NATURAL HAZARDS EXPOSURE INFORMATION MODELLING FRAMEWORK

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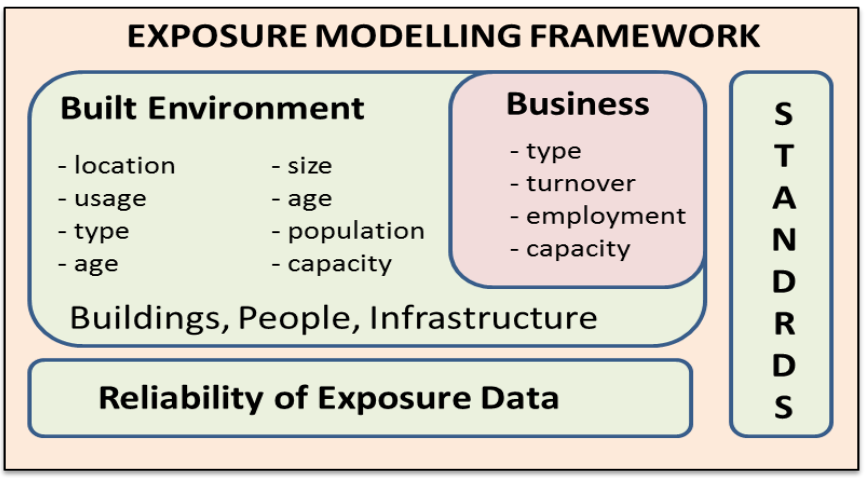
EXPOSURE IS REFERRED TO AS THE ELEMENTS AT RISK WITHIN A GIVEN AREA THAT HAVE BEEN, OR COULD BE, SUBJECT TO THE IMPACT OF NATURAL HAZARDS. THE NATURAL HAZARD EXPOSURE MODELLING FRAMEWORK AIMS TO ADDRESS THE DATA AND KNOWLEDGE GAPS AND REQUIREMENTS FOR DISASTER RESILIENCE, RESOURCE ASSESSMENT, EMERGENCY MANAGEMENT, RISK MITIGATION POLICY AND PLANNING RESEARCH THEMES IDENTIFIED BY THE BUSHFIRE AND NATURAL HAZARD CRC.

Disaster risk reduction is a systematic approach to identifying, assessing and reducing the risks from natural hazards. A disaster's severity depends on how much impact a hazard has on exposure. The scale of impact in turn depends on the decisions we make as a part of disaster mitigation. Therefore, exposure information is a fundamental requirement for decision making in disaster mitigation.

- An exposure information modelling framework is a significant step towards developing national exposure information capabilities in Australia. The framework needs to support impact assessments on people, economy, infrastructure and the environment, caused by natural hazards such as bushfires, floods, cyclones and earthquakes.
- Geoscience Australia (GA) has developed a nationally consistent exposure information capability, the 'National Exposure Information System (NEXIS)', to assist the development of risk assessment capabilities for GA's Community Safety Program. However, NEXIS is not comprehensive enough to support all hazards and levels of disaster management.
- The BNHCRC has funded research to prepare a comprehensive exposure information modelling framework. The framework will be designed to provide pathways to improve current capabilities by identifying key issues, needs, gaps, overlaps and deficiencies to enable the building of standards based exposure information capabilities in the future.



BUILT ENVIRONMENT EXPOSURE

The framework will be developed from existing national and international capabilities and incorporate requirements gathered from key users such as:

- asset location,
- buildings (residential, commercial, industrial and institutions),
- infrastructure (transport, energy, communications, water, waste management),
- population demographics.

BUSINESS - ECONOMICS EXPOSURE

To enable economic impact analysis of business disruption, research will be undertaken to develop and integrate business exposure into the framework. Information required to assess business continuity, recovery and resilience will include business type, turnover and employment

EXPOSURE INFORMATION RELIABILITY FRAMEWORK

Exposure information developed through this framework will be derived from many different sources. It is essential that users of this information are able to quantitatively assess the reliability of the data to understand elements such as accuracy, quality, currency and uncertainty measures.

NATIONAL EXPOSURE INFORMATION STANDARDS

Developing the exposure information modelling framework will provide the basis for exposure information standards and data dictionaries for implementation and reference across the sector to ensure future consistency.