

Improved decision support for natural hazard mitigation

Research advisory forum / **2018**

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 @riddell_g

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bushfire&natural
HAZARDSCRC



Australian Government
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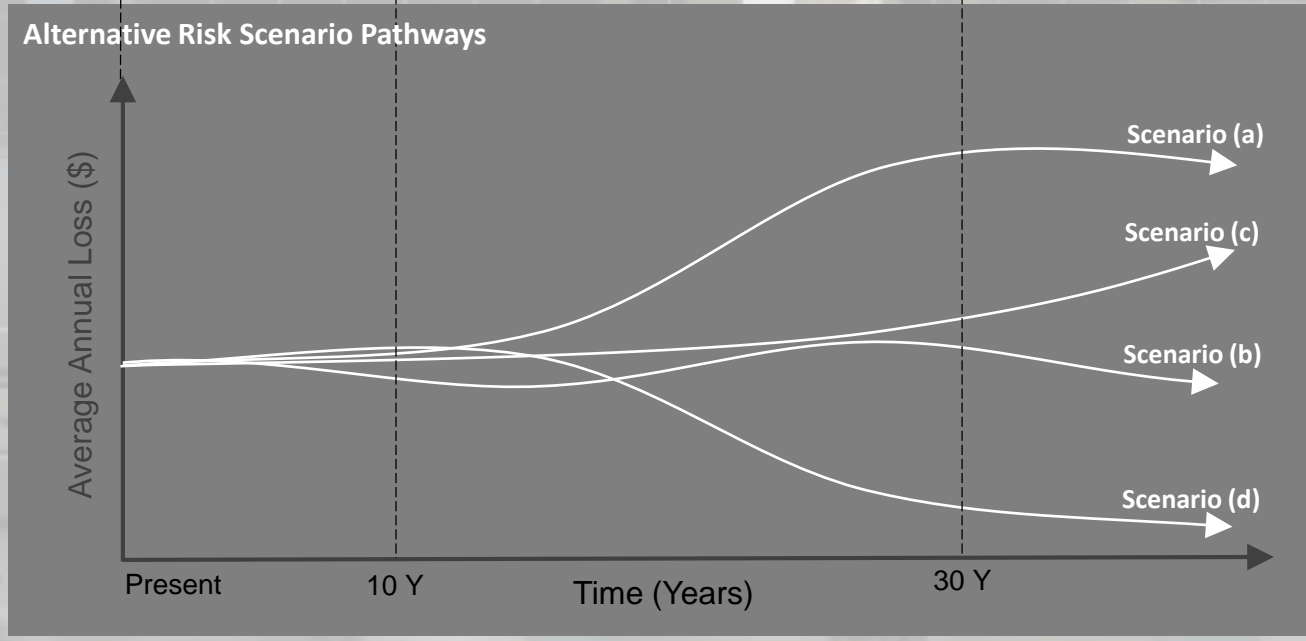
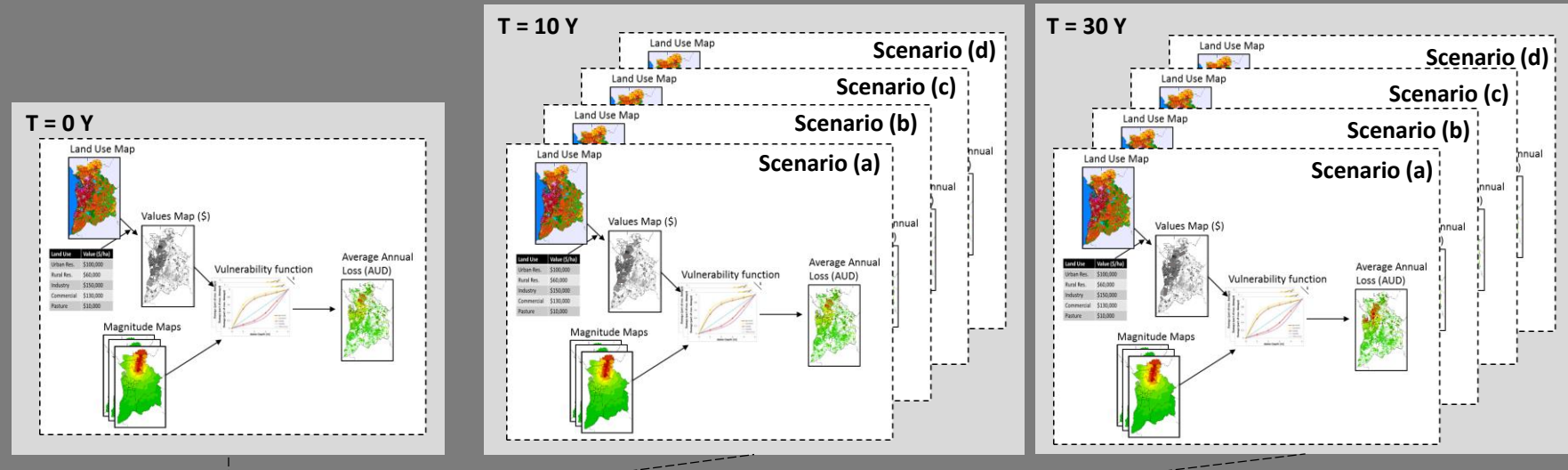


UNHaRMED

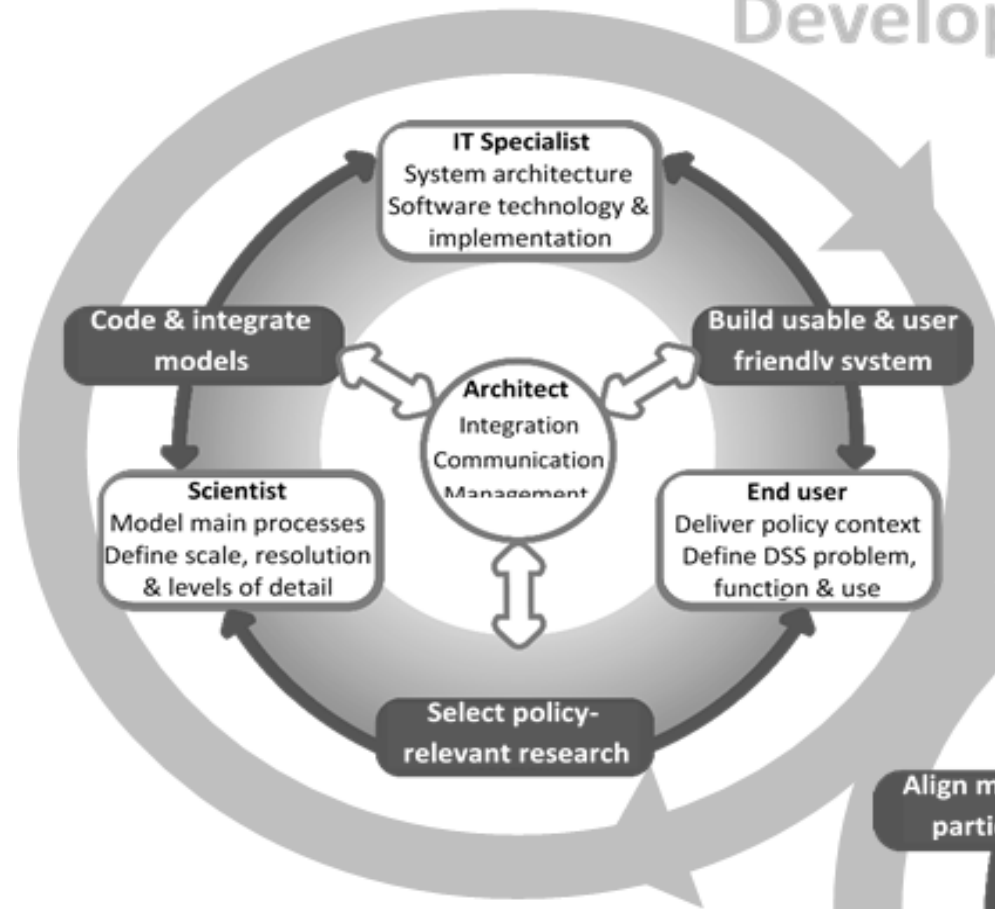
A tool for pro-active disaster risk assessment and reduction planning

- Interactive modelling platform to assist decision making, investment choices and mitigation measures
- Aims:
 - Improve thinking about risk into the future;
 - Better manage and minimise risk;
 - Position organisations to best achieve this and lobby others.
- Considers long-term dynamics and uncertainties of hazard, exposure and vulnerabilities
- Bushfire, earthquake, coastal / river flooding
- Integrated scenario analysis (exposure, vulnerability, hazard)
- Incorporated assessment of risk reduction measures

Future Scenarios

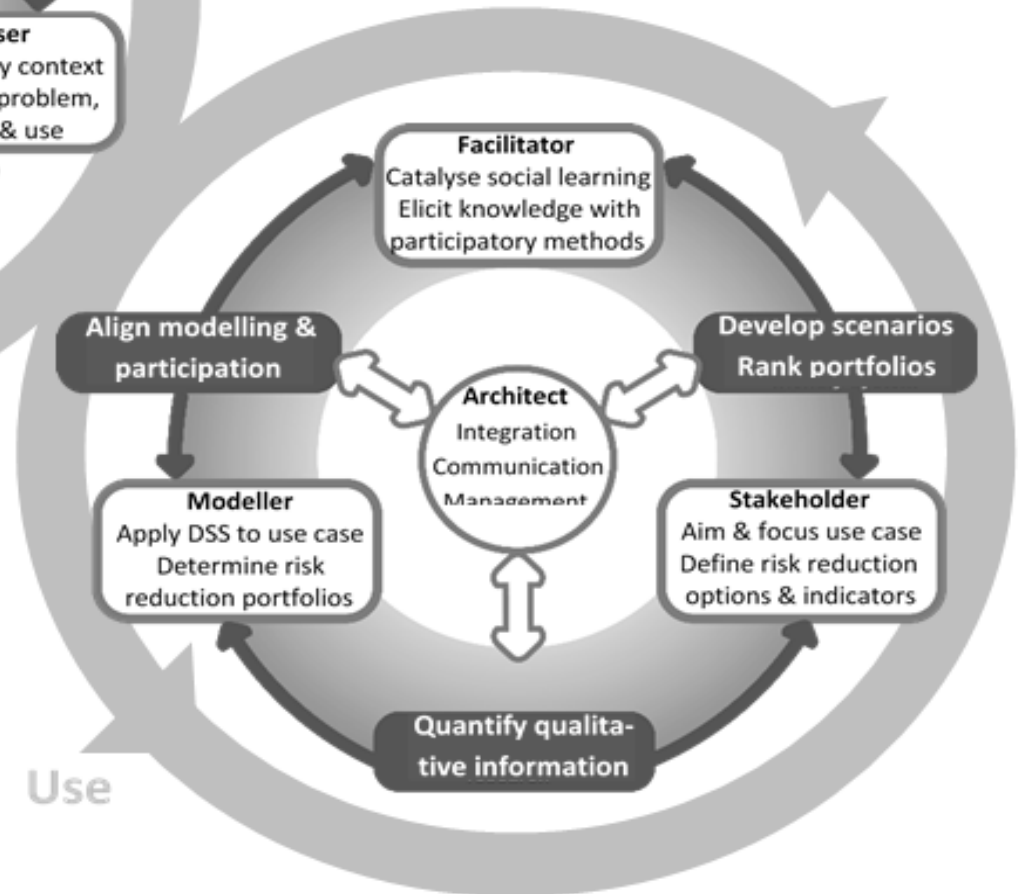


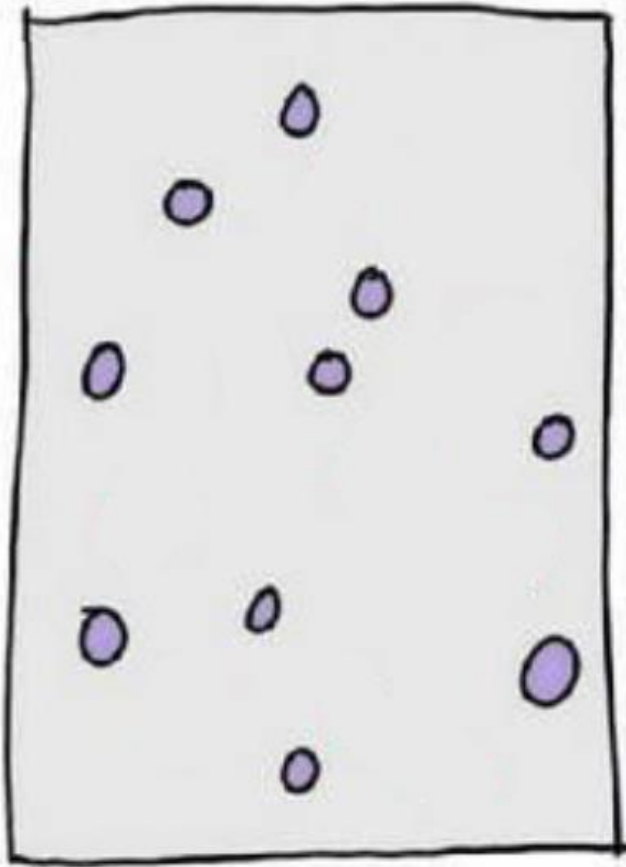
Development

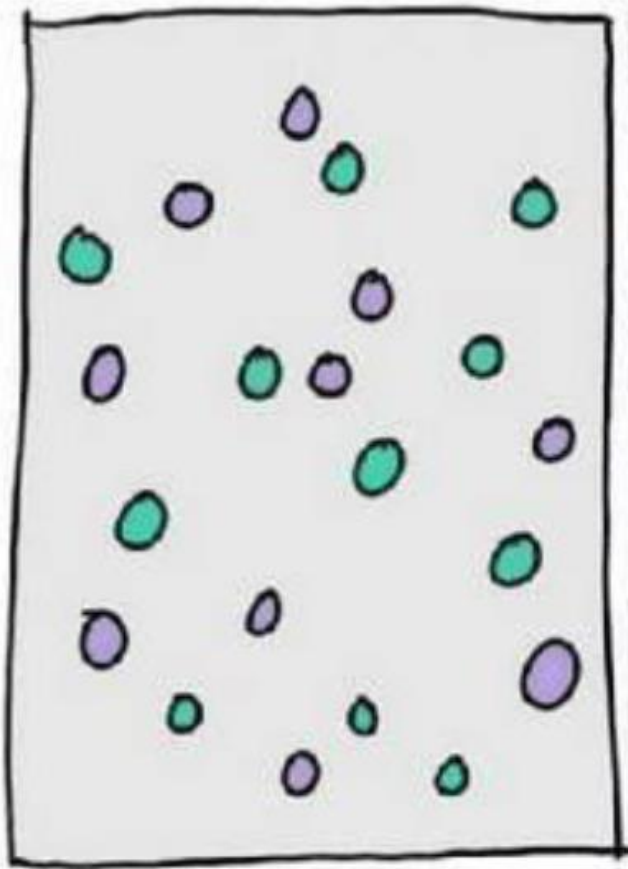


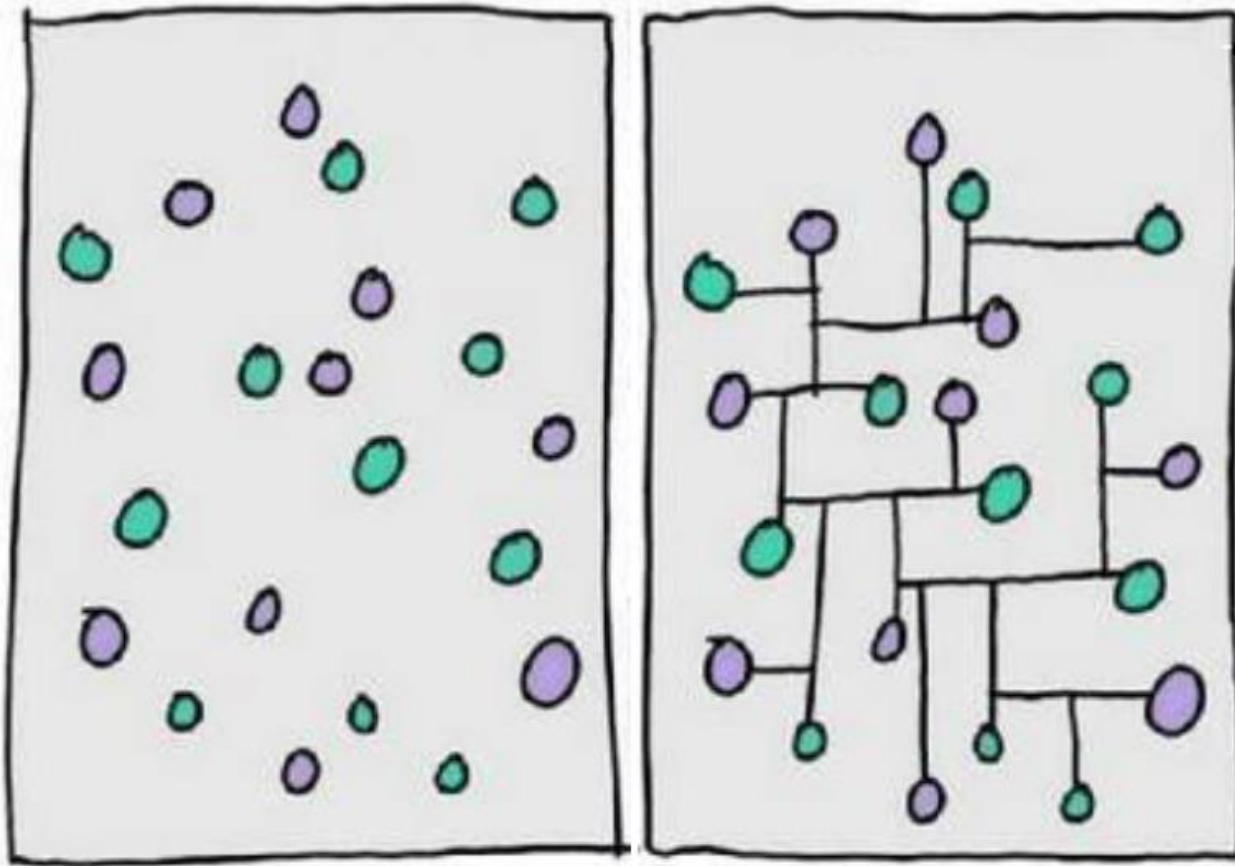
Development process

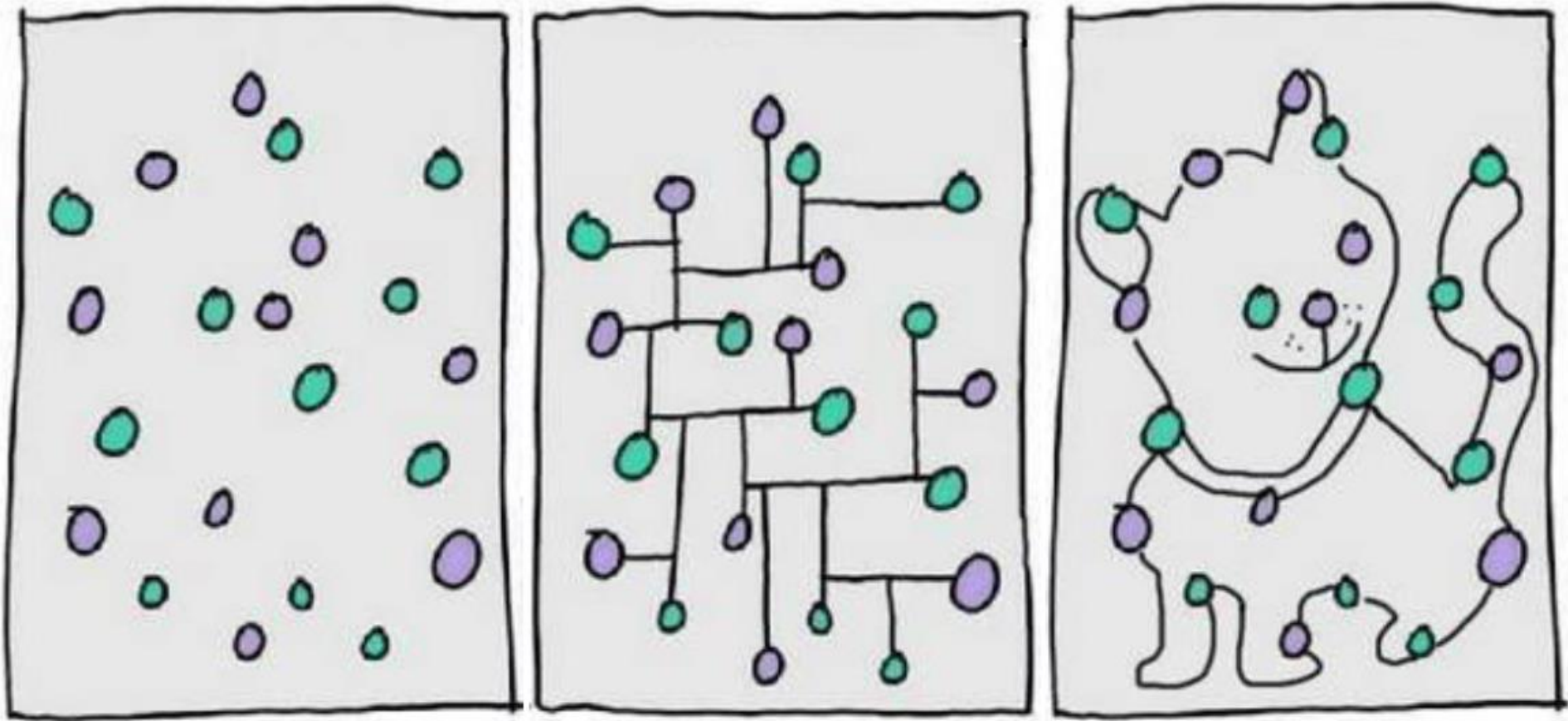
1. Designed to answer broad range of questions
2. Provide relevant indicators for policy development and assessment



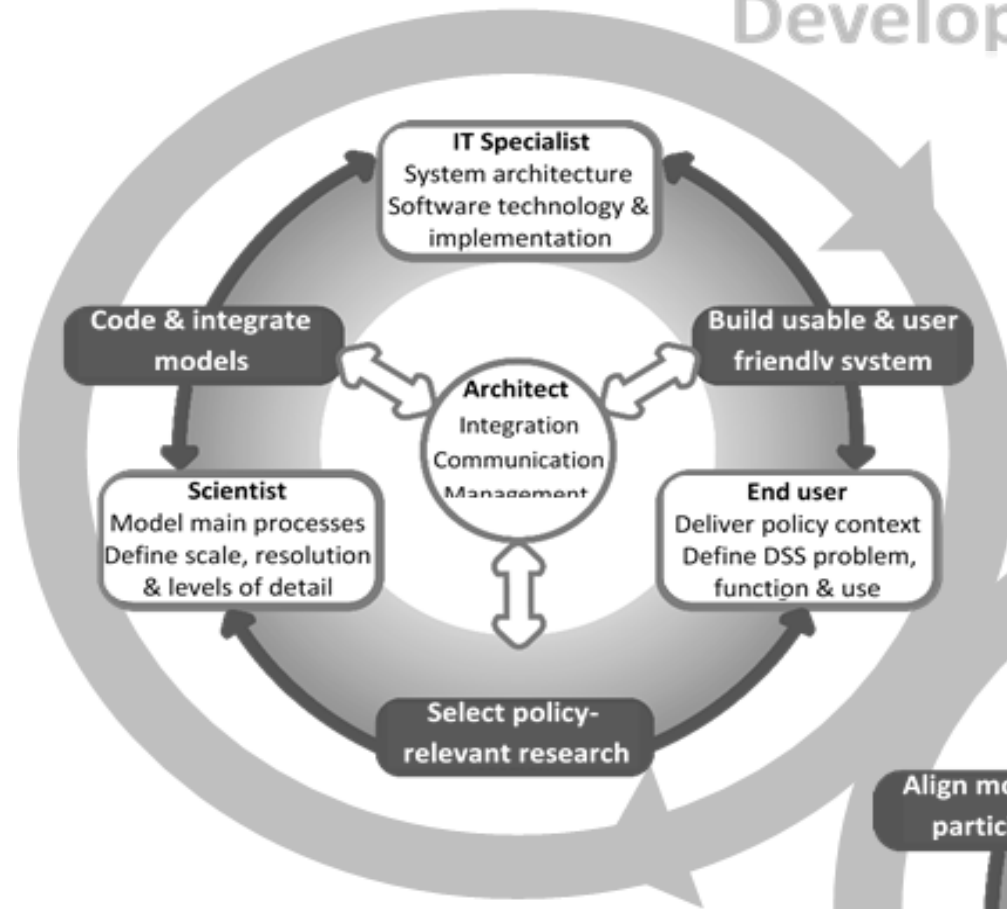






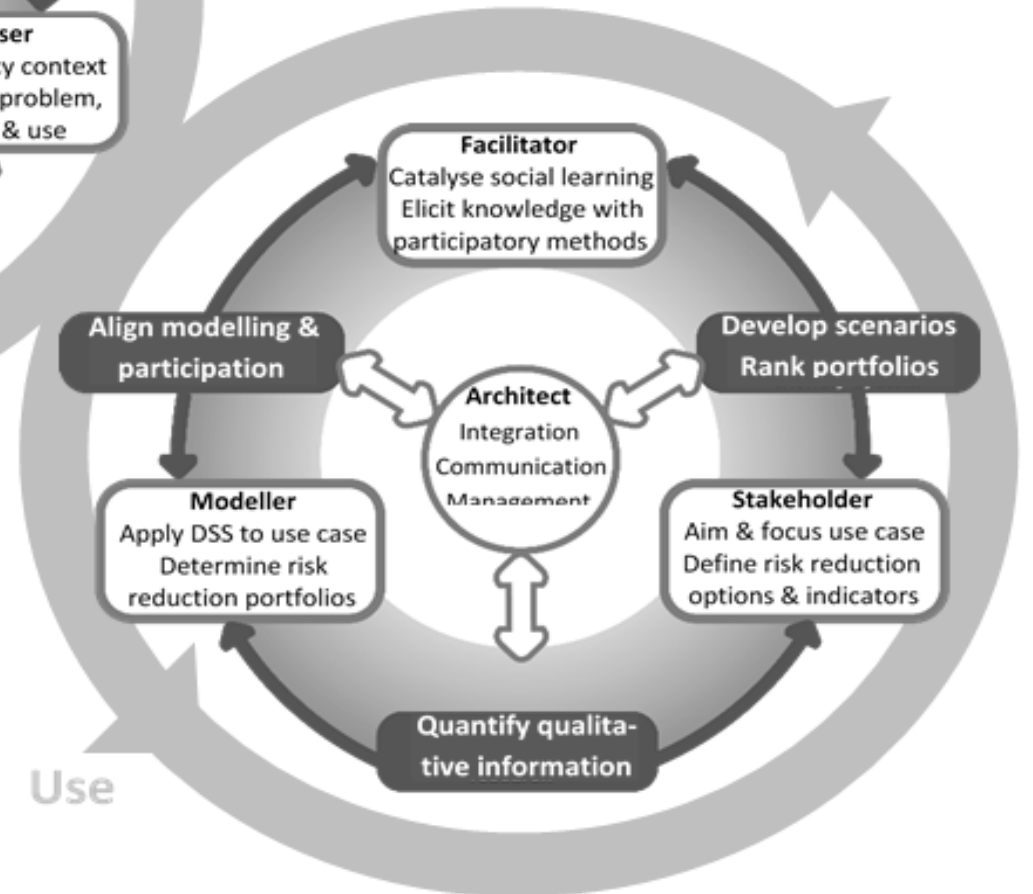


Development



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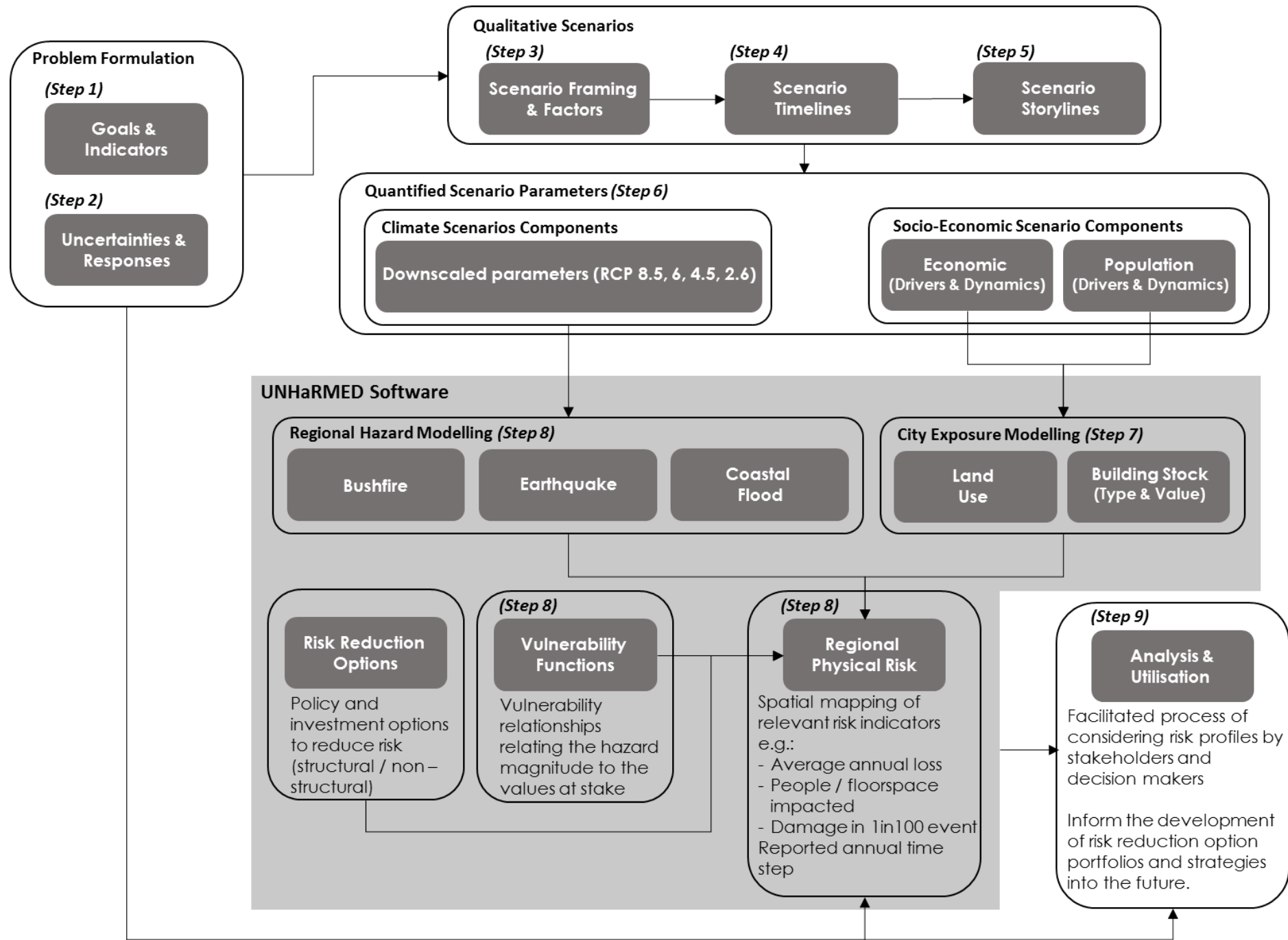
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Use process

1. Integrate outputs into decision-making processes
2. Develop organizational capacity in software
3. Build strategic capacity by exploring future risk profiles

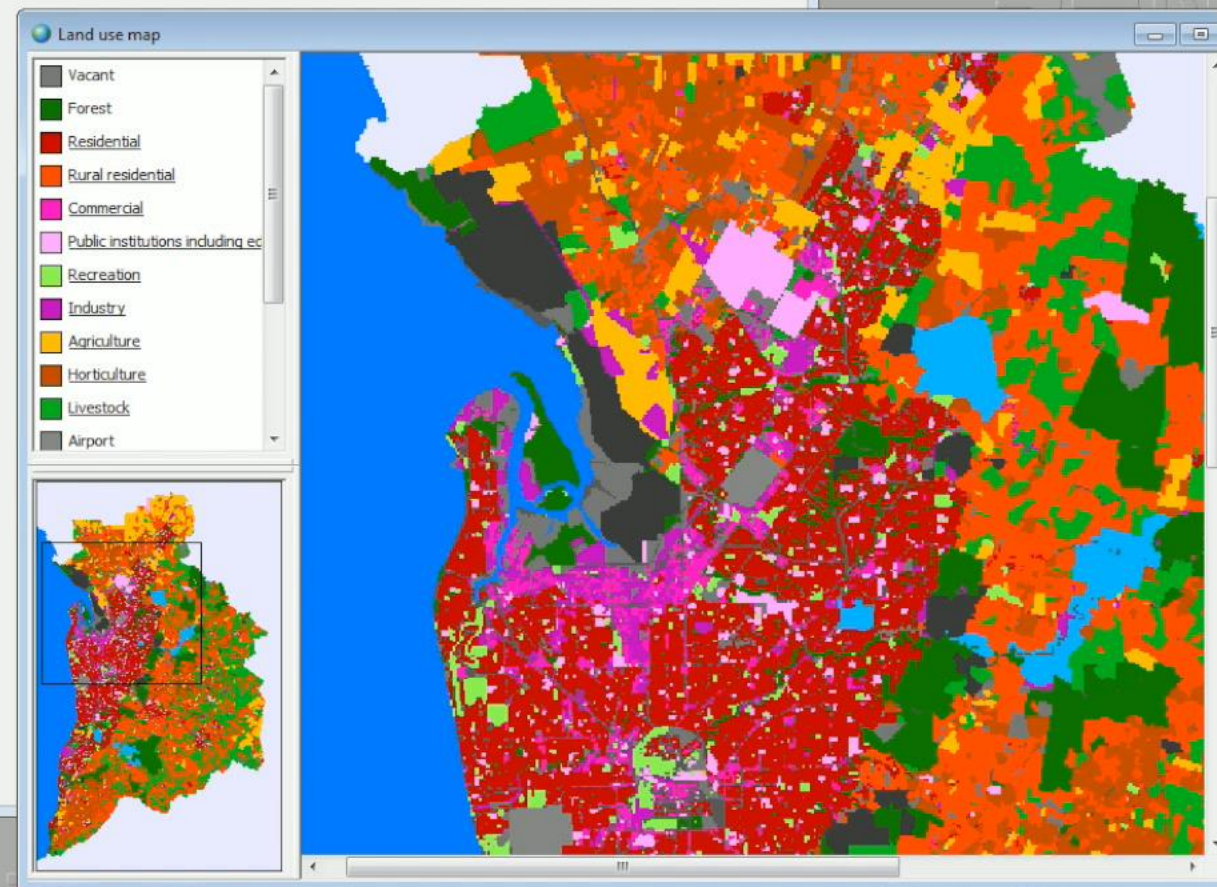
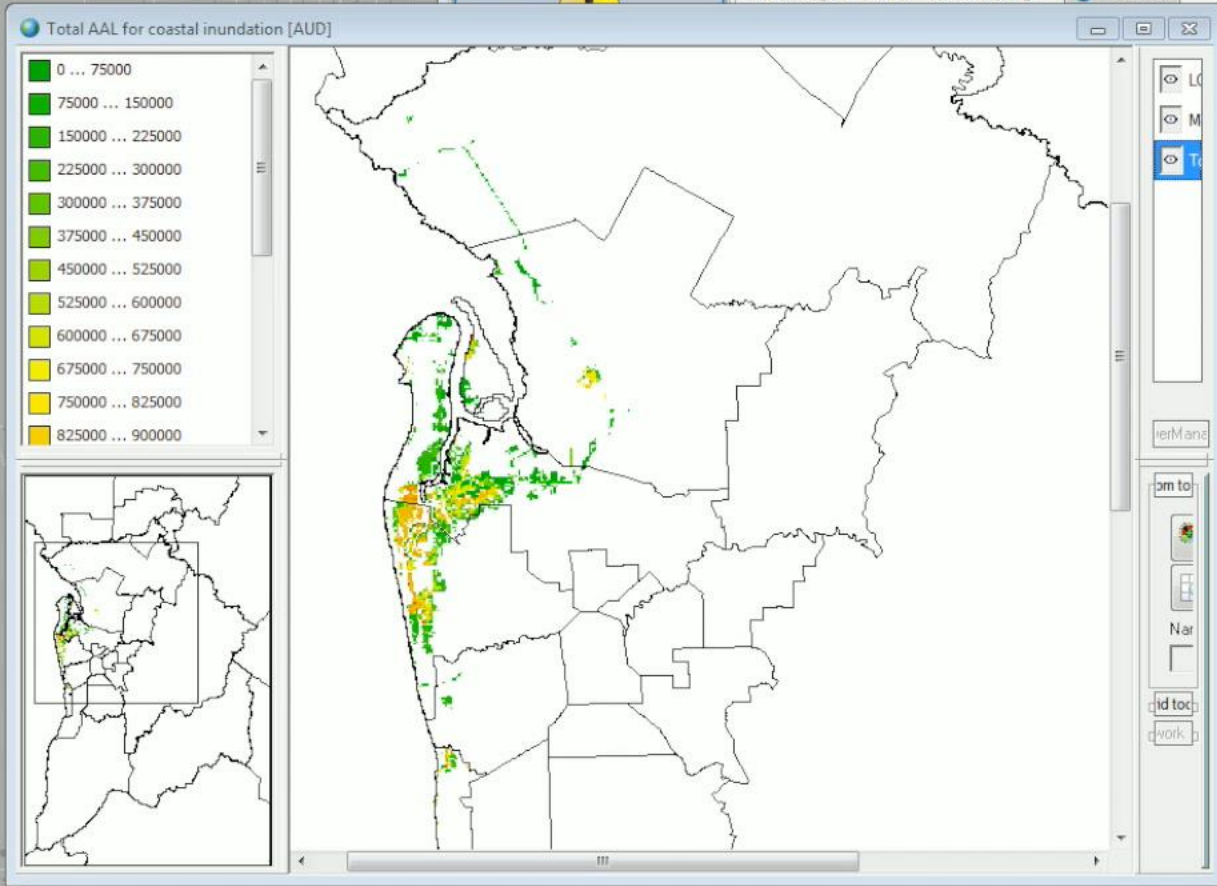
Feedbacks exist so that use informs development, iterative process



Main window

Drivers
Scenarios
Indicators

Total average annual loss - bushfire: Show map
Total average annual loss - earthquake: Show map
Total average annual loss - river flooding: Show map
Total average annual loss - coastal flooding: Show map



Indicators



Total average annual loss - earthquake:

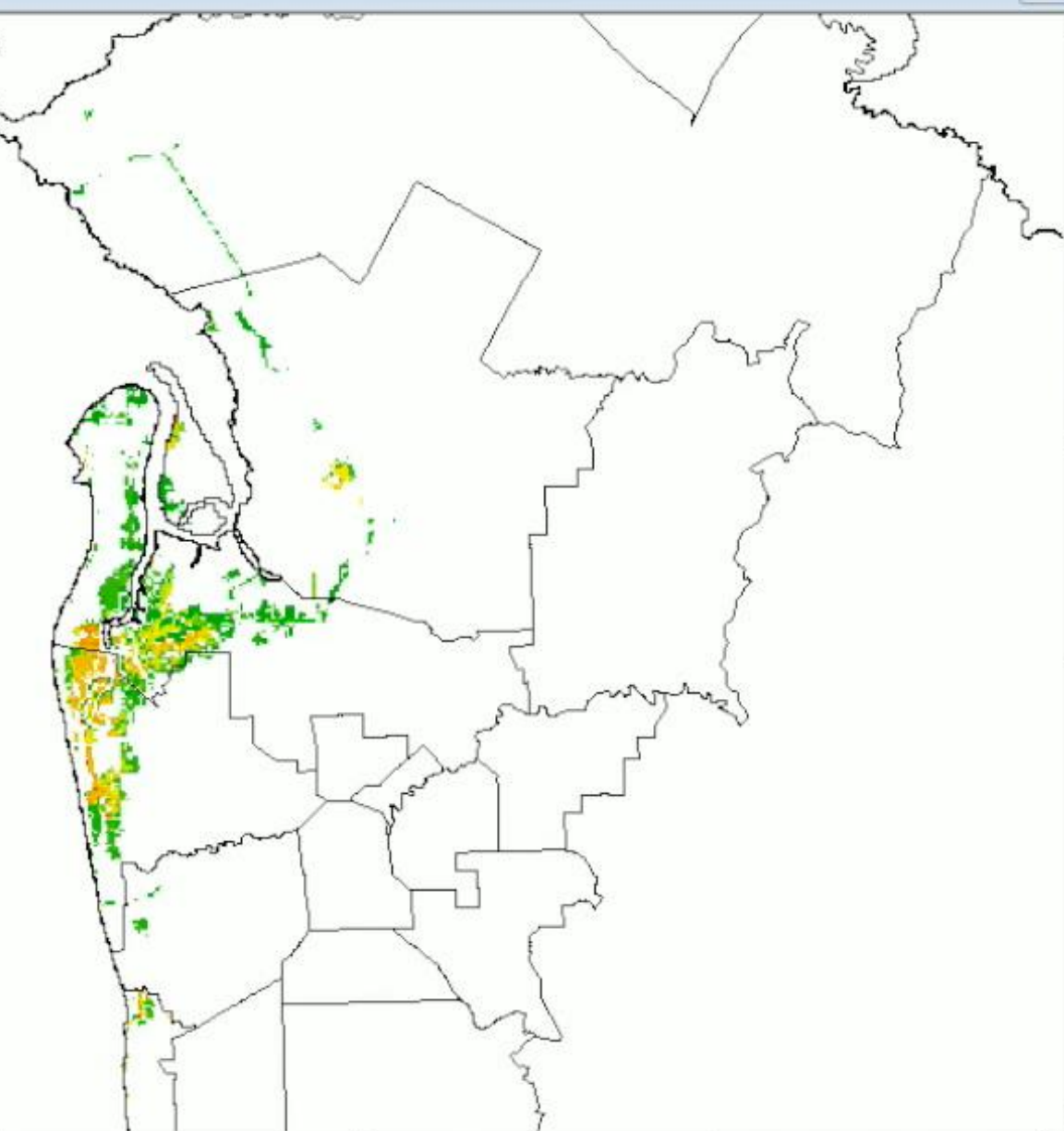
Show map

Total average annual loss - river flooding:

Show map

Total average annual loss - coastal flooding:

Show map

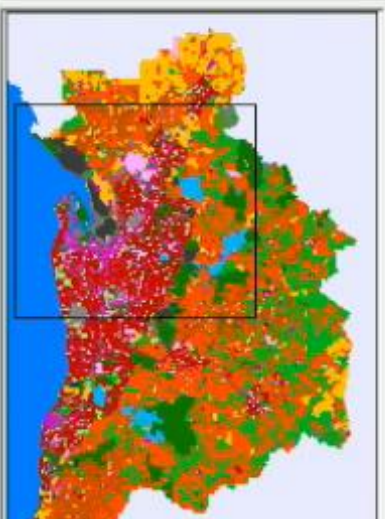


Map navigation and control panel:

- Layer visibility icons for 'LO', 'M', and 'To'.
- Buttons for 'Zoom in', 'Zoom out', 'Full screen', 'Layers', 'Legend', 'Home', 'Print', 'Help', and 'Work'.

Land use map

- Vacant
- Forest
- Residential
- Rural residential
- Commercial
- Public institutions including ec
- Recreation
- Industry
- Agriculture
- Horticulture
- Livestock
- Airport



Where next?

Using and improving UNHaRMED

Agent and activity based modelling to explore where people are, what they are doing, and how they are vulnerable to risk, or how they can act differently to reduce their risk.

Support current users to use, integrate and enhance UNHaRMED

Using existing applications to consider specific risk hotspots, and supporting stakeholders work through issues for long-term strategic planning. The Gawler River floodplain is one location we're looking to do this.

New regions, agencies, hazards

Improved socio-economic understanding of risk (exposure & vulnerability)

Working across SA, VIC, WA, and TAS to train and help agencies use the applications. Use this to inform further improvements and justify the application to the region to support better planning.

Applying UNHaRMED to support specific risk assessments, and strategic planning processes

Continuing to expand the use of UNHaRMED in new locations, with diverse stakeholders and adding to hazards included.

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Thank you

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