

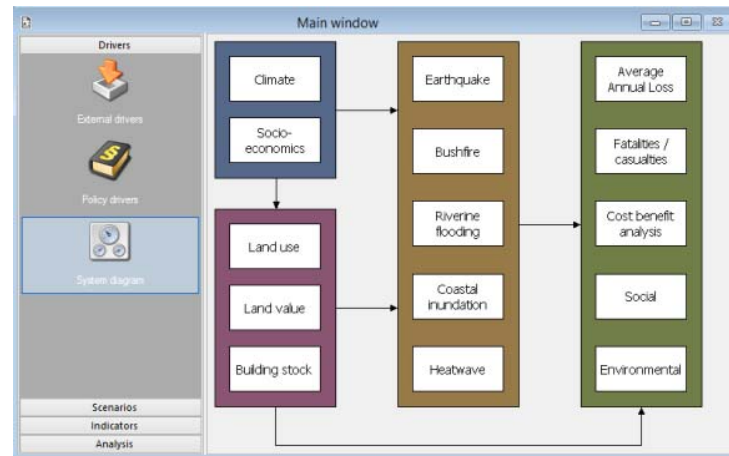
Natural Disaster Risk Reduction Decision Support System

The University of Adelaide (Australia) and the Research Institute for Knowledge Systems, RIKS (the Netherlands), sponsored by the Bushfire & Natural Hazard Cooperative Research Centre, BNHCRC are developing a spatial decision support system (DSS), or integrated model, to support policy makers consider the long term impacts of disaster risk, mitigation and land use planning.

The modelling platform integrates various hazard models and calculates risk dynamically using demographic, infrastructure, and environmental data to explore future disaster risk.

Model components include:

- Hazards (coastal inundation, riverine floods, bushfires, earthquakes, heatwaves)
- Land use change
- Building stock vulnerability
- Social vulnerability
- Climate change
- Demographic and population change
- Economic change



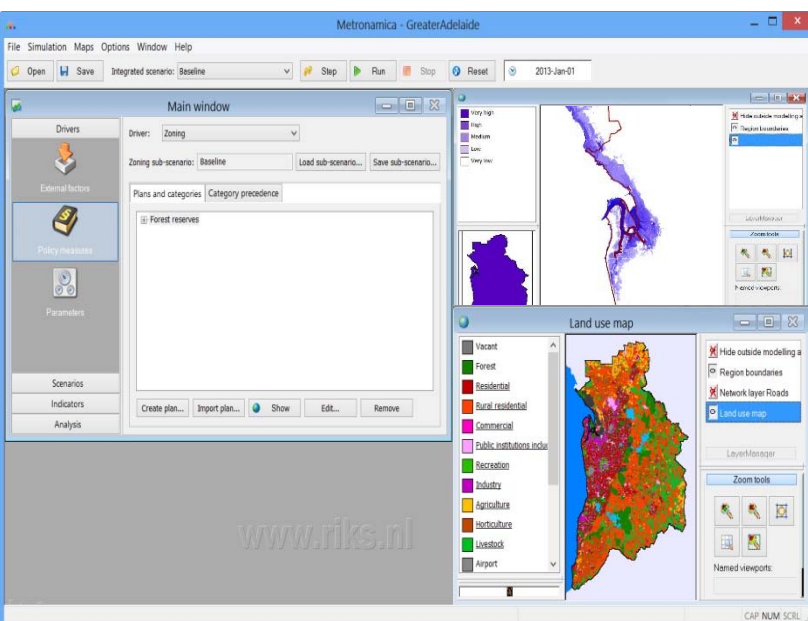
Modeller Overview for Greater Adelaide

The DSS allows decision makers, policy analysts and others in strategic and risk reduction planning to consider how the risk from multiple hazard changes with economic and population change.

It also allows for the implementation of risk reduction options, including structural measures, land use planning changes, building hardening, changes to building codes and community education, thereby changing social vulnerability.

Scenarios are also developed that explore plausible future of developments. This is done in participatory workshops, scoping the factors that drive how the area of interest becomes more resilient or one that is heavily protected through large engineering works. These factors become the building blocks for stories about the future, which would challenge the implementation and effectiveness of policies and actions to create resilience or mitigate risk.

These stories are then translated into parameters and spatially modelled, to provide visual representations of plausible futures that challenge policy makers and their policies into the future. This then allows robust and adaptive plans to be developed to meet a broad range of challenges to disaster risk reduction.



Policy Overview for Greater Adelaide with Coastal Risk and Land Use

The outcomes from development and application of the DSS are:

1. A systematic and transparent approach to evaluating disaster risk reduction options.
2. A framework for making more strategic and less responsive decisions.
3. The ability to sift through, evaluate and rank a large number of risk reduction options.
4. Understanding of the trade-offs between economic, environmental and/or social objectives for risk reduction options.
5. Building strategic capacity across governments for considering the future challenges of disaster risk reduction in a dynamic and growing region.

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