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Accounting for society’s influence on future disaster risk and how to develop proactive risk management strategies through integrated dynamic risk assessments

RAF 2019

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Graeme Riddell, Hedwig van Delden, Roel Vanhout, James Daniell, Sofanit Araya, Aaron Zecchin, Graeme Dandy, Jeff Newman
Two driving principles
Prevention is better than cure

“Better to build a fence at the top of a cliff, than park an ambulance at the bottom”

Helen Clark 2015 Sendai
Tomorrow’s risk is being built today. We must therefore move away from risk assessments that show risk at a single point in the present and move instead towards risk assessments that can guide decision makers towards a resilient future.

Global Facility for Disaster Reduction and Recovery (2016)
Future RISK
Things we generally can control

- Land use planning
- Land management
- Building codes
- Structural measures
- Community education
Things we generally **cannot** control

- Climate change
- Population growth
- Global economy
- Technological disruption

Future RISK

Things we generally **can** control

- Land use planning
- Land management
- Building codes
- Structural measures
- Community education
Things we generally **cannot** control:

- Climate change
- Population growth
- Global economy
- Technological disruption

Things we generally **can** control:

- Land use planning
- Land management
- Building codes
- Structural measures
- Community education

**Future RISK**

**How do we quantify impacts?**

**How do we obtain evidence/data to support decision-making?**
Things we generally **cannot** control

- Climate change
- Population growth
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Things we generally **can** control

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**Unified Natural Hazard Risk Mitigation Exploratory Decision support system**

** HOW DO WE QUANTIFY IMPACTS? **

** HOW DO WE OBTAIN **EVIDENCE / DATA** TO SUPPORT DECISION-MAKING? **
Things we generally cannot control

- Climate change
- Population growth
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Things we generally can control

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HOW DO WE QUANTIFY IMPACTS?

HOW DO WE OBTAIN EVIDENCE / DATA TO SUPPORT DECISION-MAKING?
We can assess how risk will change and what risk reduction portfolios are most effective in different plausible future worlds using a “policy wind tunnel”
EXPOSURE

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VULNERABILITY

HAZARD

Damage

Inundation

Inundation
End user training:
• 2017

Current Status:
• DEW Fire
• Gawler River Floodplain Management Authority Study (NDRP)
• State Scenario Exercise (NDRP)
End user training:

- 2019 (Fast Track Funding)

Current Status:

- Operationalisation of UNHaRMED (Internal Working Group)
End user training:

• 2019

Current Status:

• Operationalisation of UNHaRMED (Prepared Communities Fund)
End user training:

- Upcoming (July 2019)

Current Status:

- Risk mapping for MFB (MFB)
Queensland:

• Predictive Investment Modelling System (QFES)

Federal:

• National Resilience Taskforce (Home Affairs)

• Bureau of Meteorology – Heatwave Impact (Physical Environmental Analysis Network)
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A tool for pro-active disaster risk assessment and reduction planning

• Aims:
  • Improve thinking about risk into the future;
  • Better manage and minimise risk;
  • Position organisations to best achieve this and lobby others.
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A tool for pro-active disaster risk assessment and reduction planning

- **Aims:**
  - Improve thinking about risk into the future;
  - Better manage and minimise risk;
  - Position organisations to best achieve this and lobby others.

- **Considers:**
  - Spatial variability in risk
  - Long-term dynamics and uncertainties of hazard, exposure and vulnerabilities
  - A range of risk-reduction options and their effectiveness
UNHaRMED
A tool for pro-active disaster risk assessment and reduction planning

Thank you

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