



ECONOMICS AND DECISION MAKING CLUSTER

Risk Ownership

Non-Market Valuation of Benefits and Costs

Mitigation Planning into the Future

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OUTLINE

RISK OWNERSHIP FRAMEWORK

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NON MARKET ECONOMIC VALUES

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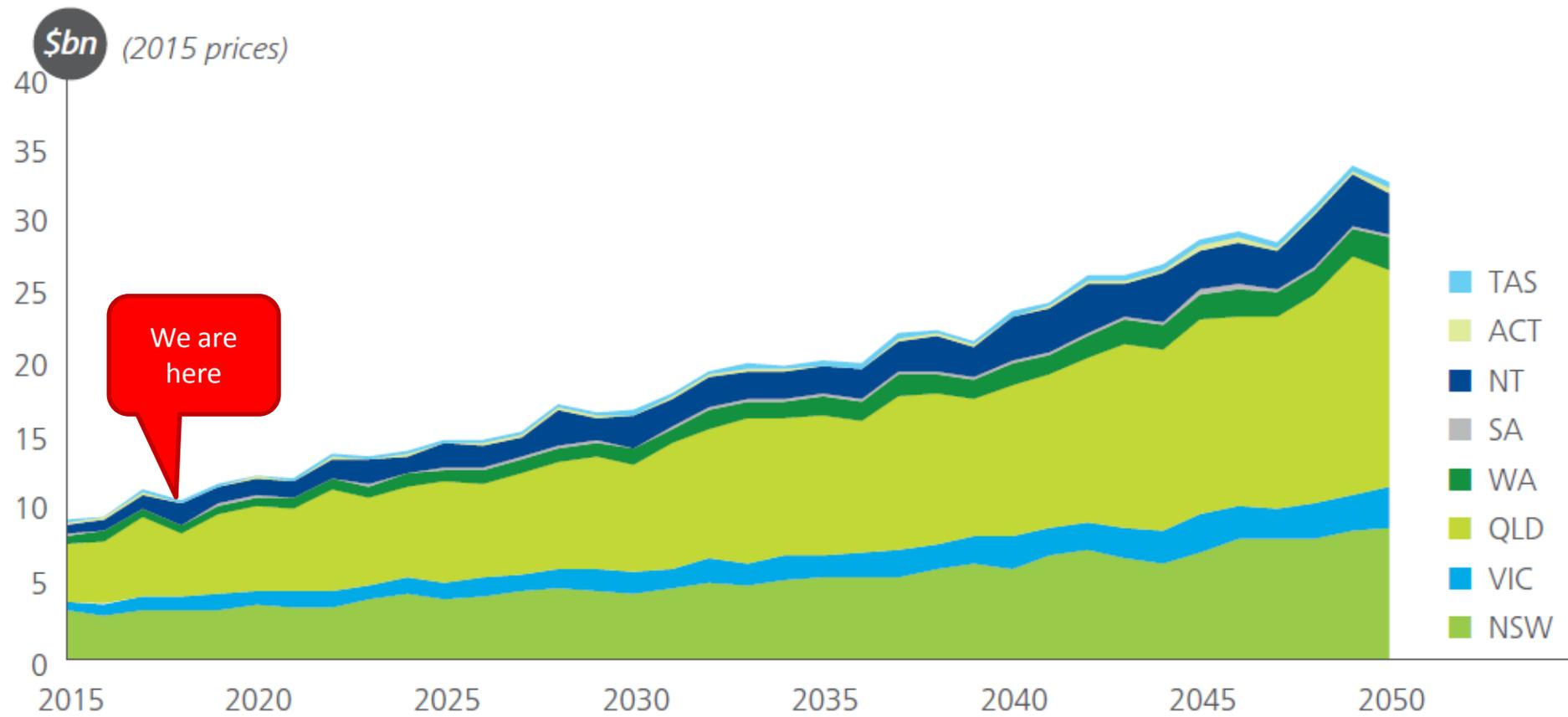
BNHCRC CALL FOR RESEARCH PROPOSALS (2013)

Problem:

There is a lack of decision support tools, processes and models across hazards, jurisdictions and tiers of government to effectively inform decisions regarding the allocation of resources. The lack of these tools directly affects determinations about where to invest scarce resources to have the greatest impact on reducing risk and improving resilience.

PURPOSE OF THIS CLUSTER

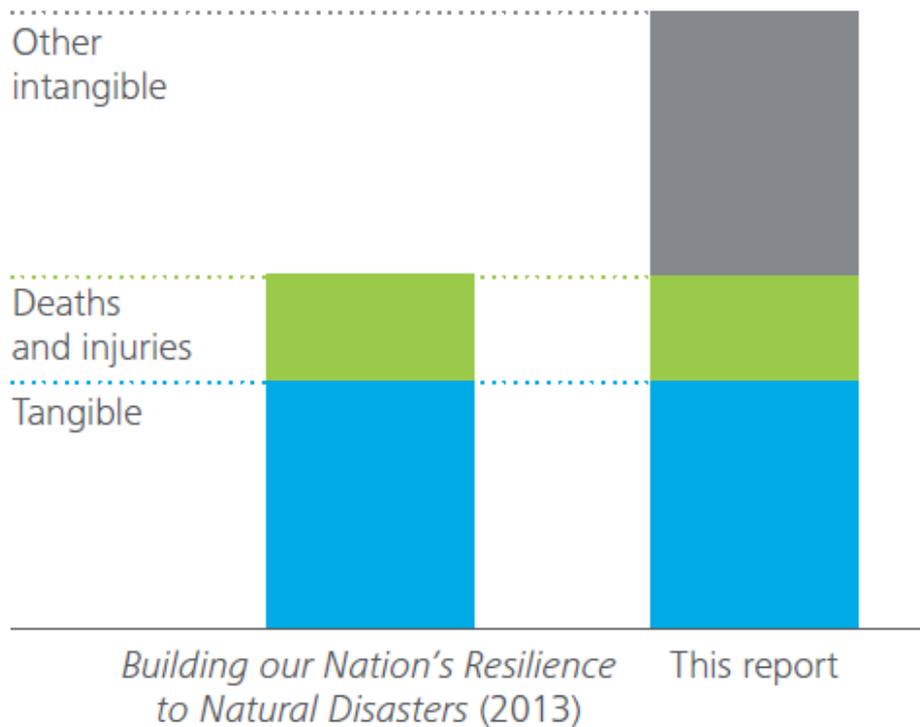
- 1) Understand the economic and policy environment within which decisions are made,
- 2) Allow risk-reduction proposals to be presented in a more compelling manner
- 3) Assist building a compelling case to improve the likelihood of risk treatments being resourced and implemented
- 4) Empower Emergency Management Practitioners to Prioritise Mitigation



Source: Deloitte Access Economics analysis

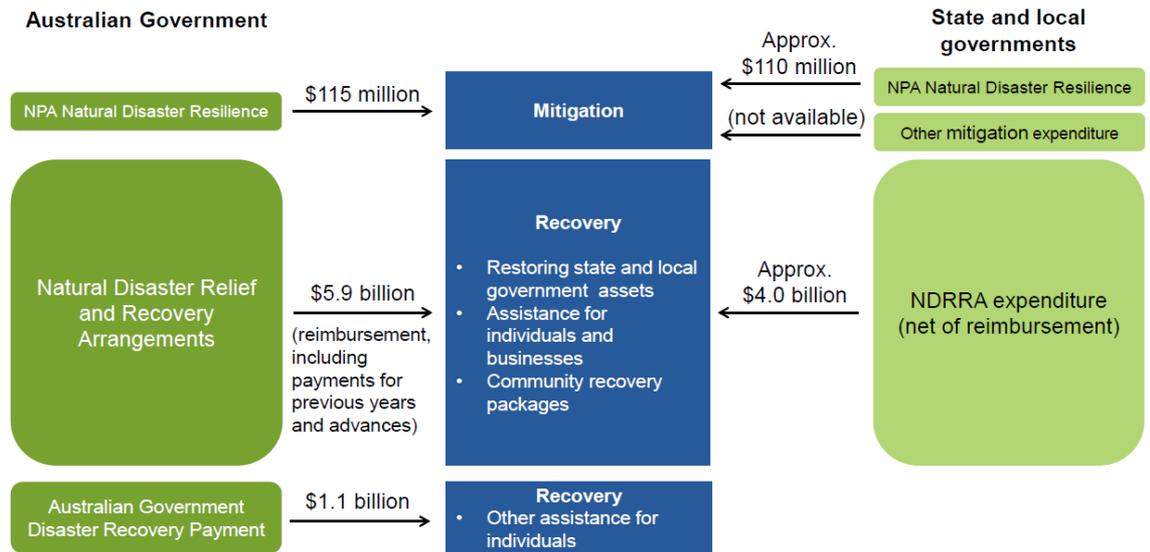
The economic cost of the social impact of natural disasters March 2016

Chart i: Breakdown of costs between reports



The economic cost of the social impact of natural disasters March 2016

Figure 4 **The major national natural disaster funding arrangements**
Expenditure for 2009-10 to 2012-13



Mitigation

\$225 million
~\$56m p.a.

Recovery

\$11 billion
~\$2.75bn p.a.

Recovery cost

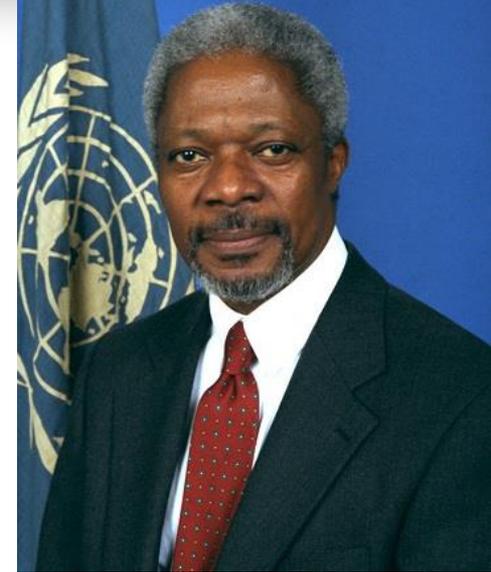
49 times

Mitigation cost

***‘Building a culture of prevention is not easy.
While the costs of prevention have to be paid in the
present, its benefits lie in a distant future.***

***Moreover, the benefits are not tangible; they are the
disasters that did NOT happen.’***

Kofi Annan
UN Secretary General 1999



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RISK OWNERSHIP FRAMEWORK FOR EMERGENCY MANAGEMENT POLICY AND PRACTICE

Celeste Young, Roger Jones, Margarita Kumnick, Greg Christopher & Nicholas Caey
Victoria Institute of Strategic Economic Studies: Victoria University



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Australian Government
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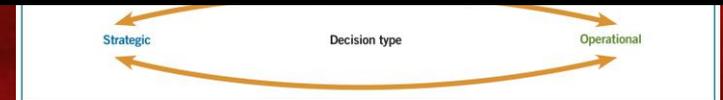
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 **VICTORIA
UNIVERSITY**
MELBOURNE AUSTRALIA

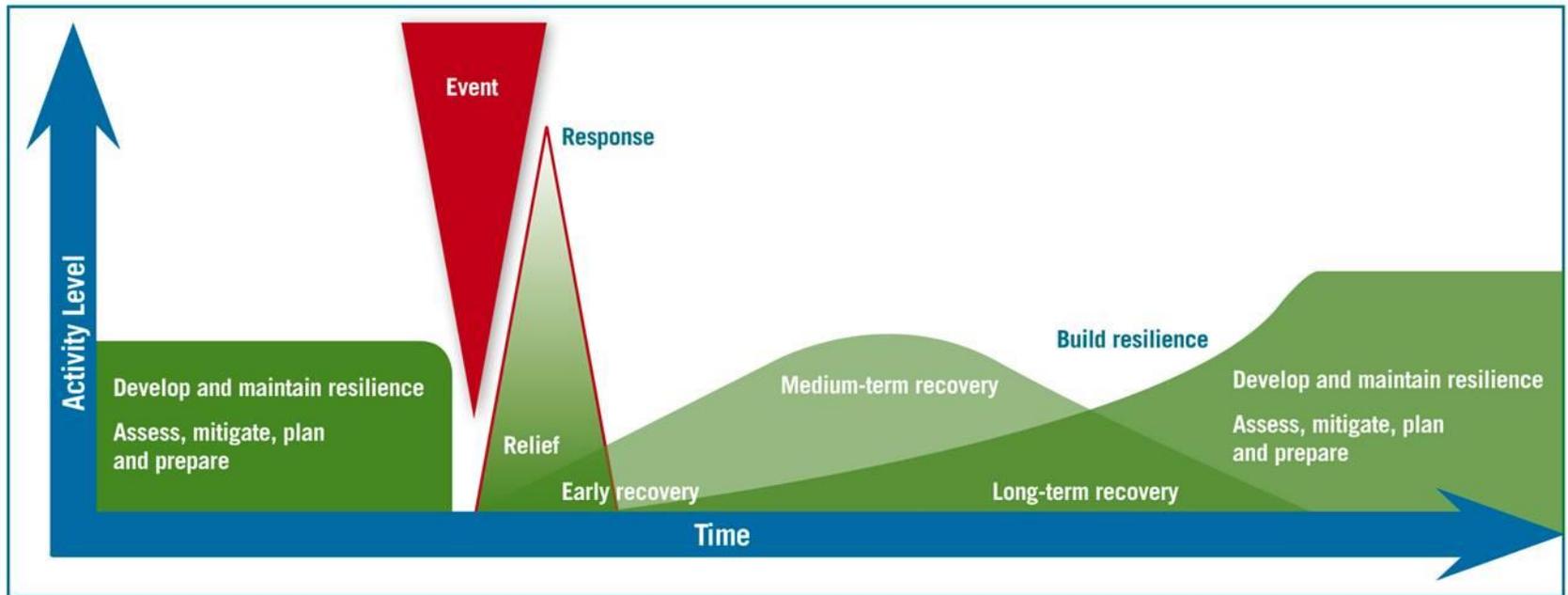
WHY RISK OWNERSHIP IS IMPORTANT



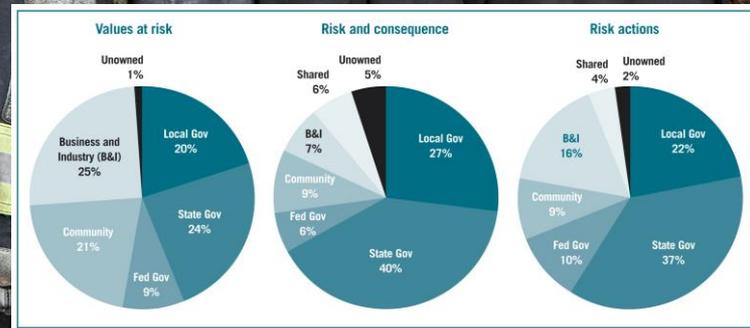
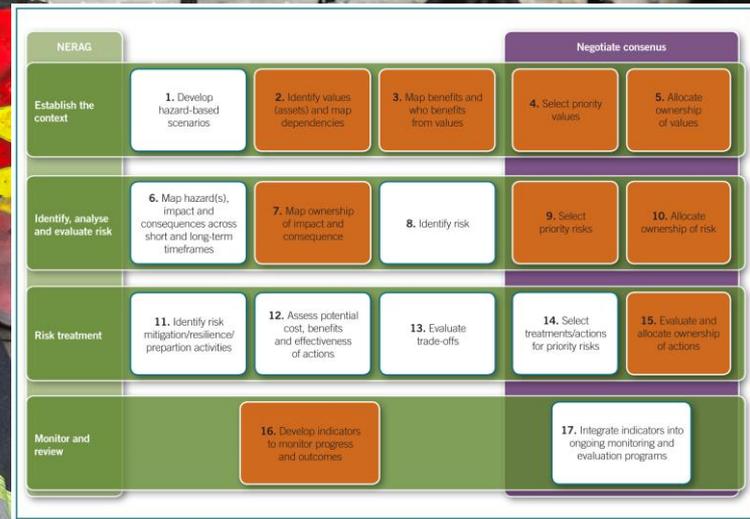
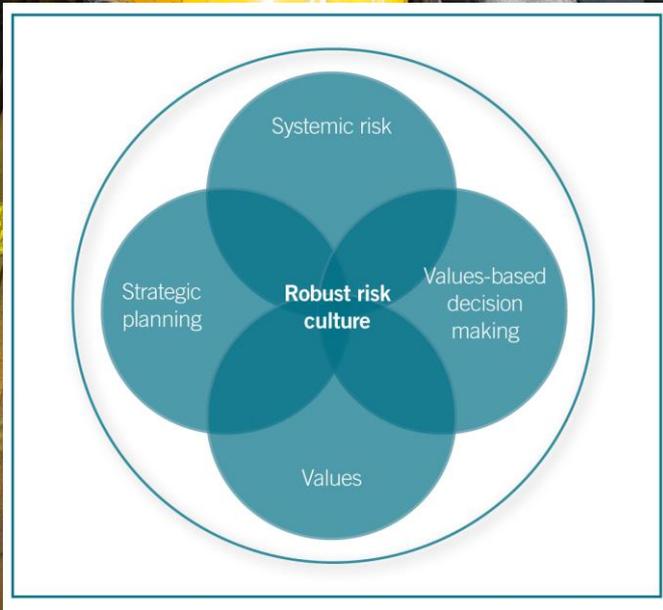
Risk ownership is the one constant in a highly changeable risk landscape. If a risk is not owned then it very likely it is not being managed.



THE CHALLENGE



THE FRAMEWORK



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RESEARCH OUTCOMES

Understanding risk ownership for natural hazards supports a key concept of disaster resilience –

it is everyone's business...

- The risk ownership process focuses on attributing ownership for emergency management, particularly planning and mitigation
- Better understanding and allocation of risk ownership leads to improved collaboration
- Involvement of a broader range of stakeholders to manage emergencies – not just “traditional” EM organisations
- Community resilience is enhanced through the identification, prioritisation and coordination of additional mitigation actions

APPLICATION OF RESEARCH

Key elements of the risk ownership process need to be integrated with current emergency management planning approaches / systems

- The risk ownership companion process is mapped to the National Emergency Risk Assessment Guidelines (NERAG) – broad take-up and application of concepts is supported by integration
- Additional opportunities for integration
 - Action / activity under a community resilience framework
 - Review of NSDR Community Engagement Handbook
 - Developing stakeholder engagement strategies for EM planning

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NON-MARKET (INTANGIBLE) VALUES



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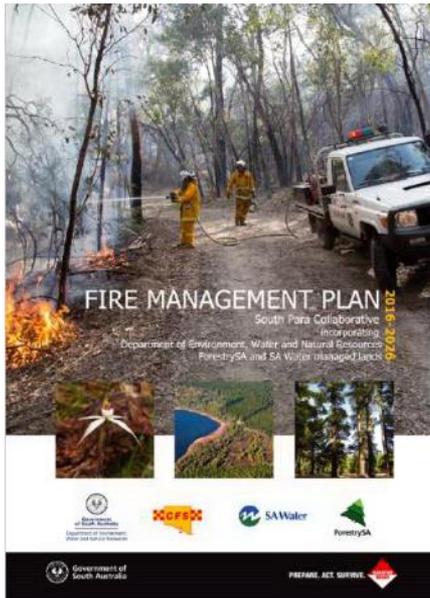
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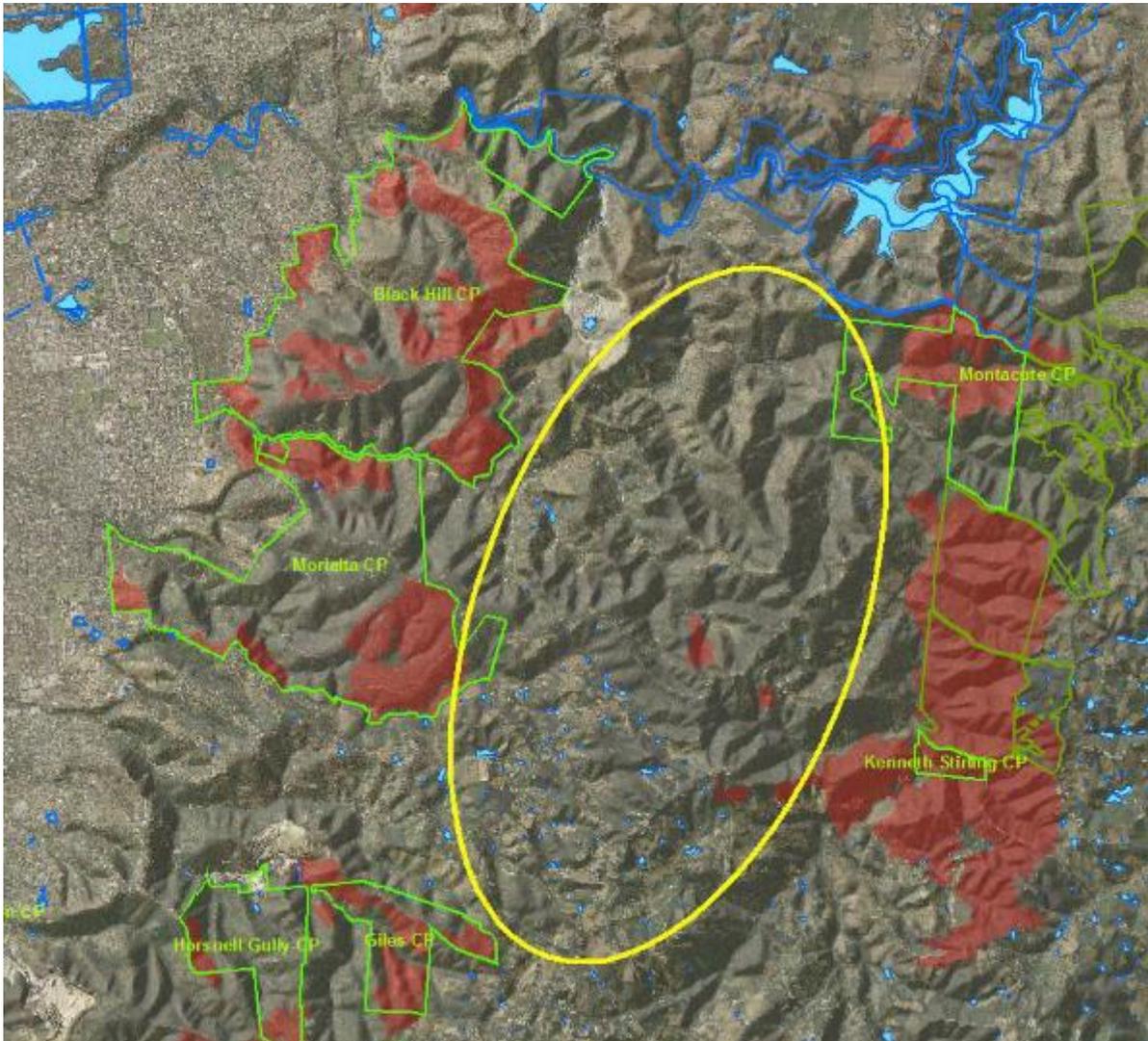
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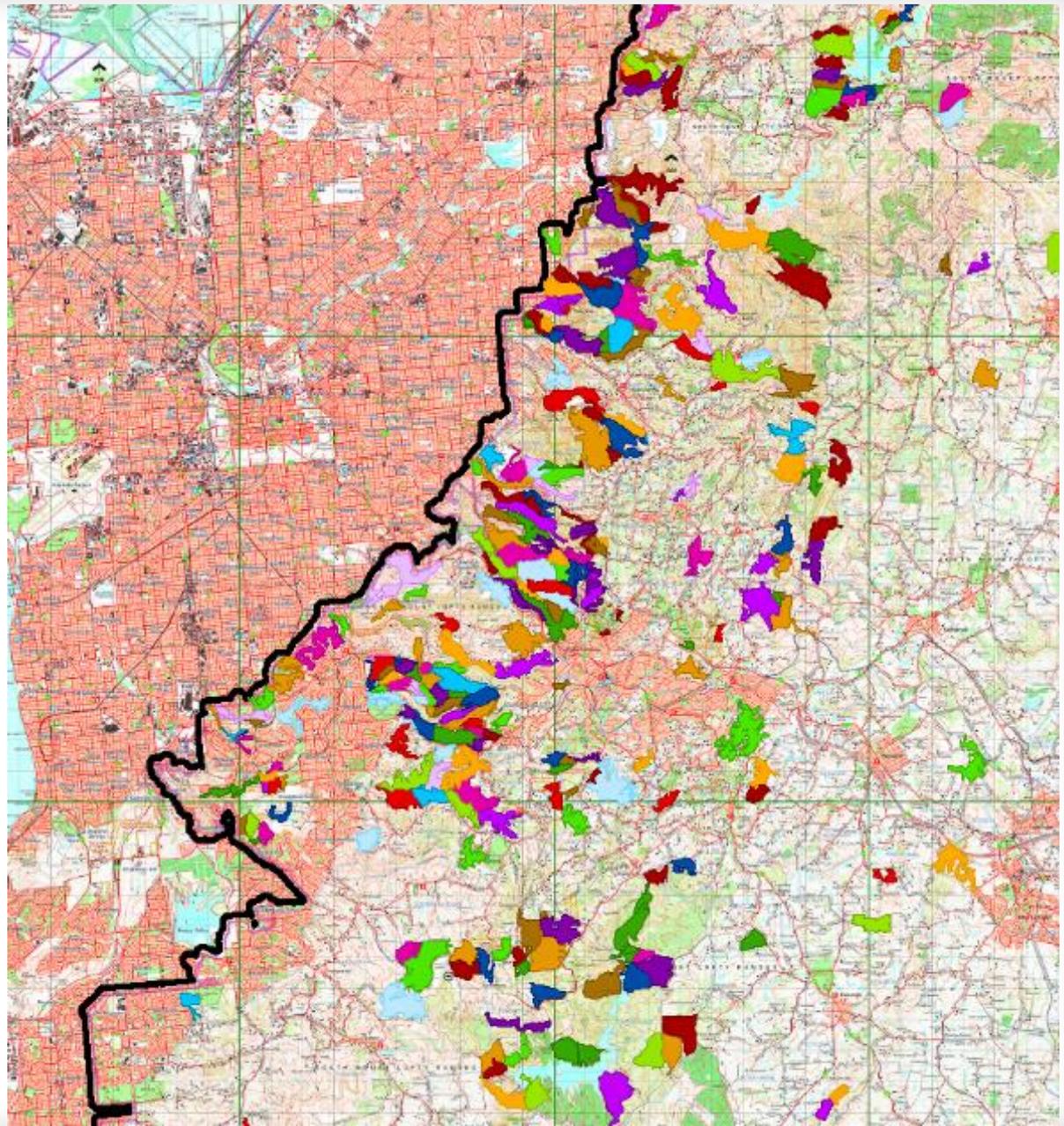
**ADELAIDE
MOUNT LOFTY
RANGES**

BUSHFIRE MANAGEMENT
AREA PLAN

DRAFT



This Plan has been developed as part of a project funded by the Natural Disaster Resilience Program (NDRP) in partnership with the Commonwealth and State Government of South Australia.



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IMPROVED DECISION SUPPORT FOR NATURAL HAZARD RISK REDUCTION

Graeme Riddell, Hedwig van Delden, Holger Maier, Aaron Zecchin, Roel Vanhout & Jeff Newman

The University of Adelaide, Australia

Research Institute for Knowledge Systems, the Netherlands

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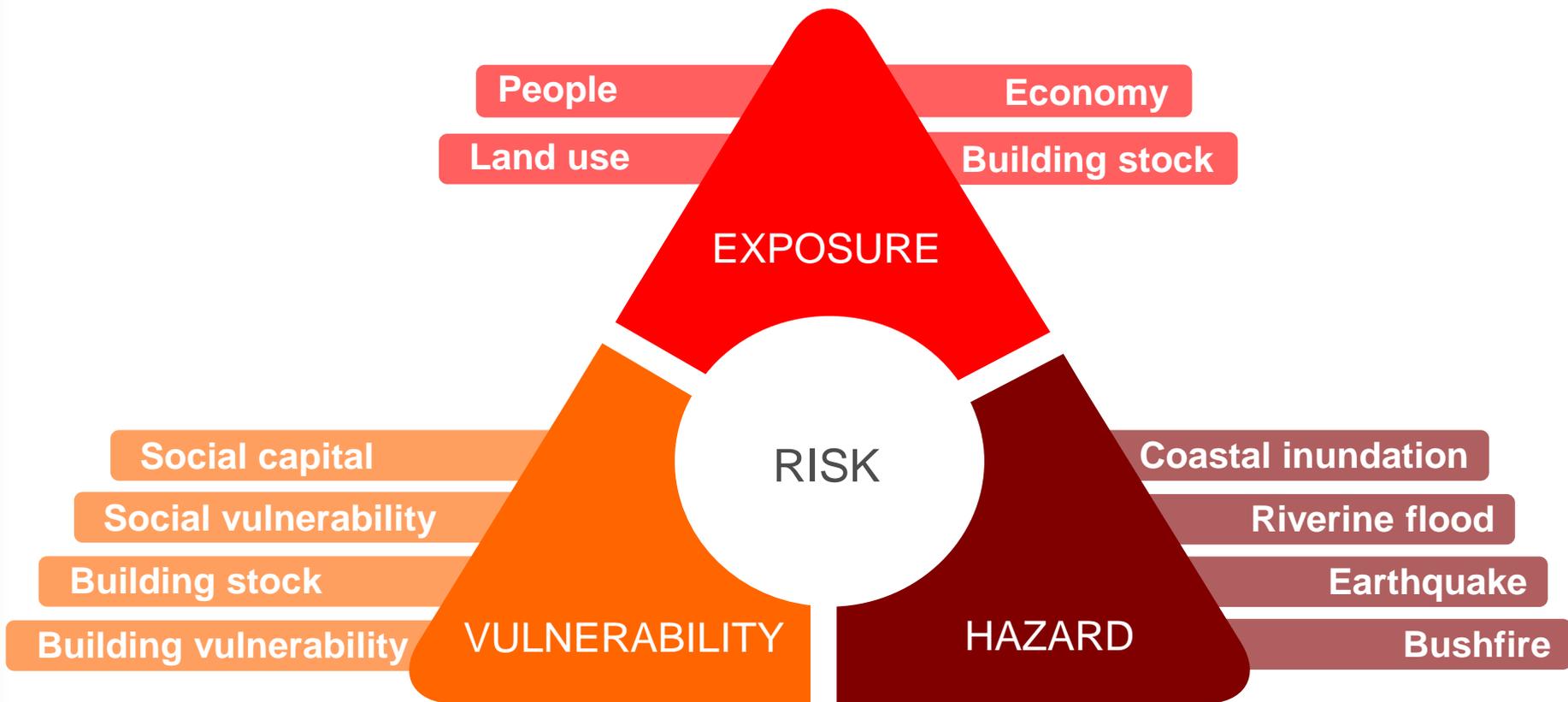


THE UNIVERSITY
of ADELAIDE



research Institute for knowledge systems

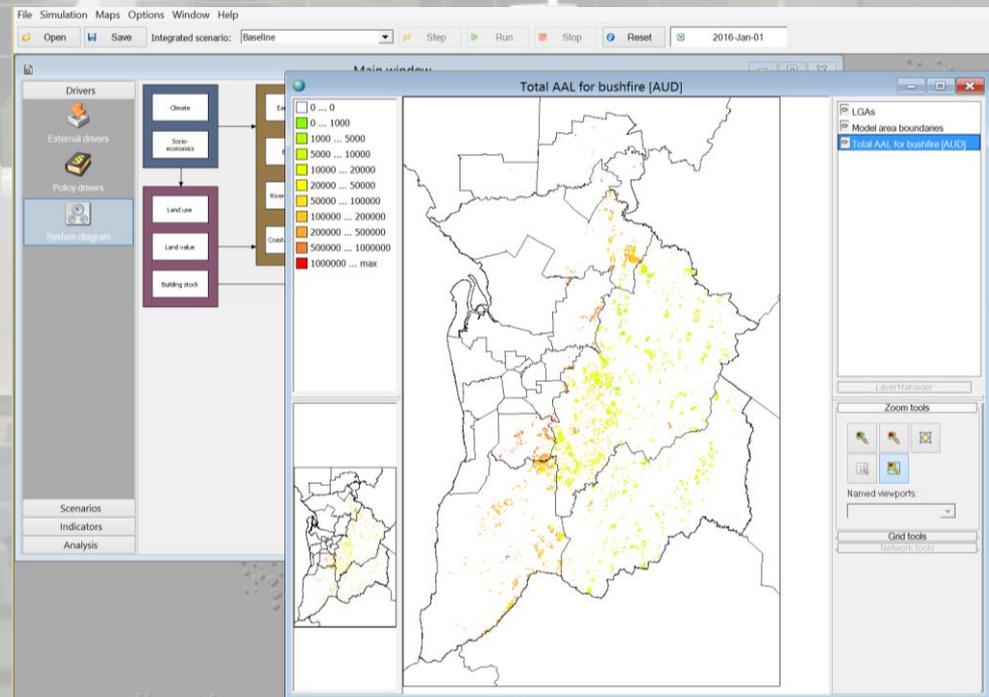
**AIM: Improve thinking about risk into the future –
Better manage and minimise risk;
Position organisations and communities to best achieve this**



Framework & DSS for understanding and reducing disaster risk

Considers:

- Long term dynamics & uncertainties
- Exposure
- Hazard intensity and likelihood
- Building vulnerability
- Risk reduction options
 - Land Use planning
 - Structural Measures
 - Land Management
 - Education & Awareness
 - Building Codes



Main window

Drivers

External drivers

Policy drivers

System diagram

Scenarios

Indicators

Analysis

Driver: Area demand

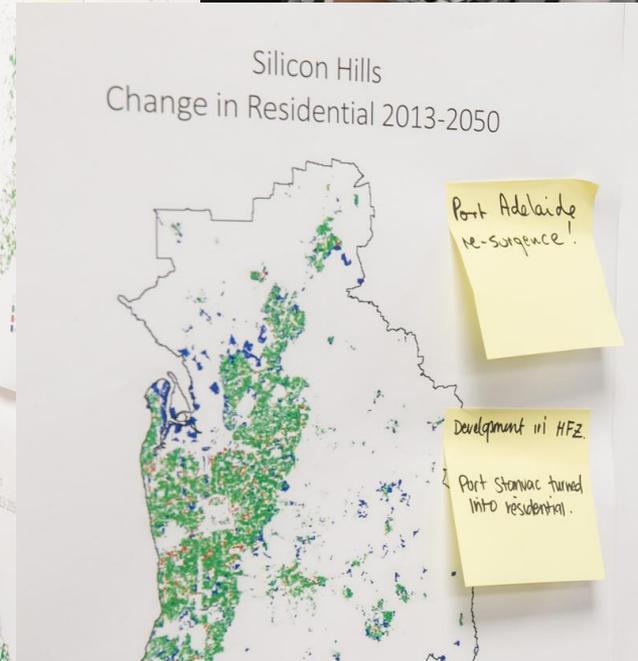
Socio-economic sub-scenario: Baseline Load sub-scenario... Save sub-scenario...

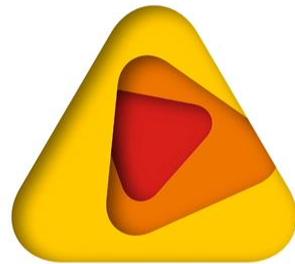
Land use	Total demand
Residential	<input checked="" type="checkbox"/>
Rural residential	<input checked="" type="checkbox"/>
Commercial	<input checked="" type="checkbox"/>
Public institutions including education	<input checked="" type="checkbox"/>
Recreation	<input checked="" type="checkbox"/>
Industry	<input checked="" type="checkbox"/>
Agriculture	<input checked="" type="checkbox"/>
Horticulture	<input checked="" type="checkbox"/>
Livestock	<input checked="" type="checkbox"/>

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Decision support system for optimal natural hazard mitigation

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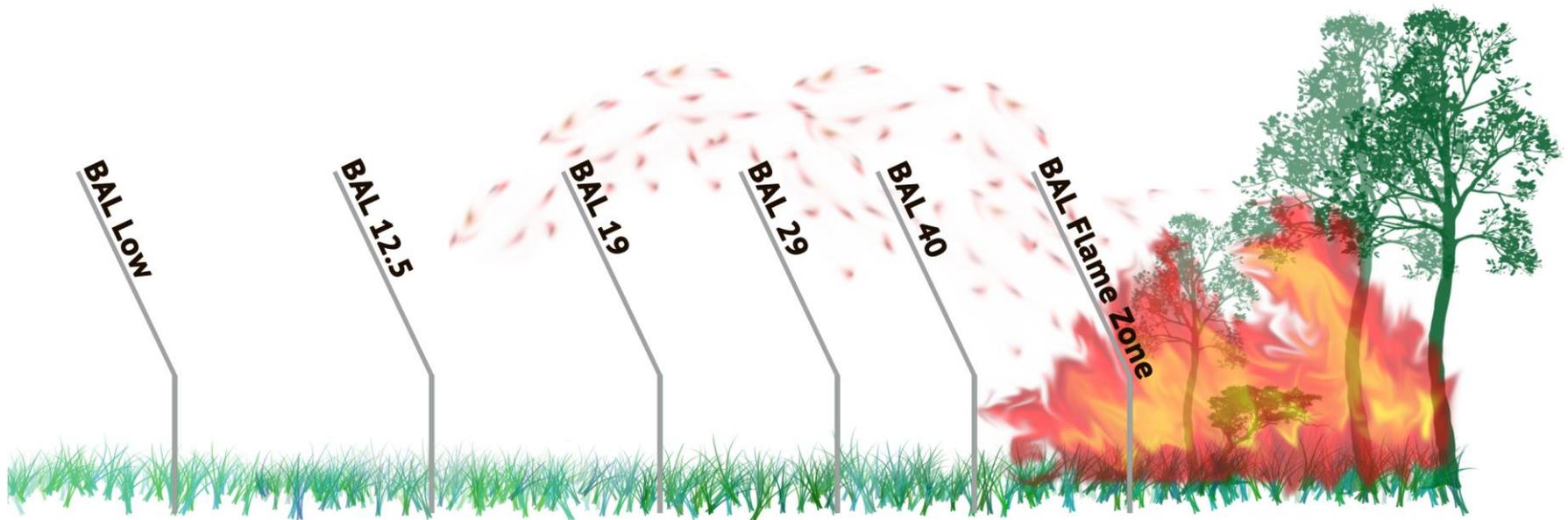
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UNHARMED – USER PERSPECTIVES



Fire Ecology:
Key Ecological Attributes of Fire

UNHARMED - APPLICATIONS



UNHARMED – FUTURE DEVELOPMENT



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UTILISATION IN WESTERN AUSTRALIA

1) Developing a Decisions Support System for WA

- a) WA Local Government Association
- b) WA Dept of Planning

2) Phase 1: WA Case Study

- a) Bushfire, Earthquake and coastal inundation hazards
- b) 57 Local Government Areas



UTILISATION IN WESTERN AUSTRALIA

1) Phase 2: Develop DSS Prototype

- a) Rigorous
- b) Efficient
- c) Transparent
- d) Consistent

2) Phase 3: Utilisation Pathways

3) Phase 4: Training





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