportunity to Build Resilience?

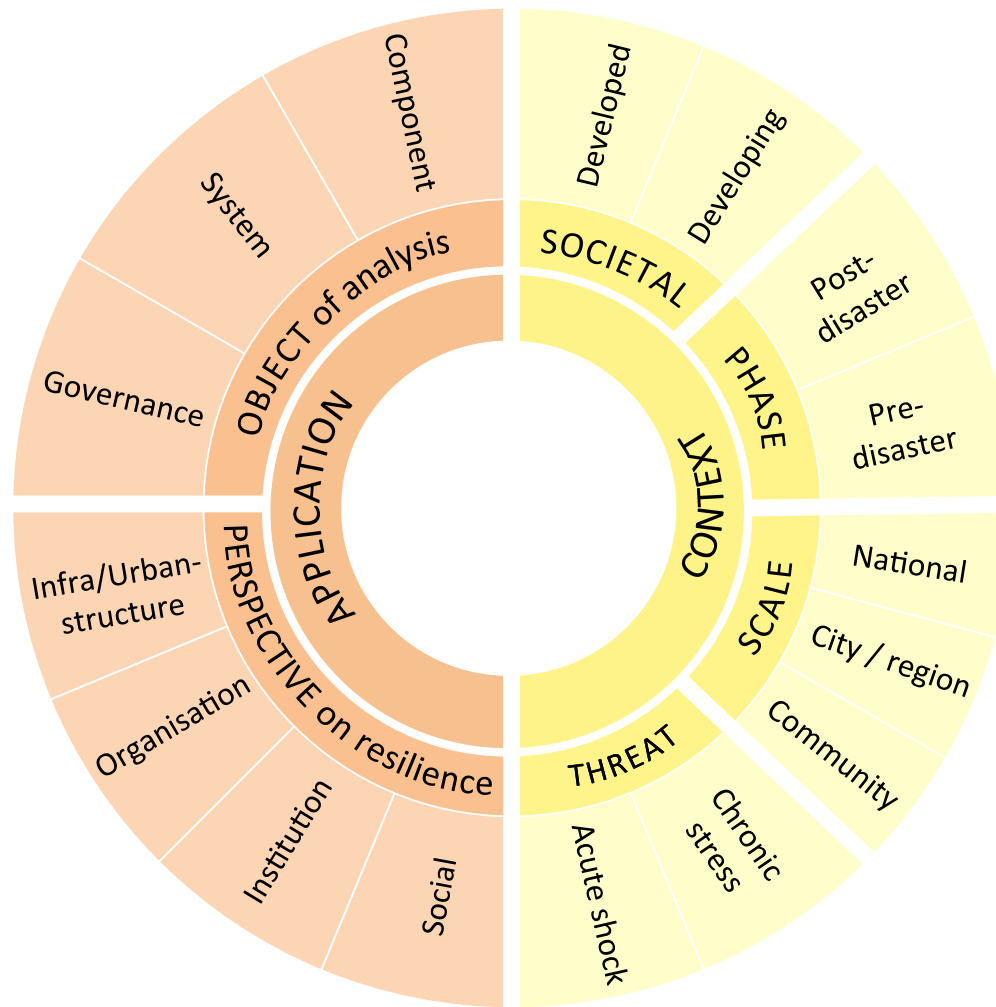


Photo credit: SCIRT

What factors influence the opportunity to enhance the resilience of civil infrastructure during reconstruction?

How do these factors affect the outcome?

Resilience of What to What?



Resilience of What to What?





Longitudinal Study of Recovery


2011


2012

Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar

 04 Sep-10
earthquake
magnitude 7.1

 22 Feb-11
earthquake
magnitude 6.3

 13 Jun-11
earthquakes
magnitude 5.9 & 6.4


 23 Dec-11
earthquake
magnitude 6.2


2013


2014

Aug Sep Oct Jun Jul Aug Sep

Mar Apr May Jun Jul Aug Sep

 15 Aug-12
flood event
99 mm rainfall

 18 & 23 Jun-13
flood event
107/91 mm rainfall

 4-5 Mar, 19 Apr, 30 Apr
flood events
161mm, 79mm, 85 mm rainfall

Longitudinal Study of Recovery

Legend

Special legislative measures ^A

Cost estimates & funding policy ^B

Reconstruction organisational arrangements ^C

Developments in approach to land drainage ^D

Planning & design developments ^E

Developments in pressure wastewater ^F

Key input ^G

Process link (all colours): →

Phase description: →

Supporting commentary

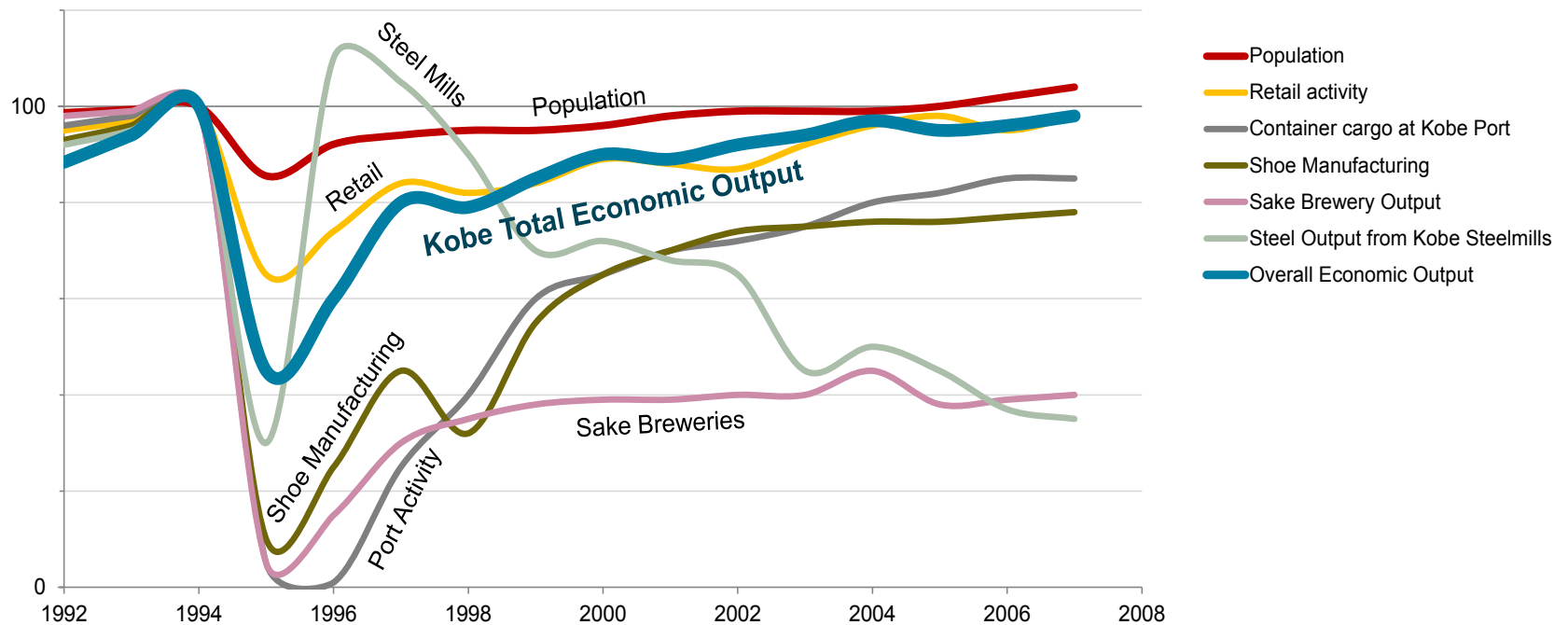
[LINK TO PDF FILE – Illustrative timeline of developments](#)

Key Research Findings

- **Funding mechanisms** proved to be a crucial issue.
- **organisational arrangements** both facilitated and inhibited opportunities for enhancing resilience.
- An **iterative approach to infrastructure planning and design** is a useful strategy for managing reconstruction.
- **Community interest** in the reconstruction influences outcomes. Making decisions on the basis of urgency may not lead to community acceptance.

Next Steps with the Centre for Risk Studies

- Case studies of recovery – mapping the recovery or “resilience” profile.



Example for Impact of the 1995 earthquake on the Economy of Kobe, Japan

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