FACT SHEET 4

Economics



Aquatic Paradise Park West, Birkdale

The role of economics

Economic analysis is important for determining the best approach to coastal hazard adaptation in different regions.

Economic analysis is used in several ways, including to:

- Value assets and key industries
- Define a base case (cost of no additional action)
- Assess adaptation options

Valuing assets and industries

The first step in an economic analysis is to define the monetary value of assets and key industries across a region.

Value is assessed for a range of assets, including:

- **The built environment:** including public and private infrastructure, buildings and services
- **The natural environment:** examples include unique coastal landforms, vegetation communities, mangroves, wetlands, endangered species and culturally significant sites.

The value of key industries to the economy is also examined. For Redland City Council, this includes:

- the tourism industry, and
- the recreation industry

Economists collate a range of information from existing and new data and studies to inform an understanding of the value of assets and industries.

Economic base case

The next step of an economic assessment in coastal hazard adaptation is to define a base case. This means determining the potential economic costs or losses associated with coastal hazards (and no additional adaptation). This becomes the baseline for a cost-benefit assessment of implementing adaptation options.

A base case is determined by examining the likelihood and consequence ($ damage) of coastal hazard impacts on assets across the region, and at different timeframes (e.g. present-day, 2040, 2070, 2100).

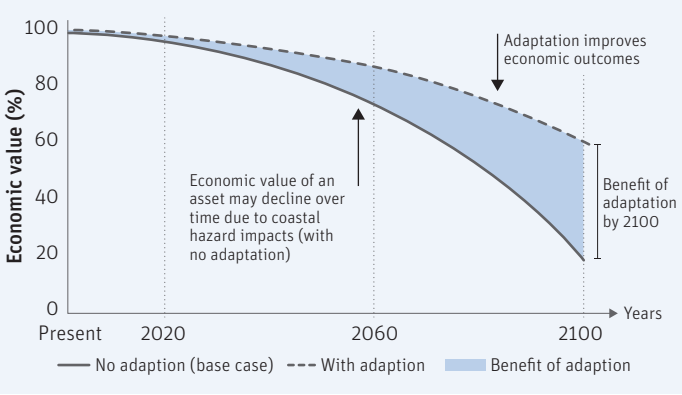


Figure 1. Economic benefits of adaptation actions

It is important to consider the change in economic value over the long term, both with no additional adaptation (the base case) and for various new adaptation options. As Figure 1 shows, over the long term, the economic benefit of adaptation can be substantial.

Assessing adaptation options

The benefit of adaptation options can be assessed using multi-criteria and cost-benefit analysis techniques. Where sufficient data is available, a cost-benefit analysis is the preferred approach.

Multi-criteria analysis

A multi-criteria analysis (MCA) is a tool for refining a list of suitable adaptation options. The aim of a multi-criteria analysis is not to pick the best option, but to screen the options and find those that are:

- Effective at reducing risk
- Feasible for the given location
- Acceptable to the community
- Cost-effective

Cost-benefit analysis

A cost-benefit analysis (CBA) is more detailed than a multi-criteria analysis. In this type of assessment, economists look at all the advantages or benefits of implementing an adaptation option, and compare them to the disadvantages or costs of the same option.

Once the costs and benefits of each option have been assessed, decisions can be made on which option or combination of options provide the greatest benefit for the lowest cost.



Pros

The main **benefit** of an adaptation option will be the reduced risk of inundation and/or erosion, however benefits can also include:

- Increased engagement and community involvement
- Better awareness of coastal hazards
- Increased tourism and business opportunities
- Protection of natural assets and cultural resources
- Decreased insurance premiums

Cons

Costs include not only the upfront cost of construction or implementation, but could also include:

- Impact on businesses, the environment, ecology or cultural values
- Reduction in visual appeal of the area
- Ongoing maintenance and monitoring
- Reduced recreational opportunities

The development of the Redland City Council Coastal Hazard Adaptation Strategy has been supported by a tailored economic analysis. This includes appraising built and natural assets across the city, defining an economic base case, developing a multi-criteria analysis for screening adaptation options, and tailoring a cost-benefit analysis of adaptation options to inform decision making from present-day to 2100.

your say coastal hazard adaptation strategy

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