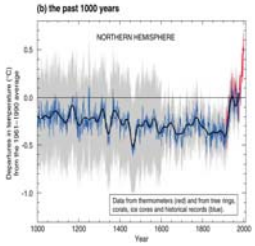
Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises

NATIONAL CLIMATE CHANGE ADAPATION PROGRAM
PROJECT SUMMARY REPORT

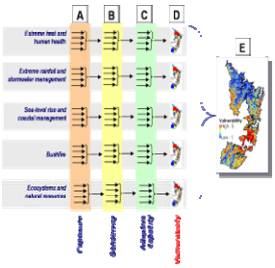
As part of the Australian Government Department of Climate Change (DCC) National Climate Change Adaptation Program, the Sydney Coastal Councils Group (SCCG) have partnered with CSIRO's Climate Adaptation Flagship and working in collaboration with the University of the Sunshine Coast to undertake research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

Elements of the Research Project

Project Objectives:

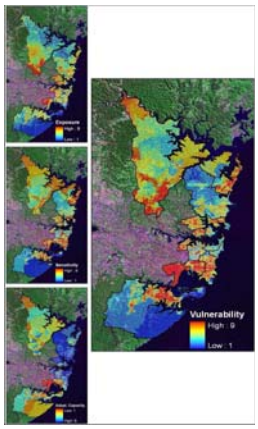


The aim of the project is to develop and trial a method for a systems approach to regional climate change adaptation strategies in large urban areas. The project aim directly addresses DCC priorities through:



- 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, generation of new knowledge where there are significant gaps, scenario analysis, an analysis of adaptive capacity, and assessment of demonstration projects.
- 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 Components



Stage 1: Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises

Creation of a template for vulnerability mapping in the SCCG.

In order to provide an initial basis for awareness raising and discussion, a template for vulnerability assessment and mapping in the SCCG will be created. This template will utilise existing outputs from CSIRO and other relevant projects (e.g. UPRCT project) and present them as simple spatial overlays. A major aspect of this phase will also be to collate information on ongoing or planned studies and also identify possible impact models for application in the analysis of existing adaptive measures and capacity in a latter stage of the project.

Issues workshops with local governments and other stakeholders to determine regional vulnerabilities and drivers

The aim of the issues workshops will be to determine regional drivers. With input from stakeholders the basic vulnerability assessment template will be enhanced with the addition of key issues, and either quantitative data or qualitative risk assessments, depending on available information and interest. A range of different scenarios for future climate change will be used to simulate changes in climate hazards relevant to SCCG, with priority hazards for vulnerability assessment identified by stakeholders.

LGA priorities and capacity for adaptation and determination of local contextual variables

Workshops will be conducted for each LGA represented by the SCCG (15 LGAs across Sydney, representing over 1.3 million people). These workshops will discuss the output of the regional vulnerability mapping process and use this as a tool to discuss individual priorities for adaptation and determine local contextual variables which may affect adaptation. The workshops will also highlight specific local strengths and weaknesses with regards to building future capacity for responding to climate change.

Analysis of existing adaptive measures and capacity

Case studies will be conducted examining local council's adaptation strategies for three key cross sectoral issues that emerged from the regional and local workshops (eg. water, infrastructure / asset protection, public health). Recommendations will be made to councils on how to improve their adaptation strategies. Local councils will also be provided with monitoring and evaluation frameworks to help benchmark and improve those strategies into the future. The analysis will also help select & design demonstration projects for the 2nd stage of the project (currently unfunded).

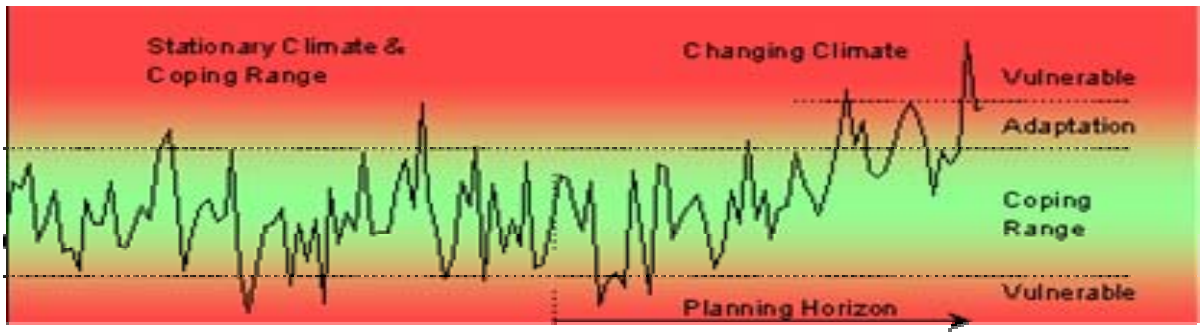
Write up of method, results, and transferability to other large urban regions

The write-up will include detailed discussion of the application of a systems method to understanding climate vulnerability and adaptation strategies. The major focus of the final report will be the discussion of the transferability of the method to other large urban regions.

Project Outcomes:

The project will benefit stakeholders in the Sydney region through:

- Generating information about the likely impacts of climate change (eg. flooding, coastal erosion and temperature) and feasible adaptation strategies (eg. capital works, education, and planning) 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;
- Building the capacity of stakeholders in the Sydney region to implement, and monitor the success of, adaptation strategies (eg. for infrastructure, health, and biodiversity);
- Working with stakeholders (eg. SCCG member councils and other stakeholders) to build adaptation strategies into institutional structures and processes (eg. asset management plans, coastal management plans, estuary management plans, floodplain management plans, local environment plans, and regional environmental plans).



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