

Seven Principles of Coastal Zone Climate Change Adaptation

1 Climate change adaptation needs clearly defined goals.

It is highly likely that the goal of climate change adaptation will be different from one location to the next. In some locations, especially near pristine coastal environments, we may wish to keep the system as it is.

In contrast, in other places, especially those in highly developed coastal areas, we may want to significantly improve the condition of the system or, perhaps, even move the system to a new alternative state (i.e. simply maintain the function of the system and accept that there will be species loss along the way).

These goals represent very different alternatives in terms of the approach and resources required and the specific adaptation actions that may need to be implemented to achieve them. While this seems quite intuitive, most climate change adaptation actions and plans do not explicitly state which of these goals (or any of the other possible alternatives) are being considered. This lack of explicit goal setting represents a major flaw in the way that climate change adaptation plans have been produced to date. Indeed, it may be worthwhile revisiting existing adaptation plans and considering all alternatives (with all stakeholders in the room together) to aid in the decision making process.



2 Climate change adaptation decision making must include stakeholders from environmental, social and economic realms.

Climate change adaptation is about making sustainable decisions. These cannot be made in a vacuum. For example, the best adaptation action for a mangrove forest will not likely be implemented if it strongly impinges on current (and/or future) social and economic values in the region. It is therefore critical to include all aspects of sustainability in climate change adaptation decision making processes, to ensure that the actions that are recommended have the greatest likelihood of being adopted.

3 Climate change adaptation decision making requires data to be easily available and shared.

Decision making requires information and it is clear that the best information is not always available to decision makers, even in areas that are significantly advanced in their planning and implementation of actions. Critically, information including climate projections, ecology and physical and chemical environmental parameters need to be made available across all sectors and all of the social and economic institutions within each region.

Issues around data availability also highlight the need for monitoring across all sectors to ensure that there is data with which managers can make decisions. Finally, a mechanism to collate, store and make available all of these diverse datasets would greatly enhance decision making capabilities.

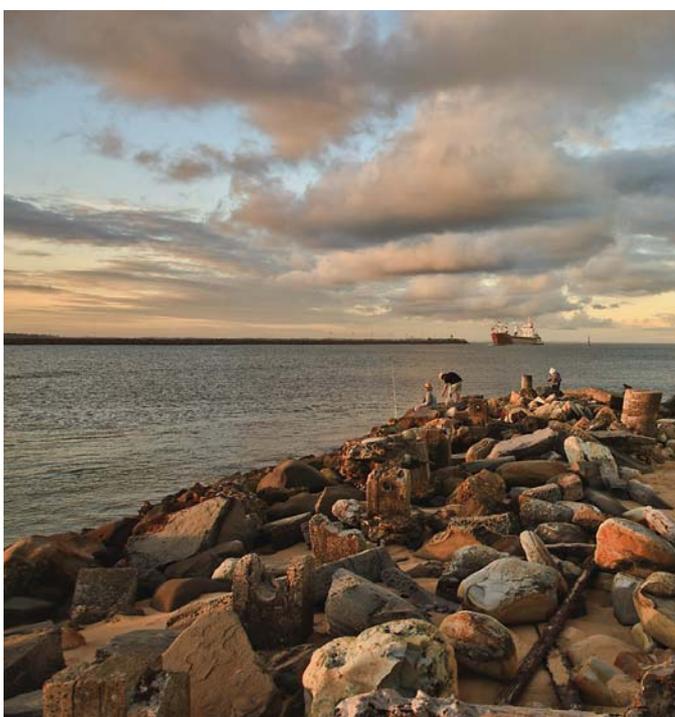


Image: Richard Taylor

4 Climate change adaptation demands a drastic re-think of existing policy and planning constraints.

We need to be more flexible and dynamic, both spatially and temporally, in how we view climate change and how we consider adaptive pathways.

We need to move beyond political cycles, because unlike some non-climatic threats, climate change and the stress associated with changes in our climate will be with us for a very long time.

This temporal component of climate change requires management flexibility, because even the most sensible adaptation action in 2011 may not represent the best solution for the system in 2051.

Decisions made now should provide for flexible responses into the future. This must be considered in the current decision making process. Inflexible and constrained adaptation actions that are implemented now may shut the door on sensible future adaptation actions.

5 Climate change adaptation in the coastal zone requires a thorough understanding of connectivity, both within and between ecosystems.

Adaptation actions in a particular habitat, like saltmarsh for example, will have flow on effects in neighbouring habitats and, in turn, will be influenced by other processes in neighbouring habitats. It is therefore critical that the interactivity within and between coastal zone land, rivers, estuaries and the ocean is understood and incorporated into climate change adaptation decision making processes.

6 Adapt at local/regional scales but don't lose sight of the bigger picture.

Climate change adaptation must occur at local and regional scales, as local context will largely determine which adaptation actions are appropriate on the basis of the social, economic and environmental features of the region.

Some local activities, however, may impinge upon the capacity of some species to persist at the regional or larger scale, so it is important to include larger scale considerations when deciding on adaptation actions.

7 Climate change adaptation should not be considered in isolation of non-climate threats coastal environments already face.

The coastal zone is already threatened by a host of natural and anthropogenic threats. Climate change adaptation should focus on sustainability in the coastal zone, so the explicit assessment of non-climatic threats is required. This is critical as climate change is likely to influence some of the drivers of non-climatic threats.

Questions to consider when evaluating climate change adaptation actions

1. What are the goals of the adaptation action?
2. Which climate change driver(s) or ecological impact(s) does the action address?
3. What are the spatial and temporal scales for implementing the action?
4. What are the likely intended ecological consequences of the action?
5. What are the possible unintended ecological consequences of the action?
6. What are the potential human consequences of the action, e.g. impacts on settlements, infrastructure and communities?
7. What are the likelihoods of these unintended consequences?
8. What are the biophysical and socioeconomic constraints that might inhibit uptake and implementation of the action?

More information...

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To obtain a copy of the full scientific report or synthesis report from the project, as well as other information sheets, visit: www.nccarf.edu.au/cerccs



Image: Frank Stadler