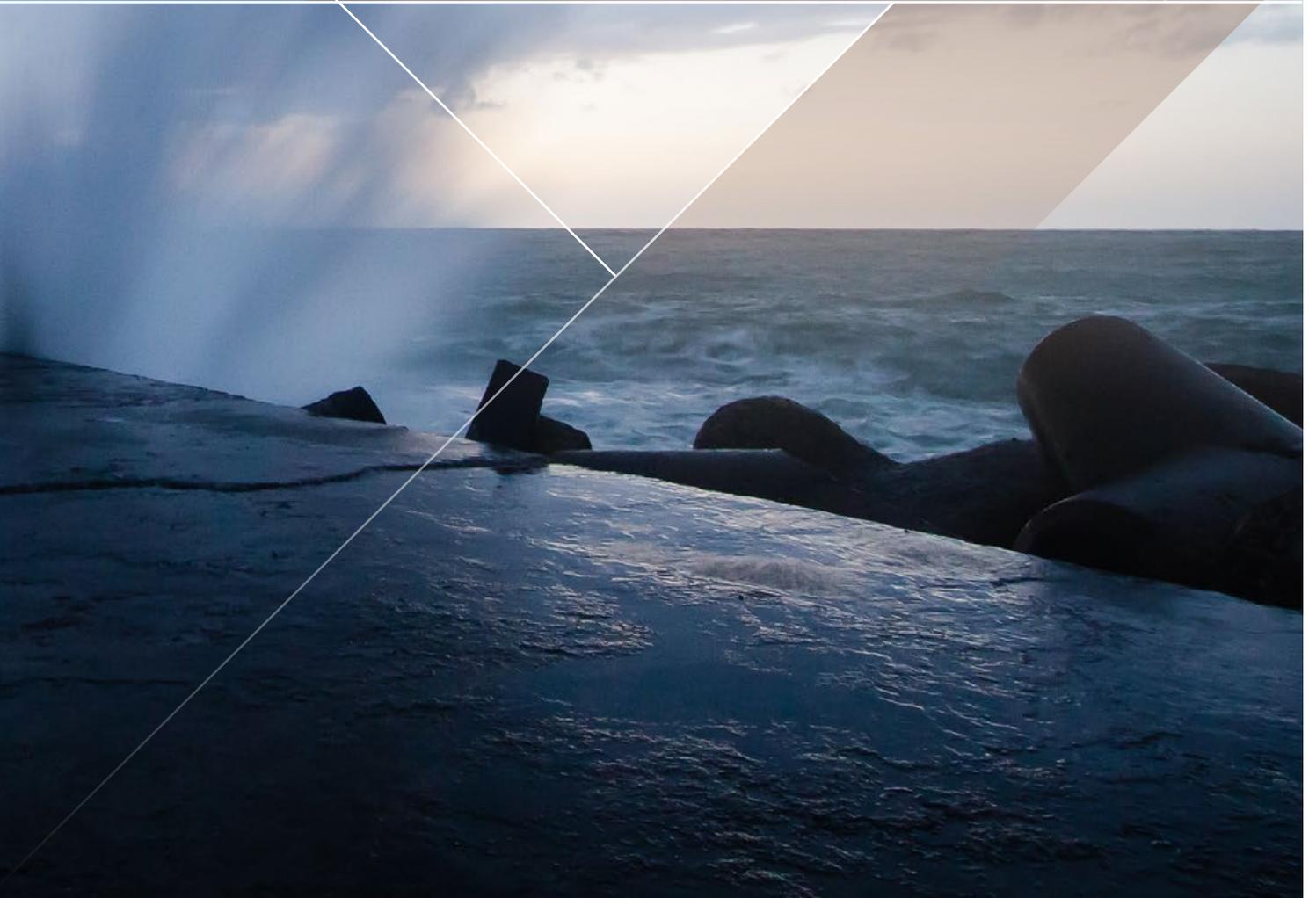


**Climate Change Adaptation
Good Practice - Case Study**

South Australian Integrated Climate Change Adaptation



About Adaptation Good Practice

Adapting to climate change is a relatively new concept to many. It is important to learn from practitioners who are undertaking adaptation activities that are beginning to have tangible outcomes. Documenting examples of good practice and identifying the criteria that makes them work, enables those interested in adaptation to learn about how to take action.

There are expectations that Adaptation Good Practice (AGP) includes a definite start and finish to a project. However climate change practitioners' experiences show that adaptation projects are often steps in longer learning journeys. There are no golden rules on how to adapt and often practitioners across Australia are inventing the wheel that drives future AGP. This case study of South Australia's integrated approach to climate change

is part of a series of 16 case studies that recognise exemplars for AGP in Australia. Through the development of these stories of successful adaptation it was refreshing to see an emergence of similar experiences and challenges regardless of the project or location. A synthesis of these stories can be seen in the document *Climate Change Adaptation Good Practice: Key Lessons from Practitioners Experiences*, which will help practitioners to understand that they are not alone in their challenges and to see some of the clear lessons learned about what drives good practice in adaptation.

Following the Snapshot there is a more in depth narrative of the experiences, learnings and network links to stimulate further engagements and knowledge sharing among the growing community of adaptation practitioners.

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Case study snapshot

South Australian Integrated Climate Change Adaptation

Climate change adaptation action in South Australia (SA) developed over a number of years as governments, regions and private parties began to understand the implication of climate change. The statewide collaboration that currently exists evolved from many individual needs and perspectives and was underpinned by documents including the Climate Change and Greenhouse Emissions Reduction Act 2007, South Australia's Greenhouse Strategy 2007-20, and the LGA Climate Change Strategy 2008-12. State processes were supported by a range of Commonwealth actions including the creation of NCCARF and the resulting levels of national climate change adaptation collaboration. In addition, regional understanding of climate change science, greenhouse gas mitigation policy, peak oil, the longest drought in history brought engagement in adaptation.

The project journey

Personnel working in the climate change adaptation field are often asked how it is that the South Australia (SA) as a whole has been able to develop an integrated, strategic and collaborative approach.

Climate change adaptation in SA had a number of early drivers (Figure 3). One of the first intergovernmental partnerships that delivered a considered statewide adaptation response to the likely impacts of climate change was the formation of the SA Coast Protection Board. The National Natural Disaster Resilience Program (NDRP), delivered through the SA Government, also provided early support for adaptation planning. Another key driver emerged in 2008 when the Local Government Association of SA Mutual Liability Scheme (LGA MLS),

insurers to the local government sector, required every council state-wide to participate in a climate change risk assessment process. Concurrent activity in the LGA SA saw the development of the 2008-2012 LGA Climate Change Strategy and the development of a partnership with the State Government that brought the two sectors together under a State and Local Government Climate Change Sector Agreement.

Current statewide collaborations among the community of adaptation practitioners has evolved from many individual and organisational needs and perspectives. In addition, regional understanding of climate change science, greenhouse gas mitigation policy, peak oil, and the longest drought in history have brought closer engagements among the South Australian community of adaptation practitioners.

As in any region, the challenges and barriers to climate change adaptation are numerous. The process was complicated and far reaching, the required resources and funds were significant, opposition has been at times frequent and outputs can be technical and difficult to communicate. However, the collaborative partnership approach provides a wealth of resources, capacity to leverage funds and other resources from external sources, innovative ideas, champions with a wide range of knowledge and perspectives, and expanded opportunities for solutions.

Risks and impacts addressed

Climate change impacts in South Australia include: more record hot days and heatwaves affecting human health; changing rainfall patterns and higher temperatures posing risks to agricultural



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Figure 1: South Australia.

The collaborative partnership approach provides a wealth of resources, capacity to leverage funds and other resources from external sources, innovative ideas, champions with a wide range of knowledge and perspectives, and expanded opportunities for solutions.

areas and urban water supplies; and rising sea levels increasing vulnerability in coastal towns and infrastructure.

Drivers for adaptation action

Adaptation statewide built upon earlier mitigation action and was enhanced at the state government level with the development of the Climate Change Adaptation Sector Agreements and at the local government level as a result of pressure by reinsurers to develop climate change risk assessments for every Council.

→ Adaptation action

The overarching strategy has been to develop a collaborative, consistent, state-wide approach to climate change adaptation based on the regional scale to ensure a resource and cost effective response that would reduce the likelihood of maladaptation.

Outcomes achieved

- State-wide climate change resilience and adaptive capacity
- Council risk assessments,
- Regional integrated climate change adaptation plans
- Specific research project outputs.

Emerging outcomes

To build a culture of climate change adaptation where organisations consider climate change automatically as part of all planning processes, similar to the way occupational health and safety is embedded into standard practice.

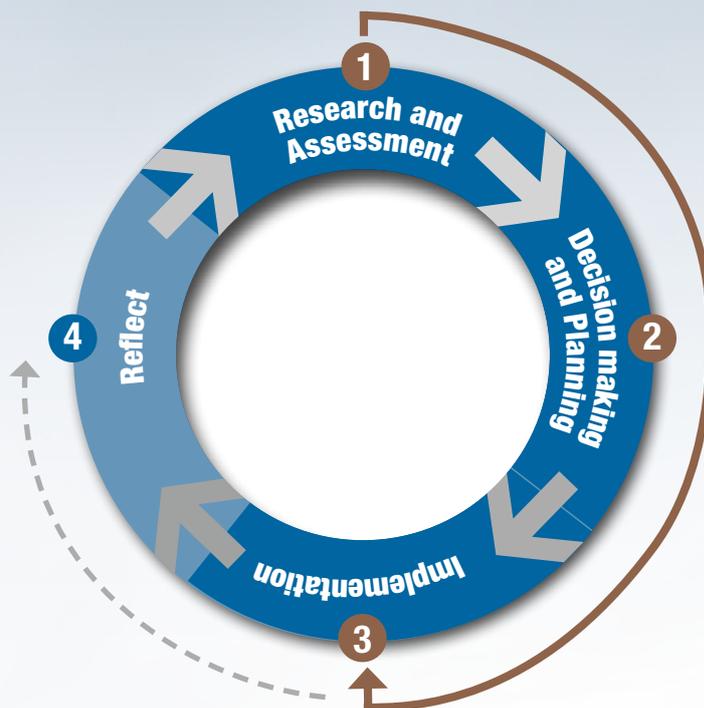


Figure 2: South Australian Integrated Climate Change Adaptation Adaptation Good Practice phase

The project

A desire within South Australian State Government and Local Government to develop a consistent approach to climate change adaptation that would address the full range of likely climate change impacts has resulted in a strategic, integrated and collaborative approach to climate change adaptation state-wide. The overarching aims of the process have been to reduce climate change risk in a cost and resource effective manner and minimise cases of maladaptation that might eventuate from an ad-hoc approach.

Risks and impacts addressed

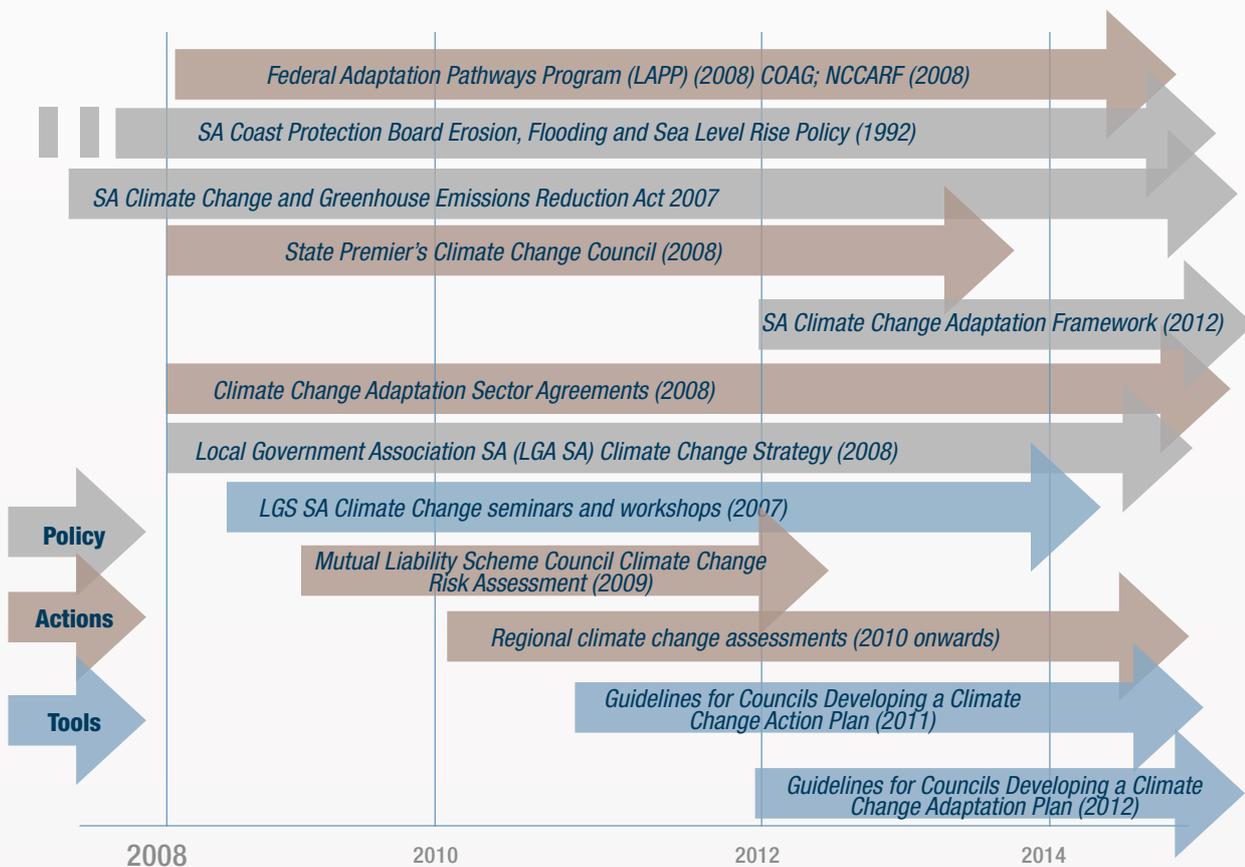
All of the physical impacts of climate change that are likely to affect the State are included in the overarching policy, financial and science responses developed and include increases in temperature, changes to rainfall, sea level rise, ocean acidification, and an increase in the incidence and intensity of extreme events such as storm surge, heatwave and bushfire.

The social risk that various sectors of the State may not participate in the

collaborative response was reduced by taking a regional approach, integrating outputs into existing risk management and financial frameworks and by making the process to “big to fail”

In addition, the financial, environmental and social impacts of changes in the climate are considered in an integrated way.

The financial risk of poor investment in adaptation action is addressed by considering maladaptation at the regional scale and by including input from a wide range of stakeholders.



Source: Jacqueline Balston

Figure 3: Timeline of climate change adaptation action in South Australia and supporting national activities.



Source: DEWNR

Figure 4: Rohan Hamden, Director Sustainability and Industry Partnerships, Sustainability and Climate Change, Department of Environment, Water and Natural Resources, South Australian Government (left) and Adam Gray, Director Environment, Local Government Association South Australia (right) at the State Climate Change Adaptation Showcase, March 2013.

Response strategy

In SA the responses to climate change risks and the implementation of identified adaptation actions have been multi-pronged and evolved over the past ten years from previous work that was undertaken on climate change mitigation (Figure 3). The approach taken has delivered numerous outputs and continues along a strategic route that takes advantage of champions, opportunities for funding and innovative approaches.

The regional-scale partnership approach encourages bottom-up solutions and ownership of climate change adaptation actions, and focuses climate change adaptation within a risk context.

Implementation phases

In 2007 the State released both the SA Greenhouse Strategy and the Climate Change and Greenhouse Emissions Reductions Act. The Act recognises the need to adapt to climate change and create mechanisms for collaborate between industries, communities and State Government to address climate impacts.

In 2008 the LGA MLS, insurers to the local government sector, required every Council state wide to participate in a climate change risk assessment process. The assessment was delivered in response to a growing awareness of the science of climate change, likely impacts to the state, and reinsurance industry requests for the sector to consider risk exposure to the impacts of climate. As

a result of this process, Chief Executive Officers (CEOs) for each Council were given the responsibility to implement climate change adaptive actions. Outputs of the project included a risk assessment for each Council, a sector wide risk assessment summary and the LGA MLS requirement that each Council address the risks identified for their business.

Concurrent activity in the LGA SA saw the development of the 2008-2012 LGA Climate Change Strategy and the development of a partnership with the State Government that brought the two sectors together under a State and Local Government Climate Change Sector Agreement. This agreement identified a number of mutually beneficial climate change projects for collaboration including targets for the development of regional adaptation plans across the State.

In the regions, the Strengthening Basin Communities partnership between the SA Murray Darling Basin Natural Resource Management (NRM) Board and the Murray and Mallee LGA examined the impact of climate change on the SA Murray Darling Basin region and dependent communities and was delivering results during 2010. In the Central Local Government Region climate change engagement with a range of regional stakeholders was underway as early as 2008 in the form of regional forums and collaborative investigations to identify options for funding regional climate change adaptation – a process that influenced the National Disaster Resilience Program (NDRP) funding guidelines. On the Eyre Peninsula the NRM Board had also commenced a process of identifying climate change vulnerabilities and engaging community in planning for the impacts of climate



Source: DEWNR

Figure 5: Presentations on regional projects at the State Climate Change Adaptation Showcase, March 2013.



Source: DEWNR

Figure 6: Anita Crisp, Executive Officer, Central Local Government Region of South Australia (right) providing regional feedback at the State Climate Change Adaptation Showcase, March 2013.

change. Eyre Peninsula actions culminated in the formation of the first regional scale Climate Change Sector Agreement, a voluntary agreement that brought parties from a range of regional and state sectors together to plan for climate impacts and a model for how regional climate adaptation planning could be governed state-wide. Both State Government and Local Government provided significant financial

support to these regional programs to support their development and implementation.

The State Government, in recognition of the benefits of the regional approach, developed the South Australian Climate Change Adaptation Framework 'Prospering in a Changing Climate'. While governments can provide leadership and coordination, the Framework encourages action at an individual, regional and

local level. The Framework also created mechanisms for State Government to actively support and respond to regional adaptation planning processes. The Framework also creates the mechanism for consistent and comparable planning arrangements across the state, albeit allowing for significant customisation by each region.

In collaboration with the key stakeholders, regional champions, climate change adaptation consultants and university researchers, the LGA SA formulated a methodology to develop a climate change adaptation action plan based on the risk assessment framework and an assessment of vulnerability. The methodology was endorsed by the SA Climate Change Adaptation Framework.

Outcomes achieved

Tangible outcomes and measures of success from the project include:

- LGA SA Climate Change Strategy
- LGA MLS Climate Change Adaptation Program (Risk Assessments)
- Annual LGA SA Climate Change adaptation workshops and seminars
- Guidelines for Developing a Climate Change Adaptation Plan and undertaking an Integrated Climate Change Vulnerability Assessment
- South Australian Climate Change Adaptation Framework
- Prospering in a Changing Climate Funding Program
- NCCARF Settlements and Infrastructure Project outputs
- The then DCCEE Coastal Adaptation Decision Pathways Project outputs
- Regional climate change adaptation plans

- Numerous climate change adaptation research projects undertaken by universities, state agencies and consultants state-wide
- The South Australian Climate Change Adaptation Showcase conference
- Political, State and Local Government, regional, NRM, RDA, emergency management, industry, and community support for the process of climate change adaptation.

The South Australian Climate Change Adaptation Framework 'Prospering in a Changing Climate':

- Provides guidance as to how climate change adaptation activity will occur in South Australia
- Articulates the roles and responsibilities of all parties and recognises that adaptation to climate change is a shared responsibility and

involves a joint effort by all levels of government, business, community and individuals

- Encourages action at an individual, regional and local level
- Creates mechanisms for state government to actively support and respond to regional adaptation planning processes and under the Framework the state government started to encourage other regions to form collaborative arrangements across sectors to plan for the impacts of climate change
- Creates the mechanism for consistent and comparable planning arrangements across the state, albeit allowing for significant customisation by each region.

Ongoing work includes the funding of projects under the State Government's

Prospering in a Changing Climate program, and a collaborative LGA SA and SA Adaptation Framework Science to Solutions program that will identify barriers to climate adaptation uptake, address identified knowledge gaps, and provide regional support and climate change adaptation capacity building.

Emerging outcomes

Ultimately a culture of climate change adaptation is envisioned where organisations consider climate change adaptation automatically as part of their strategic, operational and financial planning processes in much the same way that occupational health and safety is now embedded into standard practice.



Source: Adam Gray

Figure 7: Coastal Adaptation Decision Support Project partners examine coastal inundation and erosion issues on Adelaide's northern beaches.

Critical success factors

AGP analysis of the project

Success of this approach has been driven by strong leadership and excellent engagement, connectivity between all stakeholders, cost and to continue to plan for sustainability

This project is strong in:

- Leadership
- Engagement
- Connectivity
- Sustainability
- Cost

Leadership

Leadership has been evident at the political, state and local Government, agency, community, research and industry levels and has been a key driver of the SA climate change adaptation process. Collaborative leadership at these levels has provided supporting legislation, funds, resources, knowledge and innovation to drive the process forward in the face of opposition and has created an encompassing vision that attracts stakeholders to engage.

→ Leadership lesson learnt:

Collaborative leadership provides the support to drive the process despite oppositions.

Engagement

A wide range of stakeholders are engaged in climate change adaptation in SA including State and Local Government personnel, university and scientific researchers, community champions,

As a result of these numerous and varied engagement processes, partnerships are many and varied and collaborative links are strong.

climate change consultants and industry managers and decision makers. Expertise includes scientific, technical and social skills.

Processes for engagement have included seminars, forums, conferences, workshops, training programs, website information, an exchange of information via emails, phone calls and meetings, assessments, collaborative projects, regular meetings, joint funding proposals, reviews, participation on boards and committees, good news stories, conversations, genuine listening to and incorporating feedback into planning, policy and action. In many cases personnel have been employed to drive the process within organisations and engagement has happened within regions and with people on “their own turf”.

As a result of these numerous and varied engagement processes, partnerships are many and varied and collaborative links are strong. At the recent State Climate Change Adaptation Showcase Conference, many of the 170 personnel who attended knew each other, had worked together or were familiar with one another’s contribution to climate change adaptation in the state (Figures 4-6).

→ Engagement lesson learnt:

Choose the communication channel that is right for your audience and engage with them on their own turf for successful and strong collaboration and links.

Connectivity

One of the focuses of the state and local government partnership approach has been to develop tools that enable decision makers and managers at all levels to integrate the outputs of climate change adaptation research and assessments into existing frameworks. For example, the development of practical tools to integrate climate change risk and vulnerability assessments into Council operational and financial management plans, or emergency management planning processes. Every Council in the State now has a climate change risk assessment and will take part in a regional vulnerability assessment to identify in partnership with other key stakeholders in their region what the best options for climate change adaptation action should be. All of the work undertaken in SA has provided an ever expanding connection to additional personnel, knowledge, resources and funds for continuing adaptation both state-wide and nationally.

The tools and guidelines developed provide practical assistance for users to transfer climate change adaptation into a broad range of activities at numerous levels that are currently in use by state and local government, industry and community groups.

Within organisations there have been champions at many levels who provided an entry point to raise awareness of climate change adaptation and who

One of the underlying themes of climate change adaptation in SA has been the concept of “weaving climate change into the business of local government” – getting a “culture of climate change awareness into everything we do”.

were then able, with support from management, to implement actions. An evidence based-approach that builds on the scientific facts of climate change and identified risks to generate support to find solutions, and then implement them has been identified as a critical part of the process.

Once support and action for climate change adaptation has been endorsed by an organisation, then connections with external parties can be further developed. Input from external networks and organisations have provided the support necessary to develop rigorous and practical solutions to climate change and implement the identified actions. In other words, work has built on “a community of knowledge” and sound scientific principles.

One of the critical factors that gave momentum to the regional approach was the ability of the State to offer each region seed funding to encourage them to participate in the process. State Government highlighted that it would only pursue these processes if there was significant partner contribution from other regional leadership organisations. This approach ensured that regional partners had a genuine stake in the outcome and ensured active engagement throughout the process.

→ **Connectivity lesson learnt:**

With the support of management, climate change adaptation ‘champions’ have been raising awareness and implementing actions.

Sustainability

One of the underlying themes of climate change adaptation in SA has been the concept of “weaving climate change into the business of local government” – getting a “culture of climate change awareness into everything we do”. This concept ensures that the work that is underway now will be integrated into existing systems and processes and will have a life beyond those people who are doing it now. The process of building systems and practices that will be inherited by future decisions makers within each organisation will mean that climate change adaptation becomes something that everyone does without special consideration.

The process of inclusive, integrative climate change adaptation at a state level provides the capacity to identify and reduce cases of maladaptation and opportunities for flexibility in response to future uncertainties. Bringing stakeholders from a range of sectors to the same table to identify adaptation actions means that responses that might create problems in other sectors are identified early.

At one workshop a participant from the economic sector of the region realised that the plan to promote mining will cause problems with water availability as the industry competes with agriculture and the environment for an allocation of the limited resource. Assessments of what people in the region value are important for assessing what trade-offs will be required to adapt to climate change and have been part of the adaptation planning process.

→ **Sustainability lesson learnt:**

A “culture of climate change” ensures that the work undertaken now will be integrated into systems and processes to have a life beyond those people doing it presently.

Cost

Initial cost benefit analyses (CBA) for climate change adaptation were undertaken in some cases and identified significant assets at risk from climate change. However, CBA are a quantitative, financial tool not well suited to the complexities of climate change adaptation in the same way as it can be used for mitigation. Partners have struggled to justify the costs associated with adaptation and so have tended instead to use more complex financial modelling methods such as Monte Carlo simulation or qualitative assessments as defined by measures of risk and vulnerability. In other cases, a moral or duty-of-care requirement is justification enough – “How does one justify the cost of telephoning every aged pensioner living in a Council area on a heat wave day to make sure they are ok? We do it because we have a duty of care to do so, not because there is a cost benefit to the action.”

It is recognised by the parties involved that funds for future climate change adaptation work at the state scale as is currently underway are not guaranteed. For these reasons it is considered imperative that adaptation is integrated into existing processes that sit within organisations that can sustain the momentum with their own resources

and funds. For example, the LGA SA is funded through membership fees from 68 Council members and participates in climate change adaptation work under a mandate given by the CEOs, mayors and elected members state-wide. The LGA MLS is funded by insurance premiums paid by Councils. Some Councils fund climate change adaptation work using a “revolving” fund where savings from energy efficiency are reinvested in climate change mitigation and adaptation projects. The Onkaparinga City Council has been able to source funds from residents directly as part of a dedicated climate change component on rates. Industry groups are funding adaptation as part of their risk reduction strategy. Each of these mechanisms is essential for the sustainable resourcing of climate change adaptation and has been used as leverage for funds that are available at the state and federal levels.

→ **Cost lesson learnt:**

CBA, is not well suited to the complexities of climate change adaptation, qualitative assessments and moral or duty-of-care also need to be considered.

Conclusion

Climate change adaptation “is achievable! People struggle with the complexity of the problem but if we can decode it and transform it into something understandable we can get engagement.” Create pathways to enable understanding and uptake of ideas and actions – both technical and social. Make people feel that they are part of something bigger. “Find an entry point”.

How do you start a conversation about climate change that triggers interest about climate change? What language will best capture a personal or organisational interest in the climate change adaptation process? It will be different for each individual, organisation and sector. Find the opportunities and champions and work with them. You will “find champions in the weirdest places”!

Be prepared to listen to the different perspectives and angles on the problem. Develop a strategic plan based on a vision of what is needed and then “grab a good idea when it comes along and back it”. “Be adaptable!”

Gaps and future challenges

Knowledge gaps are identified as part of the adaptation process and solutions to address them considered for future action. For example, regional climate change adaptation planning processes often include an analysis of gaps that are then put forward as projects for resourcing from local, state or Australian Government sources. Gaps that are not resourced now are kept on file for future opportunities.

Links to more information and projects

LGA SA Website:

www.lga.sa.gov.au/site/page.cfm?u=1544

SA Climate Change Website:

www.sa.gov.au/climatechange

Coast Protection Board Website:

www.environment.sa.gov.au/conservation/coastal_marine/coast_protection_board

NCCARF Website:

www.nccarf.edu.au

DCCEE website:

www.climatechange.gov.au

CSIRO Climate Adaptation flagship website:

www.csiro.au/Organisation-Structure/Flagships/Climate-Adaptation-Flagship/ClimateAdaptationFlagshipOverview.aspx

Bureau of Meteorology climate change website:

www.bom.gov.au/climate/change/



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