

# The 2008 floods in Queensland: a case study

## Background

Heavy rains occurred in January 2008 along the Queensland coast between Townsville and Mackay and inland over central and south-western Queensland. These rains were associated with a low-pressure centre tracking southward across the state, the remnant of tropical cyclone Helen. Coastal and inland river catchments flooded. The Warrego River, which flows along the northern edge of Charleville, rose by 6m, peaking on 22 January, and Bradley’s Gully, which flows through the middle of town, rose by 3 m, peaking on 18 January.

The coastal region of Mackay experienced minor flooding in the January event. However, on 15 February, an intense and localised rainstorm produced a flash flood that damaged 4,000 houses and the local road network and caused schools to close. Power was lost to 6,200 homes and mobile and landline communications were disrupted.

## Flood management in Mackay and Charleville

### OBJECTIVES

The objectives of this project were to:

- » compare the impact of flooding, immediate response and subsequent adaptations in Charleville and Mackay;
- » understand how societies that are regularly flooded respond and adjust to flood events, and the extent of their resilience;
- » understand the characteristics of communities that are ‘on the edge’, where flooding might push them into non-viability;
- » understand the extent of flood mitigation measures (including *State Planning Policy 1/03*) that have been applied to reduce vulnerability to flood events; and
- » identify community characteristics of vulnerability, resilience and adaptive capacity with respect to flooding of households, businesses and institutions.

### METHODS

A purposive (qualitative, case study-based) sampling research design was used to conduct three phases of data collection. Each phase targeted a different group of stakeholders: household residents, businesses and government institutions.

Structured questionnaires and semi-structured face-to-face interviews were conducted. Household and business participants were restricted to those affected by the 2008 floods in the case study regions. Data were analysed using appropriate quantitative and qualitative techniques.

### KEY FINDINGS

In areas that are vulnerable to regular flooding, long-established residents with strong connections within the community, and possibly prior experience of flood events, display stronger characteristics of resilience.

### CHARLEVILLE

#### Successes:

- » A flood warning was sounded in the early hours of the morning to alert residents.
- » There was high community involvement in the management of the event and post-event clean up activities.
- » A well-coordinated response by local, state and federal governments constructed a temporary flood barrier.
- » Precautionary sandbagging was carried out and several homes were evacuated by emergency services personnel.
- » An evacuation centre was established at the showgrounds.

#### Failures:

- » Limited radio channels for accessing information.

### MACKAY

#### Successes:

- » The Queensland Fire and Rescue Service was well equipped.
- » Local radio provided a forum for communication to facilitate physical and mental recovery.

#### Failures:

- » Many emergency management staff members were unable to reach their workplaces, which were cut off by flood waters. As a result, untrained personnel were required to implement emergency management plans.
- » Telephone land lines failed and the mobile network was overloaded.

## KEY FINDINGS (continued...)

The community in Charleville is relatively stable. Residents, businesses and institutions were found to have a high sense of belonging and a commitment to remain in their community. By comparison, Mackay was found to have a more transient population with relatively lower levels of resilience, indicated by:

- » lower community participation rates, as demonstrated by lower formal volunteerism rates;
- » a greater expressed belief that individuals have a limited personal responsibility to prepare for floods; and
- » a more limited sense of belonging to the Mackay community on the part of residents, businesses and institutions.

These differences in turn affected preparedness and recovery from flooding. Some 50% of Mackay residents had not experienced a flood event. Along with a number of flood-free years running up to 2008, this resulted in lower levels of disaster preparedness and planning (e.g. planning of evacuation routes, having an emergency plan and kits, etc.) among many residents. In comparison the Charleville community has a history of being active in sourcing information on flood risk, and was better prepared for the event.

Figure 1 (right) demonstrates clearly that, although Mackay residents were not as well prepared as Charleville residents in 2008, they were very open to improving their resilience, with relatively higher numbers (compared to Charleville) planning to seek information and improve insurance cover.

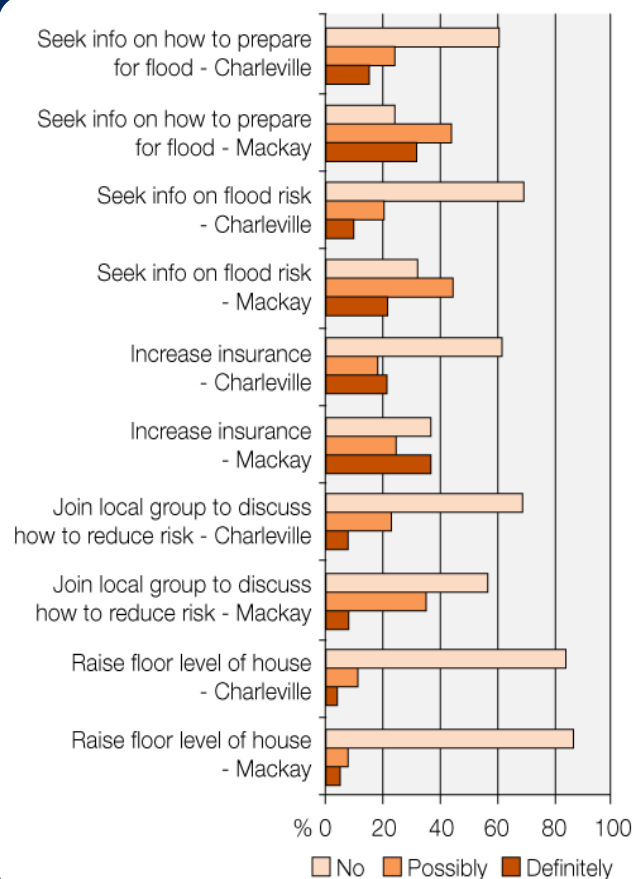


Figure 1: Adaptation activities residents intend to undertake as a result of the 2008 floods

## Recommendations for increasing resilience to floods

### Resilience to floods can be increased by:

- » **Facilitating community involvement in volunteer organisations** and identifying vulnerable community members.
- » **Providing education, information and communication campaigns** to address community inexperience and indifference.
- » **Developing emergency management plans that can be implemented by unskilled personnel** if key staff are unable to attend.

**Afterword:** Events in Queensland since the 2008 floods have shown the increasing vulnerability of communities to flooding, exacerbated by rising insurance premiums and withdrawal of insurance cover in some locations. If it is impossible for households and businesses to obtain insurance, either because it is unaffordable or not offered, this calls into question the long-term viability of the community. People will begin to leave, and businesses to close, with the more able departing first. It would be a valuable exercise to explore, with commercial insurers, the potential to offer tailored and affordable flood insurance products, possibly in private-public partnership, in areas that are frequently affected by floods.

This document summarises key findings from the NCCARF report *The 2008 Floods in Queensland: A Case Study of Vulnerability, Resilience, and Adaptive Capacity*. The project was funded by NCCARF and led by Armando Apan, The University of Southern Queensland. The full report is available at:

[www.nccarf.edu.au/publications/2008-floods-queensland-case-study-vulnerability-resilience-and-adaptive-capacity](http://www.nccarf.edu.au/publications/2008-floods-queensland-case-study-vulnerability-resilience-and-adaptive-capacity)

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