What is the capacity of Australian coastal councils to adapt to climate change?

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Climate change impacts on Australian coastal areas

- Coastal areas are particularly vulnerable to climate change impacts (IPCC, 2007). In Australia, low-lying islands and coastal plains will be under pressure (Garnaut, 2008; Aboudha and Woodroffe, 2006).

- Current socio-economic trends are likely to increase vulnerability to climate change. Over the next 30 years Australia’s coastal population is expected to increase by 26%, reaching 7.2 million by 2036 (Australian State of the Environment, 2001).

- Between 157,000 and 247,000 residential buildings valued at $63 billion are potentially at risk of inundation from a 1.1m sea-level rise (DCC, 2009a).
Urgent need for adaptation in Australian urban coastal areas

- The Australian Government regards “preparing Australia for the unavoidable impacts of climate change” as an imperative (DCC, 2009b:1).

- The Australian State of Environment Report (2006:49) states “planning for adaptation to climate variability should be priority”.

- Limited incorporation of climate change considerations in relevant planning policy and legislation (Garnaut, 2008).

- “The statutory requirements that exist are largely discretionary, or are found in objects clauses. These provisions require the consideration of climate change impacts and potential preventative and adaptive behaviour […] Councils are merely required to take climate change into account, but are not required to make ‘climate friendly’ decisions” (NSW Environmental Defenders Office, 2008:36).
A national assessment framework

- Action is urgently needed in the face of increasing socio-economic vulnerabilities of communities to climate change impacts along our coasts.

- To date there has been no national assessment of adaptive capacity and there is limited understanding how adaptive capacity is determined by the local context and how it differs across different types of urban environments and spatial scales.

- An improved understanding of adaptive capacity through the development of a national assessment framework will greatly enhance our ability to identify hotspots, to communicate climate change risks to decision-makers and communities, and to design national strategic and targeted adaptation responses.
Project objectives

- To develop a framework for a national assessment of coastal adaptive capacity.
- To conduct an online survey targeted at local authorities to self-assess their perceived capacity to respond to the challenges of climate change.
- To test and refine the national coastal adaptive capacity framework through application in local case studies.
- To provide lessons learnt and recommendations that inform the development of decision-making tools aimed at building adaptive capacity in different types of coastal urban areas.
STAGE 1. Developing a national assessment of coastal adaptive capacity to climate change

- Develop a national classification of coastal communities (using elements of different resilience frameworks and the ‘5 capitals’ generic adaptive capacity index developed by Nelson et al., 2007).
  - Based on a typology of characteristics including dominant economies/industries, settlement size and characteristics, degree of urbanisation, transitional nature (based on Gurran et al., 2005), geophysical characteristics, degree of climate change vulnerability, and coastal hazard types.
  - The national assessment will determine the current benchmark of adaptive capacity against which future changes can be monitored and assessed.
STAGE 2. Expert validation of national assessment framework

- On-line survey for completion by local authorities to self-assess their perceived capacity to respond to the challenges of climate change.

- The survey will include:
  - pre-populated demographic variables identified as relevant to determination of adaptive capacity;
  - self-assessment of the expected relevance of these to regional adaptive capacity;
  - self-assessment of adaptive capacity (and geo-physical vulnerability) and impediments to mobilising capacity.

- This stage will engage key regional stakeholders and act as an intervention to encourage evaluation of their capacity and readiness to respond to climate change impacts.
STAGE 3. Implementation of national adaptive capacity framework in target vulnerable coastal communities

- Focusing on local decision-making and planning processes, the case studies serve to test the validity of the national index in selected coastal urban areas.

- Primary data will be collected on:
  - perception and conceptualization of the climate change problem
  - status of the development of adaptation strategies
  - appropriateness of national-level adaptive capacity indicators in the local context
  - priorities, opportunities and challenges in local adaptation planning and implementation
  - stakeholder expectations and perceptions of the roles and responsibilities and adaptive capacity of various actors.
STAGE 4. Dissemination of lessons learnt

- Dissemination of lessons learnt with regard to identified good practice principles and approaches to adaptation planning.
- Recommendations on how to build adaptive capacity for local government and help with prioritisation and targeting priority parameters for adaptive capacity actions for industry, communities and institutions.
Stakeholder partners

- Sydney Coastal Councils Group, NSW
- Warrnambool City Council, VIC
- Sunshine Coast Regional Council, QLD
- Mandurah City Council, WA

The project builds upon previous and ongoing research:
- Coastal Collaboration Cluster
- South East Queensland Climate Adaptation Research Initiative
Thank you!

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