

RESILIENT COAST

DOUGLAS SHIRE COUNCIL

THE ROLE OF ECONOMICS

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

Economics is used in several ways including to:

- Value assets and key industries
- Define a base case (cost of no 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 Douglas Shire this includes:

- **The agriculture industry**
- **The tourism and 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 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, 2060, 2100).

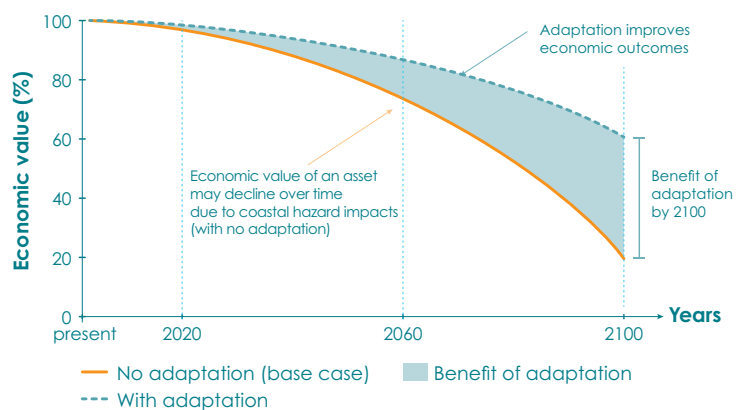


FIGURE 1: Economic benefits of adaptation actions

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

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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.



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.



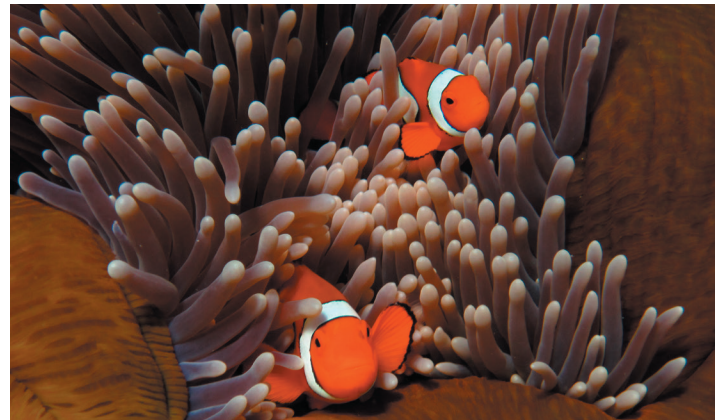
The main **benefit** of an adaptation option will be the reduced risk of inundation and/or erosion, however benefits can also include:

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



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



FACT SHEETS IN THIS SERIES:

- Terminology
- Coastal landscape
- Coastal hazards
- Coastal adaptation
- Adaptation framework
- Resilient homes
- Economics

MORE INFORMATION ON COASTAL HAZARD ADAPTATION CAN BE FOUND AT:

- ✓ Coast Adapt: <https://coastadapt.com.au/>
- ✓ QCoast2100: <http://www.qcoast2100.com.au/useful-info>