

Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises



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As part of the Australian Greenhouse Office (AGO) National Climate Change Adaptation Program, the Sydney Coastal Councils Group (SCCG) have partnered with CSIRO's Adaptation Flagship and working in collaboration with the University of the Sunshine Coast to undertake research on regional approaches to managing climate vulnerability in the Sydney region.

Elements of the Research Project

Project Objectives:

The aim of the project is to develop and trial a method for a systems approach to regional climate change adaptation strategies in large urban areas. The project aim directly addresses AGO priorities through:

- Developing and testing an integrated (systems) method to generate information about the likely impacts of climate change and feasible adaptation strategies in the Sydney region;
- Deepening the understanding of the likely impacts of climate change and resulting adaptation options in the Sydney region through integration of existing models, vulnerability mapping, and an analysis of adaptive capacity.
- Assessing the transferability of the integrated (systems) method to other large urban areas, with transfer to be facilitated through the project National Reference Group.

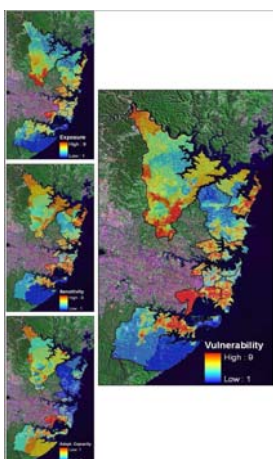
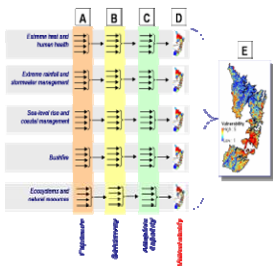
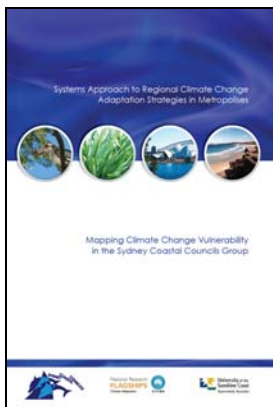
Key Project Activities

1. Regional Vulnerability Assessment and Mapping Report – CSIRO

The *Mapping Climate Change Vulnerability in the Sydney Coastal Councils Group* report conducted and prepared by the CSIRO (Dr Ben Preston) has been released and is now freely available from the SCCG website at www.sydneycostalouncils.com.au. The report presents the findings from the vulnerability assessment and mapping exercise conducted for the Sydney coastal region to complete the first phase of the project. The report has been widely distributed to all SCCG Member Councils, the members of the Projects National Reference Group, other key stakeholders and has been downloaded over 300 times since its posting on the SCCG web page by other interested stakeholders nationally and internationally. The project team welcomes all feedback on the assessment; a quick survey is available from the project web page. The feedback received is seen as valuable to assist in the evaluation and transfer of the project methodology to other urban regions.

Some of the Key Findings From The Assessment Include:

- The consequences of climate change in Sydney's coastal region will be driven as much by socio-economic factors and decision-making as by climate hazards such as heat waves and storm surges.
- Vulnerability in the Sydney Coastal Councils Region is closely correlated with human development patterns, indicating human activity and decision-making are core components of vulnerability.
- Different areas of Sydney will experience climate change in different ways depending on their geographic location, demographics, resources and tools at their disposal to manage future climate change risk.



- Overall inner-city Councils between Sydney Harbor and Botany Bay had the highest levels of Climate Change vulnerability as they are relatively urbanised with significant exposure to the coast and with a generally low adaptive capacity compared to other councils.
- Almost every council has at least one area of critical vulnerability that may be a focal point for management efforts. Similarly, every Council has at least one impact to which it appears to be particularly resilient. Generally the majority of Councils appear to face multiple vulnerabilities.

Key Uses of the Assessment Findings:

- Through a series of workshops with the SCCG Member Councils, stakeholders were provided the opportunity to review and comment on the results. Stakeholder feedback suggested the approach taken to mapping vulnerability offered a number of advantages, particularly with respects to communicating the spatial dynamics of risk as well as the diversity of factors that contribute to vulnerability.
- The assessment indicated where some of the key challenges for each council are and where councils may opt to for more detailed assessments to clarify the extent to which additional management interventions are necessary.
- By combining the vulnerability assessment results with Councils own knowledge and risk management experience will improve the understanding and thinking behind the implications of climate change and what will be needed for communities to respond.
- While relative vulnerability maps may be useful for identifying and prioritising at-risk areas, they are just one of a broad range of tools that can be used to inform planning and decision-making.
- The vulnerability assessment is an essential first stage to better understand the impacts of climate change on the region, and to help move towards effective and adaptive management

2. Workshop Analysis and Regional Workshop Synthesis Report

This report provides a regional snap shot of the workshop outcomes and identifies regional crosscutting issues, barriers and opportunities to climate change adaptation. The regional workshop synthesis report has been used to support the selection of the top three crosscutting barriers: Community, Planning and Decision Making and Infrastructure along with three regional representative Member Councils that will be further investigated as part for the case study investigation phase of the project. These case studies will further investigate the key barriers preventing Councils from adapting to climate change for demonstration to other councils in the SCCG and more broadly across Australia.

3. Case Study Investigation Project Phase

The aim of the case study phase is to increase the capacity Member Councils to adapt to climate change. A series of interviews are being conducted in each of the three case study councils with 10 or more council representatives. The responses will be analysed and provide a regional review of the institutional issues associated with adaptation and the constraints, barriers and opportunities to effective adaptation. The case study investigation will focus on the areas of planning, infrastructure and communities identified in the synthesis of the regional workshop outcomes. Recommendations of potential strategies to better manage cross-cutting barriers will be highlighted in the final case study report. Recommendations on the transferability of the project methodology and recommendations to other jurisdictions will also be made.

Specific benefits of the case study will be to:

- Deepen the understanding of the most common cross-cutting barriers;
- Inform the feasibility of potential strategies to better manage the cross cutting barriers; and
- Provide a benchmarking of Council responses to the barriers that may form the basis for an on-going monitoring and evaluation framework.

Check the new project webpage that will be regularly updated. It provides a detailed project description, up-to-date project progress and all project outcomes as they become available. Projects homepage can be found at

www.sydneycostalcouncils.com.au/system-approach-to-regional-climate-change-adaptation-strategies-in-metropolises/index.php .

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