

PLANNING FOR CLIMATE CHANGE ADAPTATION



Hail, storm surges, flooding, heat waves, bushfires and other natural disasters cost the Australian community billions of dollars each year in damage to infrastructure and productivity in addition to the social and emotional cost borne by communities and individuals. These costs are mounting as climate change influences the frequency and intensity of these types of events. Given the likelihood of increased impacts of natural disasters on our society and ecosystems, planning for change may be one of the most powerful strategies we can adopt.

On the morning of June 6th, 2016 Australians woke to dramatic images of storm damage along the Sydney foreshore caused by a slow moving east coast low system.

"It's the worst I've seen it here...I have never seen it come up this high with this amount of storm surge and I've been living here about 40 years"

Craig Graham, Collaroy local.
(ABC News, 6 June, 2016)

Seeing the bigger, connected picture

It is easy to view the type of damage from the storm that impacted Sydney in June 2016 as a single,



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surprising 'event'. In reality, however, the storm's impact was the side effect of a myriad of fast and slow changes operating over different scales of time and space. Storms and tides functioning over a matter of hours caused the immediate damage of course, but it was the numerous slow changes such as loss of buffering

System-sensitive adaptive planning incorporates retention and protection of natural buffers such as riparian vegetation, flood plains and wetlands to reduce the impact of natural disasters and extreme weather events which will likely increase in frequency and intensity under a changing climate.

coastal vegetation, historical changes to planning schemes, changes to global weather patterns, shifting community values and economic factors operating and interacting over decades that created the potential for the storm to have the degree of impact it had. Taking a systems view, which incorporates these fast and slow cross scale changes, is one of the first steps towards a new approach to planning: a form of 'future ready' adaptive planning.

Planning to change

Traditionally, planning has focused on controlling impacts, smoothing out fluctuations and making the uncertain certain. In an increasingly turbulent, complex



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and interconnected world however, planning that fails to embrace change, assuming instead that the future will be similar to the past, will inevitably lead to greater losses and social impacts from disasters.

Adaptive planning and implementation of developments and infrastructure that is 'system sensitive', incorporating the retention and protection of natural buffering infrastructure like native vegetation, salt marshes, riparian strips, flood plains, wetlands and native



Shifting the focus

Recent research suggests that reframing the challenges of planning can help us to develop new perspectives and insights. For example:

- 1. Focus on the solutions & decisions that need to be made,** not on the problem.
- 2. Identify small decisions that can be made today,** not the big decisions that need to be made in the future.
- 3. Manage risks, not uncertainty.** Flipping the discussion from one of uncertainty to risks and probability is empowering. It breaks uncertainty as a barrier to action.
- 4. Focus on how society's values and institutions (not just technical issues) constrain options.**
- 5. Incorporate the societal and economic implications,** not only the environmental, into planning and decision making.
- 6. Map out system interactions, responses and unintended consequences** to understand how different scales interact.

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vegetation in strategic locations, can help us to avoid risks and reduce the future costs of climate change related disasters.

The shift towards a new approach to planning is not easy and relies on overcoming a range of human and organisational barriers, but there are numerous examples globally where this

Crossing traditionally separate and distinct boundaries and domains will bring together a depth of expertise and experience to adaptive planning and implementation. The diversity of cross-domain perspectives will improve our ability to plan for uncertain futures and reveal challenges and opportunities for planners.

opportunities to integrate biodiversity conservation, water sensitive urban design, recreation and coordinated infrastructure and services provision requires a proactive approach to planning, including a clear shared vision,



shift has been achieved. Dramatic transformations have been possible even within some of the world's most developed cities such as Singapore, New York and Chicago, improving the well-being of residents and reducing the cost of the pressing effects of climate change.

Making the shift towards sustainable, biodiverse urban design

Taking advantage of the

leadership across boundaries and clear goals for integrated, sustainable development. These factors also need to be deployed in an adaptive manner that incorporates change and uncertainty or we risk the 'lock in' trap of previous planning and developments.

Adaptive planning – getting the basics right

Moving towards a more adaptive



approach to planning requires a cultural shift, something that is not always easy to achieve in large organisations. There are some critical success factors that will help the transition including progressive leadership, good governance arrangements to support planning and shared decision making, adequate resourcing, being prepared for windows of opportunity, thinking and planning across sectors and strong engagement with stakeholders and partners to provide feedback and reflection on processes.

Collaborate and integrate to broaden the view

Turning aspirations for our cities and communities to be resilient in the face of climate change into reality requires us to take some novel approaches to how we think, plan and act. One of the most powerful

approaches we can take to making this aspiration a reality is to 'span boundaries'. That might be working across departments within a single organisation or working across different organisations in different sectors, or between public & private sectors. While there are challenges to working across boundaries and creating a shared vision, bringing together different perspectives and expertise can greatly improve our ability to plan for uncertain futures.

Putting decisions in context

An emerging approach to addressing the challenges of planning is the Adaptation Pathways approach. This approach focuses on planning for multiple possible futures, with the various decisions and actions to reach those futures mapped out

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sequentially to determine the 'best' path forward given the current circumstances. This approach emphasises understanding the decision context, that is, society's values, the knowledge and the rules and regulations spheres that sit around any decisions. Good

synergies and conflicts between the domains that are difficult to envisage when working within the one domain. Future urban planning will be as much about working across these domains as within.

Decision makers need to consider the decision context in which they operate. It lies at the intersection of societal and organisational values, rules and knowledge. Too often knowledge (or its lack) is prioritised, without sufficiently considering the values and rules required for action.



decisions can only be made when these spheres align and overlap so putting in place small changes now that accumulate over time and enable those spheres to align in the future is a powerful way to influence the trajectory of complex systems like urban development and expansion.

Similarly, integrating across different domains such as biodiversity conservation and public health produces new insights about

Get the right tools for the job

The Sydney Coastal Councils Group, together with CSIRO, has developed a planning tool to support biodiversity planning in a changing climate. The tool 'Climate-ready biodiversity management: a tool to help design biodiversity management in the face of climate change' is a guided process to identify the decisions and actions that can be taken now to best position our approach to biodiversity



conservation as our climate changes. The approach embeds many of the concepts and ideas raised in this fact sheet. The key steps in the process of making

natural resource management “climate-ready” are schematised below. To access the whole tool, please visit the [Sydney Coastal Councils Group website](#).

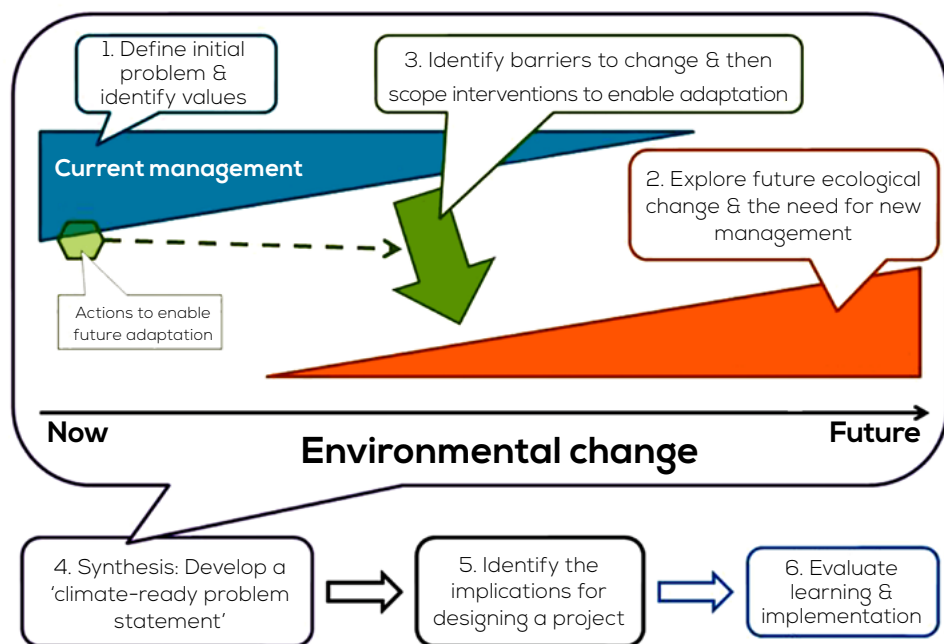


Figure 2: A schematic representation of the elements of the Climate-Ready Biodiversity Management Tool



Sydney Coastal Councils Group

The Sydney Coastal Councils Group formed in 1989 when five 'ocean' councils got together to address beach sewage pollution prior to the implementation of deep ocean outfalls. The SCCG has since expanded to include eleven councils, covers an area of 800 km² adjacent to Sydney's coastal and estuarine areas and represents nearly 1.3 million Sydneysiders.

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