

CoastAdapt case study evaluation



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Job number: 253862-00

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Published by the

**National Climate Change Adaptation
Research Facility 2017**

ISBN: 978-0-9946054-3-6

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Please cite this report as:

Brussen, K., Sarsons, L., Ko, J. 2017: CoastAdapt case study evaluation.


National Climate Change Adaptation Research Facility, Gold Coast.

Acknowledgement

This work was carried out with financial support from the Australian Government (Department of the Environment and Energy).

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Contents

	Page
1 Introduction	1
1.1 Project approach	1
2 Evaluation framework	2
2.1 Evaluation framework limitations	3
3 Case study evaluation	5
3.1 Assessment against evaluation framework	5
3.2 Results	7
3.3 Additional factors of success	8
3.4 Common barriers	10
3.5 Lessons learnt	11
4 Overall appraisal of case studies	13
4.1 What makes a good case study	14
4.2 Presentation of case studies	17
5 Recommendations	20
 Appendix A	
Case study assessment data	21

1 Introduction

CoastAdapt is an online resource that provides information to support coastal climate risk management and adaptation. Information available through CoastAdapt includes climate science data, tools to support adaptation planning, good practice guidance and case studies, which are the subject of this study.

This report summarises the outcomes of an evaluation of the case studies available on CoastAdapt. There are currently 67 case studies available¹, in both written and video formats of varying lengths. This report includes the following sections, which document the key findings of the study:

- **Section 1** provides an introduction and a summary of the project approach
- **Section 2** introduces the evaluation framework, which includes criteria relating to best practice adaptation and community development
- **Section 3** summarises the key findings of the case study evaluation, including discussion of factors of success, barriers and lessons learnt
- **Section 4** draws together the evaluation finding to provide an overall appraisal of the value of the case studies as a resource
- **Section 5** provides recommendations to improve the accessibility and useability of the case studies.

1.1 Project approach

The project approach is shown in Figure 1 below. The key project tasks include:

1. Establish an evaluation **framework** to identify both factors for success and limitations and barriers to effective adaptation.
2. **Review** the 67 CoastAdapt case studies against the evaluation framework, drawing out common themes and barriers experienced by case study actors.
3. Undertake **interviews** with five case study actors to seek feedback on the value of case studies and the desktop review findings.
4. Develop a **report** to communicate the findings to NCCARF.



Figure 1: Project approach overview

¹ As at June 2017

2 Evaluation framework

The 67 case studies were assessed against an evaluation framework consisting of thirteen criteria: seven relating directly to best practice adaptation principles and a further six addressing key elements of community development, as outlined in Table 1. Adaptation and practitioner literature and experience identify a range of considerations and guiding principles that lead to good adaptation, and this study has drawn on these as a basis for evaluating the CoastAdapt case studies^{2,3,4,5,6,7}.

The framework provided objective criteria for assessment, which assisted in determining the relative performance of each case study.

Table 1 Evaluation criteria

Factor	Explanation	Assessed for planning-based case studies	Assessed for action-based case studies
Adaptation factors			
1. Delivers multiple benefits	Are there other benefits apart from climate risk management? (e.g. community benefits, health and wellbeing). Does it deliver benefits under multiple futures? (i.e. if certain impacts did not occur).		✓
2. Considers all / multiple hazards	Does the project address many if not all climate impacts, rather than just one? (i.e. bushfire, sea-level rise, extreme weather, flooding, drought, etc.).		✓
3. Flexible and robust	Do the actions exclude other adaptation actions in the future or can they be altered if need be?		✓
4. Practical to implement and maintain	Is the project practical to implement and maintain?		✓
5. Unintended negative consequences	Does the project lead to any unintended negative consequences?		✓
6. Lead to substantial increases in greenhouse gas emissions	Does the project avoid additional greenhouse gas emissions?		✓

² Identifying adaptation options, United Kingdom Climate Impact Programme, http://www.ukcip.org.uk/wordpress/wp-content/PDFs/ID_Adapt_options.pdf

³ Fünfgeld, H. (2012): Local climate change adaptation planning: a guide for government policy and decision makers in Victoria. Melbourne: Victorian Centre for Climate Change Adaptation Research (VCCCAR).

⁴ Prospering in a changing climate: A climate change adaptation framework for South Australia, 2012, Department of Environment, Water and Natural Resources.

⁵ Victoria's Climate Change Adaptation Plan 2017-2020, 2017, Department of Environment, Land, Water and Planning.

⁶ National Climate Resilience and Adaptation Strategy, 2015, Commonwealth of Australia.

Climate change adaptation toolkit – A comprehensive guide to planning for climate change adaptation in three steps, Netbalance, RMIT, City of Greater Geelong

⁷ Great Barrier Reef Marine Park Authority and the National Climate Change Adaptation Research Facility (2011). Climate change adaptation principles: Bringing adaptation to life in the marine biodiversity and resources setting. Great Barrier Reef Park Authority, Townsville.

Factor	Explanation	Assessed for planning-based case studies	Assessed for action-based case studies
7. Cost effectiveness	Are the actions cost effective? Does the project consider the cost of adaptation action and the cost of impacts avoided?		✓
Community development			
8. Takes a partnership approach / builds consensus	Was the project undertaken in partnership with others? Was this a collaborative project?	✓	✓
9. Builds resilience and adaptive capacity, particularly at community level	Does the project build capacity of individuals, communities, organisations to respond to the impacts of climate change?	✓	✓
10. Demonstrates commitment and leadership	Does the project demonstrate leadership?	✓	✓
11. Provides flexibility to meet local needs	Are the project outcomes flexible to the specific needs of the local community?	✓	✓
12. Adaptation principles planning phase	Does the project consider the above adaptation principles in the planning/design phase?	✓	✓
13. Vulnerability assessment / risk assessment	Does the vulnerability assessment identify exposure, sensitivity and adaptive capacity? (Or risk assessment consider likelihood and consequence?)	✓	✓

The review initially identified that not all projects implemented adaptation measures. Twenty five case studies did not implement any tangible adaptation measures and therefore they were not assessed against the seven adaptation factors which were specifically designed to evaluate adaptation interventions.

A three level scoring system was used to evaluate each of the CoastAdapt case studies. This system provides a simple, user friendly assessment of case studies across three dimensions:

- Positive – positive impact(s) on adaptation outcomes
- Neutral – neutral impact(s) on adaptation outcomes
- Negative – negative impact(s) on adaptation outcomes or case study does not address this criteria.

2.1 Evaluation framework limitations

We noted the following limitations that influenced the application of the evaluation framework and results of the assessment:

1. This assessment is an arms-length evaluation and is not targeted to the specific context of each case study. In some instances there are limited adaptation options available, and those available to a community might not ideally meet the defined adaptation factors.

2. The framework helps to assess dimensions of successful projects, which differ from factors associated with good case studies. Characteristics of good case studies are discussed in Section 4.1. Examples of good case studies which did not score well across the key adaptation factors include:
- *North Norfolk Pathfinder project.* This case study describes a rollback scheme where development was moved away from erosion zones through a buy-back of properties at market value. This program faced some challenges including residents not being able to purchase a home elsewhere due to the low market value of their previous homes. While the project does not address a number of adaptation factors in the assessment framework (particularly in relation to flexibility), it is a valuable case study as it is one of the few case studies to discuss implementation of 'hard'⁸ adaptation actions and the clear lessons learnt through the process.
 - *The Witness King Tides project: a creative way for the community to imagine climate risks.* This case study describes a unique approach to involving the community in generating data while concurrently enabling them to understand climate impacts. While the project did not undertake planning or implementation of adaptation action, the case study provides replicable insights into community engagement approaches and the need for education and sensitisation of the impacts of climate change in driving adaptation action.

⁸ 'Hard' adaptation actions refer to actions that require the construction of physical infrastructure or interventions.

3 Case study evaluation

3.1 Assessment against evaluation framework

The proportion of case studies that address key adaptation success factors are summarised in Table 2. The first column details the overall proportion and number of studies rated as addressing each factor, while the second column presents the same analysis undertaken for the action-based case studies.

Table 2: Proportion of case studies rated as addressing the factor of success for each evaluation criterion.

Factor	Proportion of all case studies rated as addressing success factor (n=67)	Proportion of action-based case studies rated as addressing success factor (n=42)
Adaptation factors		
1. Delivers multiple benefits	39% (26)	62% (26)
2. Considers all / multiple hazards	34% (23)	55% (23)
3. Flexible and robust	48% (32)	76% (32)
4. Practical to implement and maintain	42% (28)	67% (28)
5. Unintended negative consequences	34% (23)	55% (23)
6. Lead to substantial increases in greenhouse gas emissions	3% (2)	5% (2)
7. Cost effectiveness	15% (10)	24% (10)
Community development		
8. Takes a partnership approach / builds consensus	43% (29)	48% (20)
9. Builds resilience and adaptive capacity, particularly at community level	54% (36)	69% (29)
10. Demonstrates commitment and leadership	63% (42)	76% (32)
11. Provides flexibility to meet local needs	30% (20)	38% (16)
12. Adaptation principles planning phase	60% (40)	69% (29)
13. Vulnerability assessment / risk assessment	51% (34)	60% (25)

The distribution of positive, neutral and negative scores across each of the adaptation factors is represented in **Figure 2**.

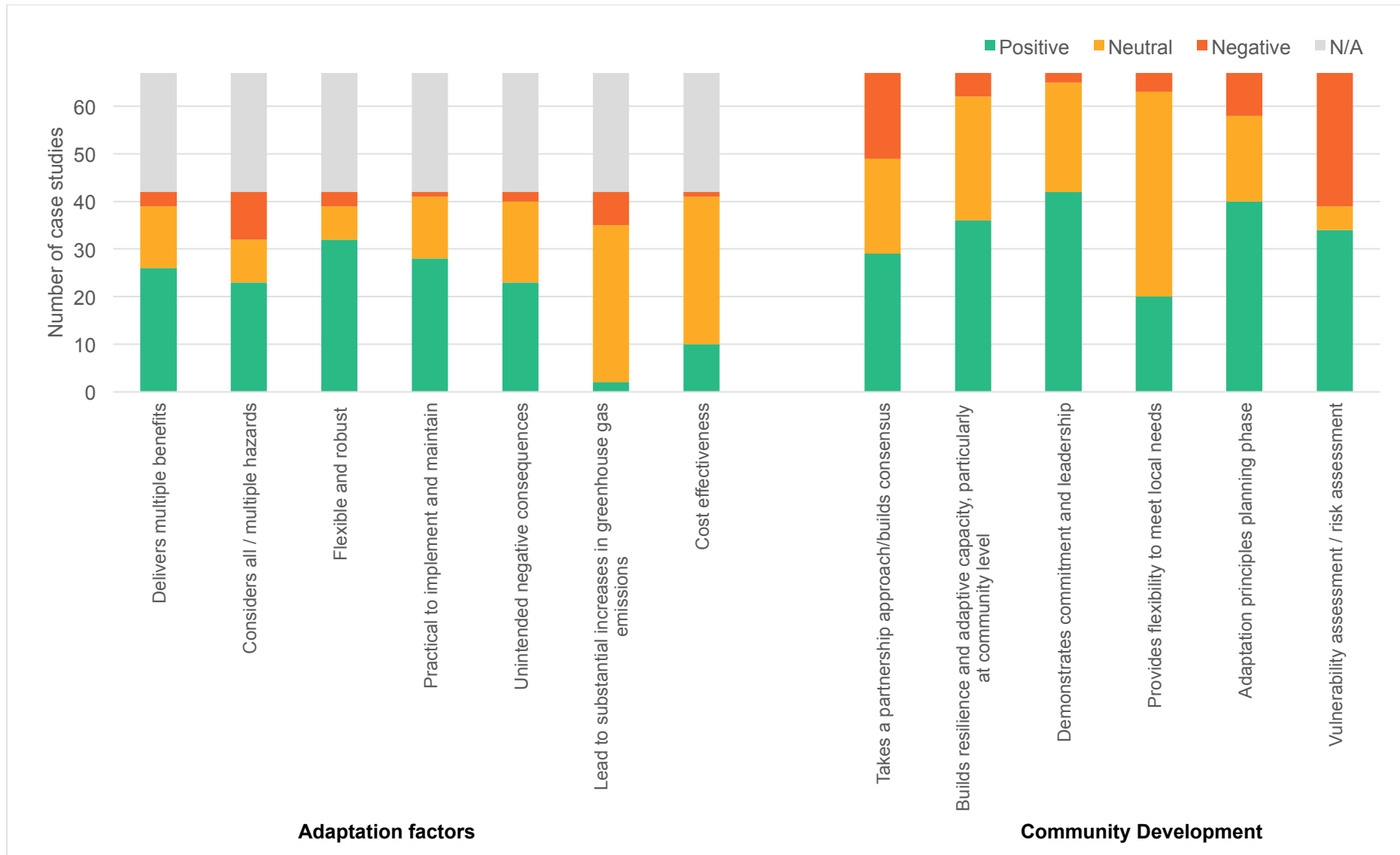


Figure 2: Assessment of CoastAdapt case studies against evaluation criteria, including *adaptation factors* and *community development*

The number of positive scores achieved by each case study can be used as a measure of how well that case study demonstrates a robust approach to adaptation. Of the case studies reviewed, none achieved a positive score across all 13 criteria, although two achieved positive scores for 12 of the 13 factors (refer to Figure 3 below).

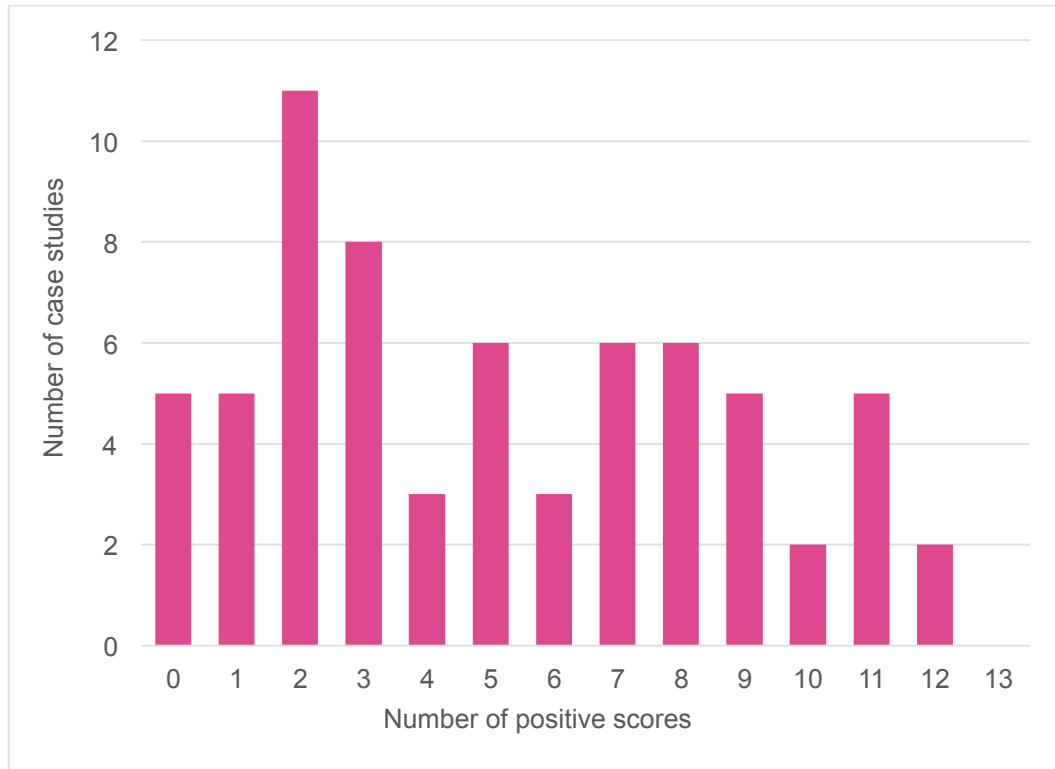


Figure 3: Distribution of case studies achieving positive scores

As 25 case studies were not assessed against the adaptation criteria the mean distribution of positive scores in Figure 3 was 5.1. There were nine case studies that were rated as positive against 10 or more criteria, and 5 case studies that were not evaluated as positive against any criteria (refer to Section 4.1).

The success factor most common across all case studies was the demonstration of commitment and leadership. Many projects by virtue of taking proactive steps to address the impacts of climate are demonstrating this leadership and commitment.

3.2 Results

The evaluation framework sets out 13 key factors for successful adaptation projects as a basis for evaluating the CoastAdapt case studies. These principles of adaptation and community development play an important role in project success.

We found that a significant proportion of projects that implemented adaptation actions addressed many of the key adaptation factors. In fact 76% of those projects were flexible and robust, 67% were practical to

implement, 62% delivered multiple benefits beyond adaptation and 55% considered multiple hazards and 55% avoided unintended negative consequence. We found that around a quarter (24%) of projects considered cost effectiveness (the cost of adaptation versus the cost of impact avoided) and only 5% of projects avoided producing additional greenhouse gas.

Across all projects we found that 63% demonstrated commitment and leadership, 60% considered adaptation principles within the planning phase, 54% built resilience and adaptive capacity, particularly at the community level, and 51% undertook a vulnerability or risk assessment process.

The evaluation also found that although 43% of projects were found to take a partnership approach or built consensus, there were a further 27% that did not (30% neutral). These projects were also found to rate lower overall, achieving an average of only 3.9 positive scores compared with 6.6 for those that took a partnership approach.

It is plausible that if projects do not take a partnership approach then they are less likely to achieve other factors of success. The correlation between different success factors is an area for further investigation and testing.

3.3 Additional factors of success

Case study documentation

In addition to the factors identified in the framework, we identified the following additional key themes across the case studies:

- The value of **stakeholder participation and direct communication** with the impacted community. Examples of this include pursuing stakeholder input through workshops and decision-making, and community participation in management activities such as coastal monitoring. *Linked to factor 8: Takes a partnership approach / buildings consensus.*
- The importance of **local knowledge** and tailoring a project to the local context. *Linked to factor 11: Provides flexibility to meet local needs.*
- Including climate change planning in business-as-usual planning approaches and **embedding adaptation** considerations into business processes. This enables adaptation to add value to an organisation rather than becoming a separate process. *Linked to factor 4: Practical to implement and maintain.*
- Having the right **technical capability and expertise**. It is evident that many organisations including local councils value external expert knowledge of consultants, universities and other expert practitioners to undertake climate risk assessments, modelling and strategy development. This may indicate a lack of sufficient organisational skills or capability or reflect the emerging nature and complexity of climate

change adaptation. There is the potential for further research to explore this question.

Interviews

In addition to reviewing the published case studies we interviewed individuals involved with the implementation of five of the case studies⁹. Interview participants were selected on the basis of delivering a diversity of perspectives. There were case studies from a range of geographic locations, focus areas, and organisational types represented. Interviewees noted various factors not identified within the case studies that contributed to the success of projects including:

- Understanding the climate change impacts that will affect the area and communicating these effectively to the local community and participants in adaptation planning processes. **Breaking down the issues** enables stakeholders to understand how these impacts affect them and to identify where changes are already occurring, which encourages them to take ownership for the planning process. *Linked to factor 13: Vulnerability assessment /risk assessment.*
- Similarly, bringing tangible impacts of climate change into focus makes it easier for people to consider climate impacts as an **immediate concern**. This makes it easier for people to think beyond the normal timeframes for planning.
- **Targeting influential community members** to gain their support and buy-in for the project. Communicating individually with key stakeholders is an effective approach, however it was recognised that this is time consuming and less suitable for larger scale projects.
- Similarly, within businesses and organisations **strong leadership** contributes to success by having key people in positions of influence that can drive change and make things happen. A formalised mandate from senior leadership that is then integrated into the risk register for the organisation provides an impetus and structure for responding to climate change. *Linked to 10: Demonstrates commitment and leadership.*
- It is necessary to have sufficient **resources and time** available to carry out the project. Engaging stakeholders and building community understanding of the value of adaptation can be a difficult process, requiring significant investments of time and resources. Where organisations face limitations on these, it can present major barriers to success.

⁹ The following case study actors were interviewed as part of this study:

- John Rainbird - Adapting to sea level rise in the Torres Strait
- Katrina Luckie and Donna Kildea - Summerland Credit Union
- Carol Muzyk - Middle Beach Community Emergency Management Plan
- Eric Woehler - Impact of sea level rise on coastal natural values in Tasmania
- Karl Mallon - AdaptWater: A climate change adaptation tool for the urban water industry

- **Recognition of the different values that are present** and threatened by the impacts of climate change. Stakeholder appreciation for the environmental, social and economic values under threat from climate change is important to understanding what is at stake and catalysing action. Often the value of adaptation actions is framed in economic terms including potential damage costs, loss avoided and/or the cost of investment in interventions. Social and environmental values are also important factors to consider in adaptation deliberations, including health, wellbeing and recreation, social connectedness, physical amenity and biodiversity among others.
- **Data sharing and transparency of processes** to ensure projects are replicable and provide confidence in the results. Case studies should be clear about the processes, tools, and data utilised by organisations in their project. Not only will this allow others to reproduce and build on the successes of those that came before them, but it will also help to strengthen the overall quality and robustness of CoastAdapt case studies.
- **Collaboration and partnerships** to take advantage of the different resources and capabilities available to different parties and their willingness to engage in the project.

One interviewee commented on the difference between success in planning adaptation compared to success in implementation, noting that it is possible to have a great planning process that leads to nothing. This point is particularly pertinent in relation to the CoastAdapt case studies, as 25 of the case studies relate to projects in the planning phase. It would increase the value of these case studies to follow up with the actors and determine what has been implemented as a result of the planning processes highlighted.

Recommendation 1: Schedule regular updates of case studies to include details of project implementation, particularly for those case studies that discuss a planning process.

3.4 Common barriers

Case study documentation

While the case studies broadly focussed on the successes of projects, we identified the following themes regarding barriers to implementing adaptation projects:

- **Difficulty gaining community agreement** and buy in for ‘hard’ adaptation options such as retreat. This was addressed differently among the case studies. In one example transitional measures such as sandbagging were adopted while ongoing planning and engagement continued. In another case, relocation had not occurred although the trigger point in the planning controls had been reached (the case study

did not discuss how this has been addressed, however it demonstrates the difficulty in implementing 'hard' adaptation options).

- Issues with **integrating adaptation into planning** – including short term planning cycles for councils and project timeframes not lining up with planning timeframes.

Interviews

While barriers (and lessons learnt, see below) are not discussed in many of the published case studies, the interviews with case study actors revealed abundant information regarding barriers they experienced. These included:

- **Conflicting interests** where residents in affected communities did not want to acknowledge the impacts of climate change in order to avoid impacts to property prices in the area and protect their investments.
- **Detailed data** is lacking in many areas, making it difficult to complete site-specific analyses.
- **Lack of funds**. One interviewee noted the long process to pull together sufficient funds for large infrastructure interventions. Another noted the difficulty in directing limited funding to adaptation projects and the need to align them with the strategic direction of the organisation.
- **Institutional barriers** such as inflexible and over-complicated structures, where people are unwilling (or unable due to workload) to do things that are outside the usual scope of their role.
- **Politicisation** of climate change.
- **Continuity** and follow through to implementation on projects, particularly where a strategy is developed using external consultant expertise.

3.5 Lessons learnt

In a similar manner to barriers, a relatively small number of case studies explicitly articulated the lessons learnt from their project. These included:

- **Ongoing monitoring and evaluation** would benefit many case studies. Some have noted this as a lesson they have learnt themselves. In other cases we identified that it would be useful include some evaluation information in the case study to validate the results of a planning project.
- It is necessary to **prioritise time and resources** to undertake planning and actions relating to adaptation, particularly where it is outside current business-as-usual practices.

The interviewees detailed additional lessons learnt, which included:

- Recognising the value of **flexibility in approach**, whereby an alternative approach could be taken if one did not work. A one-size-fits-all approach does not exist for climate adaptation. Each project needs to be tailored to the location and community needs.
- **Involve managers** in relevant areas so that there is buy-in from the organisation leadership. A program is more likely to success if it is driven from the top down rather than just through an environmental team.
- It requires **persistence to keep people engaged** with a project, particularly as people are constantly pulled to the current crisis. To prevent this it is necessary to build time and resources into programs.
- It is necessary to **show the value** of a project, based on cost-benefit analysis.
- In sectors where environmental impacts have not traditionally been considered, it requires a **change of mindset** to begin to build climate change considerations into processes. This requires building it into the culture and attitudes of the organisation.

4 Overall appraisal of case studies

The case studies available through CoastAdapt represent a great diversity of climate risk management and adaptation projects. They include projects in different sectors, locations and stages, from early pre-planning to the implementation of management actions.

Overall the case studies presented were assessed to be of high quality. Although close to 40% did not implement a specific intervention, there were many examples of projects that demonstrated commitment and leadership, were guided by principles of adaptation within their planning phase and built resilience and adaptive capacity of their communities. Those projects delivering tangible interventions were conscious of the need for utilising measure that were flexible and robust, practical to implement and delivered benefits beyond adapting to climate change.

Although the standard of case studies was generally high, there were a number of exceptions. The inclusion of these case studies results in the dilution of the overall quality and making it difficult to identify those worth reviewing. It is recommended that the lower quality case studies are either refined or removed in order to maintain a portal of cohesive and uniformly high quality case studies. The case studies that were rated as the highest and lowest quality are articulated in Box 1 and Box 2.

Recommendation 2: Low quality case studies be refined or removed to ensure the overall quality is maintained.

Based on the interviews, project owners considered these case studies as a highly valued resource. Key benefits of using case studies as a knowledge-sharing tool include:

- raising awareness of initiatives that have been implemented in different geographical regions, linking adaptation practitioners
- providing validation of ideas and strategies that are new to a particular organisation or area but have been implemented elsewhere
- showing tangible examples of adaptation theory in practice
- as a communication and training tool to aid with understanding a concept that would otherwise be completely new.

The case studies demonstrate value as a collection, beyond that demonstrated by themselves. The online portal showcases a diversity of contrasting approaches to address similar issues, as well as lessons learnt and barriers encountered. Where one case study may only detail a certain pathway to adaptation, a series of case studies provides the opportunity to understand different pathways and perspectives, giving a broader understanding of issues that may be faced in implementation.

In general the case studies were easy to read and understand. However the variable consistency in formatting and writing style creates difficulty in

drawing out success factors, as some case studies provided varying degrees of detail.

Although it was expected that case studies would focus on coastal climate risks including coastal erosion, storm surge and extreme weather events, there were some notable examples that also considered a full range of climate risks as part of a thorough vulnerability or risk assessment process. Highlighting these projects through a searchable keyword tag, would promote a multi-hazards approach to risk assessment and may encourage others practitioners to adopt similar methods in their work (refer to Recommendation 6)

There was a good diversity of geographic locations represented in the case studies. There were multiple case studies from each state, and also national and international examples. There was a slight bias towards the east coast, in NSW and Queensland. This may be in part attributed to the more recent string of significant disaster events (floods 2010-11, Cyclone Yasi 2011, Cyclone Larry 2006), bringing the realities of climate change to communities' immediate attention. These have provided excellent case studies to bring to the public attention and document the experience on CoastAdapt.

4.1 What makes a good case study

Throughout our review we noted that there are different elements that make a useful case study, beyond the recognised factors of adaptation success. Unsuccessful projects also make good case studies, as they provide an opportunity for learning, knowledge sharing and skills development around aspects of the project that were difficult and encountered barriers.

General characteristics of a good case study include:

- A clearly documented case study where a reader (or viewer) can understand what has taken place.
- Clear lessons learnt – there is value in identifying and understanding the lessons learnt in projects in unsuccessful projects and projects that did not align with all the factors of adaptation success.
- Follow through – for some case studies it is unclear what happened following the publication of the case study. It would be valuable to be able to follow up with case study actors through regular updates to the case studies (see Recommendation 1) and through direct contact (see Recommendation 4).
- Projects that are directly relevant to the reader as follows¹⁰:
 - Projects located in geographically similar locations.
 - Projects facing similar climate risk(s).

¹⁰ Note however that there is potential for approaches to be adapted across projects of different locations, climate risks, size and industry.

- Projects are of a similar size/characteristics.
- Projects that are undertaken in a similar industry and operational context.
- Commonality in values e.g. natural or human values.
- People and organisations/companies doing something innovatively.
- Clearly written approach that can be replicated – this would be supported by the ability to contact case study actors and access the same resources and expertise that was used in a case study project.
- Validated through an endorsement system.
- Simple, well presented format.
- Easily accessible and easy to find.

Case studies provide value as learning and knowledge sharing tools. They allow adaptation practitioners to build on adaptation best practice that has already been achieved, rather than reinventing processes and practices. Refining successful approaches to adaptation improves the impact of future projects.

Hosting a collective of case studies through a peer-learning platform like CoastAdapt builds a skills network for adaptation practitioners across Australia. Providing case studies that demonstrate the qualities outlined above will enhance the effectiveness of the platform.

Recommendation 3: Develop a case study template which outlines a structure to include content that is important to practitioners including:

- barriers encountered
- lessons learnt
- clear documentation of the steps undertaken in the project
- description of innovative practices.

Recommendation 4: Develop case studies that appeal to practitioners because of their direct relevance. Practitioners are likely to judge relevance based on whether case studies:

- are located in geographically similar locations
- face similar climate risk(s)
- share similar size/characteristics
- take place in a similar industry and operational context
- share common values e.g. natural or human values.

Note: All case studies cannot be relevant to all practitioners; the goal is to compile a collection of case studies, which in their totality, address the concerns and goals of Australia's community of adaptors.

Recommendation 5: Make available contact details of the case study actors so that they can be contacted for more detail and to troubleshoot issues.

This should not be mandatory, however each interviewee indicated that they would be pleased to discuss their case study with others.

Box 1: Case study highlights | What elements make a successful case study?

The following list outlines exemplary case studies that display both the features of a good case study and the factors of adaptation success:

1. *Northern Beaches all Hazards historic photograph exhibition and workshops*
This case study demonstrated an innovative approach to community engagement with a historic photo exhibition held alongside disaster planning workshops.
2. *Cyclone Yasi - communities building disaster resilience*
This case study discusses practical examples of proactive initiatives undertaken by communities to prepare for cyclones.
3. *Adapt between the flags: The experience of Surf Life Saving Australia (SLSA)*
A key strength of the project was stakeholder engagement, with workshops held to evaluate the adaptive capacity.
4. *Old ways for new challenges: Indigenous Adaptation to Climate Change*
A series of varied and independent approaches to climate change mitigation and adaptation are presented in this case study, demonstrating the strength of leveraging indigenous knowledge to address climate challenges.
5. *Cockburn Sound Coastal Alliance: Partnering to address climate change risks*
In addition to the strong partnership approach, this case study showed how hazard planning has been integrated into design and planning frameworks.
6. *Defend Port Fairy*
Well-presented case study that outlines the robust investigation studies undertaken and implementation of adaptation options.
7. *Planning to adapt – the Marks Point and Belmont South Local Adaptation Plan*
One of the few case studies to recognise its own limitations and challenges, this case study details the process and community involvement in developing a local adaptation plan.
8. *A case study of good coastal adaptation on the Hunter River, NSW*
This case study demonstrated a strong scientific basis for adaptation, describing restoration works based on adaptive capacity modelling.
9. *Clarence City Council's coastal adaptation pathway*
This case study provided a clear outline of the adaptation approach adopted through planning and implementation, including recognition of lessons learnt.
10. *The Eyre Peninsula: A case study of effective adaptation policy making and support*
Benefits of a robust adaptation planning process based on adaptation pathways, such as reduced complexity in adaptation planning, are highlighted in this case study.

Box 2: Case study lowlights | What elements make a case study less useful?

The following case studies did not score positively on any of the factors of adaptation success:

1. *City of Joondalup engaging with its community on coastal vulnerability*
This case study does not provide a clear evaluation of outcomes. It is unclear whether the approach outlined is best practice or a standard communication plan.
2. *The Climate Change in Australia website: a useful resource to support adaptation*
This case study summarises resources available rather than an adaptation project.
3. *Barriers to adaptation action: a perspective from decision-makers*
This case study does not discuss adaptation planning or action implementation, and as a result does not align well with the factors of adaptation success identified in the evaluation framework. While this is valuable information (particularly given that few of the case studies consider barriers), it may not be an appropriate location for it.
4. *Coastal climate impacts and responses in the Darwin Region*
The video highlights challenges associated with climate change impacts and areas that need to be addressed, however it does not discuss adaptation action or planning that has occurred.
5. *Modelling of combined storm-tide and riverine flooding under sea-level rise: the case of Busselton, Western Australia*
This case study outlines modelling that could be used in adaptation planning, but does not discuss any adaptation planning processes.

4.2 Presentation of case studies

Currently the 67 case studies are available in a list format on the CoastAdapt website. The case studies are presented in a list of categorised links to PDF documents and embedded videos. It is also possible to use a map feature to filter the case studies by location (as shown in Figure 4).

Home > Resource centre > Case studies

Case studies

CoastAdapt provides a compendium of case studies from Australia and abroad to illustrate what coastal practitioners and decision makers are doing to adapt to a changing climate. They describe real-world adaptation planning and actions and provide insights into lessons learned, effective strategies and potential pitfalls. Case studies in CoastAdapt are organised under 13 categories to help you find something to match your interests. There are brief snapshots, longer full case studies and engaging videos.



Real-life test cases of CoastAdapt performance

A simple start on the coastal adaptation journey for District Council of Robe, SA

PDF 348.66 KB ☆

Objective: To use CoastAdapt to undertake a preliminary scoping study to identify existing and potential coastal hazards and their possible impacts, with a focus on tourism

Barwon South West: Testing the application of CoastAdapt's: Working with consultants information

PDF 413.93 KB ☆

Objective: To test the capacity of CoastAdapt to provide support to the Council in undertaking a procurement process for climate change coastal assessment services

Figure 4: Case study web page

This section outlines suggested changes to the web page presentation interface to make the case studies more accessible to users. There are 67 case studies of varying quality available through the portal. Each case study is three to ten pages long for a written report, and up to approximately 10 minutes for a video.

As users are likely to access only a selection of the case studies, the recommendations are aimed at ensuring users are able to access the most relevant and informative case studies quickly and easily.

- There are currently too many case studies on the website and as a result the good case studies can be lost. Some of the case studies that performed the best across the evaluation framework criteria and are highlighted in Section 4.1 have the fewest page views (e.g. *Adapt between the flags: The experience of Surf Life Saving Australia* has 30 page views). We suggest that the case studies which do not demonstrate the key factors of success or have value from the perspective of lessons learnt be refined or removed from the website.
- Each case study has currently been assigned a series of keywords. To enhance the searchability, each case study could be tagged with the keywords, which could then be used to filter case studies and link related case studies. Consistent keywords should also be applied in the case study development to facilitate this process.
- The map filters enable search for case studies at a state scale. This functionality could be extended to include mapping of the exact location of each case study, so that adaptation practitioners could easily locate case studies in a similar location.
- Different case studies will appeal to different audiences. For example, organisations that are just getting started on their adaptation journey will have a different base level of understanding compared to an

organisation that has done some planning but is now looking to implementation. Keywords and filters could be used to provide differentiation between case studies that would be useful in different stages of the process.

- The website could be made more interactive by setting up tiles for each of the case studies that have a drop down preview summary of the case study that can be accessed without opening the full PDF of each case study. This would enable users to preview a larger number of case studies and access the full detail available in the case studies of greatest relevance. This would improve the visual appeal of browsing through the case studies. An example of this type of approach can be seen in Figure 5.
- Currently most of the case studies include a summary. These should include the key take-home messages from each of the case studies to ensure that critical information can be easily identified.

Recommendation 6: Adjust the presentation of case studies to incorporate searchable keywords, filtering, interactive presentation, drop down summaries, and the ability for users to rate/score case studies.



Figure 5: Example website using tile presentation (www.100resilientcities.org)

5 Recommendations

Throughout the report we have highlighted recommendations to enhance the accessibility and usefulness of the case studies as a resource for adaptation practitioners. These recommendations are summarised below:

Recommendation 1: Schedule regular updates of case studies to include details of project implementation, particularly for those case studies that discuss a planning process.

Recommendation 2: Low quality case studies be refined or removed to ensure the overall quality is maintained.

Recommendation 3: Develop a case study template, which outlines a structure to include content that is important to practitioners including:

- barriers encountered
- lessons learnt
- clear documentation of the steps undertaken in the project
- description of innovative practices.

Recommendation 4: Develop case studies that appeal to practitioners because of their direct relevance. Practitioners are likely to judge relevance based on whether case studies:

- are located in geographically similar locations
- face similar climate risk(s)
- share similar size/characteristics
- take place in a similar industry and operational context
- share common values e.g. natural or human values.

Note: All case studies cannot be relevant to all practitioners; the goal is to compile a collection of case studies which, in their totality, address the concerns and goals of Australia's community of adaptors.



















Recommendation 5: Make available contact details of the case study actors so that they can be contacted for more detail and to troubleshoot issues.

This should not be mandatory, however each interviewee indicated that they would be pleased to discuss their case study with others.

Recommendation 6: Adjust the presentation of case studies to incorporate searchable keywords, filtering, interactive presentation, drop down summaries, and the ability for users to rate/score case studies.














































Appendix A

Case study assessment data

Evaluation Criteria		A simple start on the coastal adaptation journey for District Council of Robe, SA	Barwon South West: Testing the application of CoastAdapt's: Working with consultants information	Climate change knowledge and adaptation in Aboriginal local government councils
Adaptation factors		Explanation		
Delivers multiple benefits	Are there other benefits apart from climate risk management? E.g. community benefits, health and wellbeing. Also delivers benefits under multiple futures – i.e. if certain impacts did not occur			
Considers all / multiple hazards	The project does not simply address one climate impact, but many if not all (i.e., bushfire, sea-level rise, extreme weather, flooding, drought, etc.)			
Flexible and robust	The actions do not exclude other adaptation actions in the future or can be altered if need be.			
Practical to implement and maintain	Is the project practical to implement and maintain?			
Unintended negative consequences	Does the project lead to any unintended negative consequences?			
Lead to substantial increases in greenhouse gas emissions	Where possible, additional greenhouse gas emissions will be avoided. However, the benefits of the adaptation action may outweigh some minimal increase in greenhouse gas emissions			
Cost effectiveness	Are the actions cost effective? Have they considered the cost of adaptation action and the cost of impacts avoided?			
Broader considerations				
Takes a partnership approach/builds consensus	Was the project undertaken in partnership with others? Was this a collaborative project?			
Builds resilience and adaptive capacity, particularly at community level	Does the project build capacity of individuals, communities, organisations to respond to the impacts of climate change?			
Demonstrates commitment and leadership	Does the project demonstrate leadership?			
Provides flexibility to meet local needs	Are the project outcomes flexible to the specific needs of the local community?			
Adaptation principles planning phase	Does the project consider the above adaptation principles in the planning/design phase?			
Vulnerability assessment / risk assessment	Does the vulnerability assessment identify exposure, sensitivity and adaptive capacity? (Or risk assessment consider likelihood and consequence?)			
Scores				
	Number of positive impact scores	2	2	3
	Number of neutral impact scores	2	3	2
	Number of negative impact scores or case study does not address the criteria	2	1	1

NACC Community Photo Monitoring in WA		●	●	●	●	●	●	●	●	●	●	●	●	6	4	4	3
University of Sydney and City of Sydney: Adaptation strategy deliberation case study		●	●	●	●	●	●	●	●	●	●	●	●	5	4	4	4
The Witness King Tides project: a creative way for the community to imagine climate risks		●	●	●	●	●	●	●	●	●	●	●	●	8	5	4	4
Northern Beaches all Hazards historic photograph exhibition and workshops		●	●	●	●	●	●	●	●	●	●	●	●	2	8	4	1
Community conversations: building engagement to mainstream adaptation in Mornington Peninsula Shire Council		●	●	●	●	●	●	●	●	●	●	●	●	2	3	4	1
City of Joondalup engaging with its community on coastal vulnerability		●	●	●	●	●	●	●	●	●	●	●	●	0	3	4	3
Biodiversity monitoring in Melbourne's east: a framework for monitoring biodiversity health in a changing climate		●	●	●	●	●	●	●	●	●	●	●	●	3	6	4	4
The Sydney Coastal Councils Group experience: prioritising coastal adaptation options at the local level		●	●	●	●	●	●	●	●	●	●	●	●	4	2	0	0
Kakadu - Vulnerability to climate change impacts		●	●	●	●	●	●	●	●	●	●	●	●	3	3	0	0
Climate risk assessment for North Queensland Airports		●	●	●	●	●	●	●	●	●	●	●	●	2	3	1	1

Monitoring the effectiveness of beach nourishment in the City of Mandurah														
Monitoring and evaluation in the City of Shoalhaven														
Kingston Beach: Climate change adaptation showcase														
Integrating climate risk into council processes in Gippsland: an example of a regional partnership and collaboration for adaptation														
Defend Port Fairy														
Cockburn Sound Coastal Alliance: Partnering to address climate change risks														
Coastal climate impacts and responses in the Darwin Region														
Bega Valley Shire Integrated Coastal Management Program														
The Tweed River Entrance Sand Bypass Project														
The Carlsbad Desalination Project, San Diego County, California														
	2	1	2	0	11	11	9	7	3	8				
	9	6	4	2	2	1	4	6	8	2				
	2	6	0	4	0	1	0	0	2	3				

Using drone technology to monitor coastal change					
Summerland Credit Union: Climate change risk adaptation assessment and planning					
Defence climate change risk assessment					
					
					
					
					
					
					
					
	3	7	8		1
	3	5	4		2
	0	1	1		3

	Positive	Neutral	Negative	N/A	Total
Delivers multiple benefits	26	13	3	25	42
Considers all / multiple hazards	23	9	10	25	42
Flexible and robust	32	7	3	25	42
Practical to implement and maintain	28	13	1	25	42
Unintended negative consequences	23	17	2	25	42
Lead to substantial increases in greenhouse gas emissions	2	33	7	25	42
Cost effectiveness	10	31	1	25	42
Takes a partnership approach/builds consensus	29	20	18		67
Builds resilience and adaptive capacity, particularly at community level	36	26	5		67
Demonstrates commitment and leadership	42	23	2		67
Provides flexibility to meet local needs	20	43	4		67
Adaptation principles planning phase	40	18	9		67
Vulnerability assessment / risk assessment	34	5	28		67



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