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School of Social Sciences**



**Who is Best Placed to Make What Decisions?
Multilevel Governance and Adaptation to Climate Change –
Some Observations from South Australia.**

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Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint award of this degree.

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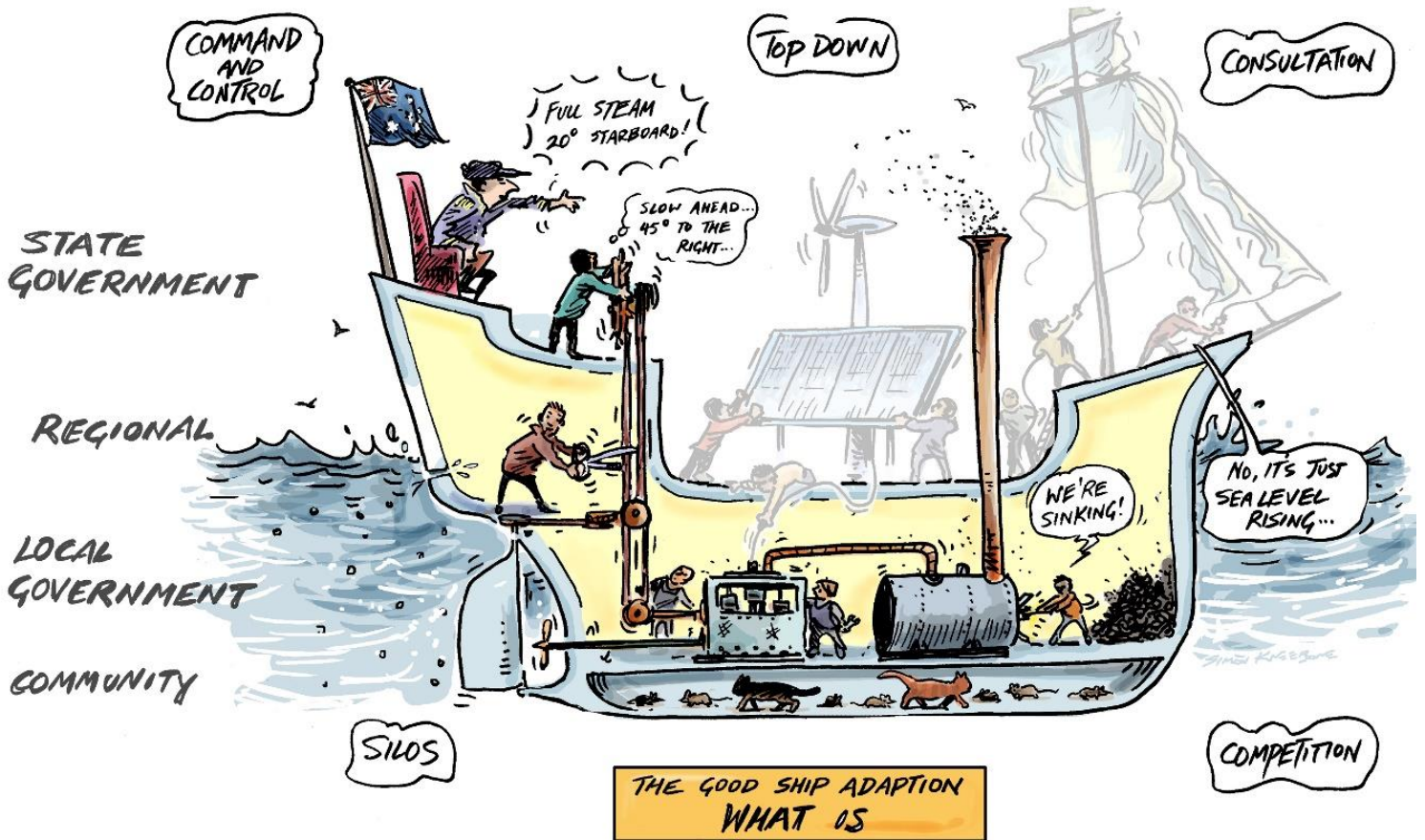


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Frontispiece. 'The Good Ship Adaptation – What is'

Adaptation is a key response to addressing climate change. It recognises that even if all emissions ceased today there are enough greenhouse gasses in the systems to produce significant global warming. Current practices are insufficient to mitigate this warming. Top-down governance, a silo mentality and competition fragment approaches to address climate change. Different approaches are required to move away from the current business as usual approach.

(See Chapter 8, Figure 8.2 for The Good Ship Adaptation – What Could Be for further discussion).

Dedication

I dedicate this thesis to Kerry Thomas and Professor Guy Robinson. Both have gone beyond what might be expected in supporting me in this research over the extended period. Kerry has encouraged me to fulfil a lifetime's dream and Guy has persisted in keeping me grounded in the practicalities of producing a substantial piece of work.

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A thesis is like a work of art. There are the initial inspirations and idealistic conceptualisations of what the final product will be like and how the whole process will unfold and of course the aspirations of where the work will take you into the future. The journey takes you to unexpected places of discovery and awareness, and for some, enlightenment. There are periods of joy and happiness and times of uncertainty and doubt if not confusion. You struggle and grapple with beasts and demons across the days and nights and months and years. Persistence, commitment, determination, and stubbornness somehow get you through. But this is not a journey you take on your own. Many others, in several ways, support, challenge and encourage, some by just being there and others not even being aware of what you might have learnt from them.

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Abstract

Coordination of decision making between organisations at different levels is central to Multilevel Governance (MLG). Organisations involved in adaptation to climate change generate the best outcomes if they work collaboratively, not competitively, to address this global to local issue. Multilevel Governance, a theory developed in the European Union, is increasingly being applied across the world and in a diverse range of sectors including adaptation to climate change. MLG is a contested theory or concept and unique to each context; defining MLG at the start of any application is necessary to enable explicit framing of that practice. MLG is defined here as a system of processes grounded in negotiations between multiple levels of organisations resulting in the allocation of decision-making authority based on the principle of subsidiarity. MLG thus provides a useful framework to negotiate the best people in the best positions collaborating to make the decisions that are most relevant to them. That is, making decisions they are best placed to make. Who decides what is a continuous negotiated process based on agreed values in each context. Is MLG being used in Australia and South Australian in the climate change sector? If not, what might it take to support a more rigorous application of MLG? This research explores MLG in South Australian adaptation to climate change using Regional Adaptation Planning (RAP) as a case study. Four levels of governance are active in RAPs: state government, regional landscape boards, local government, and community groups. Key informant interviews were used to explore who makes what decisions and what is required to build governance practice in the RAP process. Results indicate that there is a wide range of decision-makers throughout the process, coordination between organisations is weak and while most of the basic foundations of a MLG system are in place they need to be strengthened and built upon. This research makes contributions to resolving the tension between MLG as a descriptor, as is currently common practice, versus a theory which informs project design and implementation. The research elevates subsidiarity to a major component of MLG promoting partner interdependence and project success. It further explores the relationship between MLG and polycentric governance PCG and how this may contribute to governance praxis. Recommendations for consolidating governance praxis, developing the enabling processes, adopting long-termism, and sustaining networks and resourcing are

presented. Recommendations include building a comprehensive community of practice for governance, strengthening the manifestation of enabling processes, and institutionalising and resourcing the application of MLG in designing future programmes across all levels. Ultimately, shifts in power dynamics and transitioning to a collaborative ethic are required to build robust coordination practices and to justify the attribution of the neologism MLG.

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List of Acronyms and Abbreviations

AG	Adaptive Governance
AECOM	Architecture Engineering Construction Operations and Management
ALGA	Australian Local Government Association
AMLR	Adelaide Mount Lofty Ranges (NRM) Board
AMLR NRM	Adelaide Mount Lofty Ranges Natural Resource Management Board
AP	Adaptation Pathways
CARE	Community Action for the Rural Environment
CAS	Complex Adaptive Systems
CCA	Climate Change Adaptation
CEO	Chief Executive Officer
CMA	Catchment Management Authority
CO ₂	Carbon Dioxide
COAG	Council of Australian Governments
COP	Conference of Parties
COSAC	Conference of Parliamentary Committees for Union Affairs of Parliaments of the European Union
CAN	Carbon Neutral Adelaide
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CWMB	Catchment Water Management Board
DEH	Department of Environment and Heritage
DENR	Department of Environment and Natural Resources
DEW	Department of Environment and Water
DEWNR	Department of Environment, Water and Natural Resources
DWLBC	Department of Water, Land and Biodiversity Conservation
EC	European Commission
EPICCA	Eyre Peninsula Integrated Climate Change Agreement
ESG	Earth Systems Governance
EU	European Union
FTE	Full-Time equivalent
GBRMP	Great Barrier Reef Marine Park

GBRMPA	Great Barrier Reef Marine Park Authority
GHG	Greenhouse Gas
GWLAP	Goolwa to Wellington Local Action Planning (Association)
IAP2	International Association of Public Participation
IPCC	Intergovernmental Panel on Climate Change's
IVA	Integrated Vulnerability Assessment
KI	Kangaroo Island
KPI	Key Performance Indicator
LA21	Local Agenda 21
LAP	Local Action Planning group
LED	Light-emitting Diode
LG	Local Government
LGA	Local Government Association
LGASA	Local government Association of South Australia
LIDAR	Light Detection and Ranging
LMAC	Local Marine Advisory Committees
MDBA	Murray Darling Basin Authority
M&E	Monitoring and Evaluation
MERI	Monitoring, Evaluation, Reporting and Improvement
MLG	Multilevel Governance
MLS	Mutual Liability Scheme
MS	Microsoft
NCCARF	National Climate Change Adaptation Research Facility
nd	no date
NGO	Non-Government Organisation
NRM	Natural Resource Management
NR AMLR	Natural Resources Adelaide Mount Lofty Ranges
NR SAMDB	Natural Resources South Australian Murray Darling Basin
P#	Participant number (interviewee)
PO	Participant Observation
PCCC	Premiers Climate Change Council
PCG	Polycentric Governance
PIRSA	Primary Industries and Resources South Australia
QUANGO	Quasi autonomous Non-Government Organisation

RAP	Regional (climate change) Adaptation Plan
RAPs	Regional Actions Plans (exclusive to NR SAMDB)
RDA	Regional Development Australia
RH&C	Resilient Hills and Coasts (RAP region and Steering Committee)
SA	South Australia
SAFECOM	South Australian Fire and Emergency Commission
SAMDB	South Australian Murray Darling Basin
SAMDB NRM	South Australian Murray Darling Basin Natural Resource Management Board
SES	Social ecological systems
SLA	Service Level Agreement
SOG	Senior Officers Group
TORs	Terms of Reference
UNDP-GEF	United Nations Development Programme – Global Environmental Facility
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
URPS	Urban and Regional Planning Solutions
WSUD	Water Sensitive Urban Design

Note:

Several codes denoting types of evidence are used throughout the results chapters. These include:

- (P# Po# abbreviation) e.g., (P12 Po1 NRM) denoting Interviewee 12, position of quote in transcript and sector interviewee belongs to. Mostly used after quotes from interviews
- (PO# Organisation) Participant observation activity, e.g., (PO8 Government) participant observation active 8 with state government. See Appendix 5 for list of PO activities.

Chapter 1: The Research Context

1.1. Introduction

Climate change affects everyone, and everyone, even in some small way, contributes to climate change. Everybody must make some decisions about their contributions to climate change from the food we eat to setting global targets for greenhouse gas emissions. Of course, people in authority across all levels of organisations make decisions affecting climate change in their official capacities and also as individuals. Are the right people in the right places making the decisions they are best placed to make?

Organisations, from local community groups to international institutions, play key roles in managing the world's affairs including addressing climate change. Are these organisations collaborating and coordinating their decision-making processes and governance practices to bring about the best possible outcomes?

Multilevel Governance (MLG), a theory developed in the European Union (Bache 2010, 2012; Hooghe 1996; Hooghe & Marks 2001; Jordan 2001; Jordan et al. 2012; Milio 2010) in the context of European cohesion policy and integration, is increasingly being applied to decentralising decision making across nested hierarchies of governance. However, MLG is a contested theory or concept and unique to each context, each having its own definition. Defining MLG at the start of any application is necessary to enable explicit framing of that practice. MLG is defined here, to set my position, as a system of processes grounded in negotiations between multiple levels of organisations resulting in the allocation of decision making authority based on the principle of subsidiarity. MLG thus provides a useful framework to negotiate the best people in the best positions collaborating to make the decisions that are most relevant to them. That is, making decisions they are best placed to make. Who decides what is a continuous negotiated process based on agreed values in each context.

So, is MLG being used in Australia and South Australian in the climate change sector? If not, what might it take to support a more rigorous application of MLG? This research explores MLG in South Australian adaptation to climate change using Regional Adaptation Planning as a case study. Four levels of governance, a subset of a larger

nested hierarchy (see Figure 1.1), are active in Regional Adaptation Plans (RAPs): state government, regional landscape boards, local government, and community groups. Coordination of decision making, traditionally considered weak in an essentially centralised system, between these levels is critical for effective and efficient effort in adapting to the increasing effects of climate change. This research explores options for building robust coordination practices to justify the attribution of the neologism MLG to this context.

This chapter describes the context, the problem and the objectives of this research and provides a map of the thesis.

1.2. Governance

Good governance is a critical component of effective management in any sector not least in addressing complex issues that have both local and global effects, like climate change (Bulkeley 2005; Bulkeley et al. 2009; McGray et al. 2007; Paterson, Humphreys & Pettiford 2003; Wood & Mackenzie 2016). Adaptation to climate change needs to be well governed and the appropriate people and organisations, at various levels, need to coordinate their decision making on adaptation to climate change (Bulkeley et al. 2009).

Governance is a contested concept (Bache & Flinders 2004; Ison & Wallis 2017), and it means different things to different people. It is also context and time specific (Bevir 2010). Kooiman defines governing and governance as:

Governing can be considered as the totality of interactions, in which public as well as private actors participate, aimed at solving societal problems or creating societal opportunities; attending to the institutions as contexts for these governing interactions; and establishing a normative foundation for all those activities. Governance can be seen as the totality of theoretical conceptions on governing (Kooiman 2003, p. 4).

These definitions introduce several elements which will be developed and explored throughout the thesis. Good governance is further explored by a suite of adjectives

which highlight specific facets or modes of governance. These include, for example, adaptive, anticipatory, reflexive and networked governance. These are discussed further in Section 2.3.3 Good Governance and in Table 2.1 Additional modes of governance.

My perspective on governance is that it is the processes used by a range of individuals, institutions, and organisations to manage their business, independently and collaboratively, through the making and implementation of decisions. The governance focus in this thesis is on decision making and specifically focusing on which levels of organisation are making what decisions and if and to what extent organisations at one level are aligning their decision-making processes with organisations in other levels.

The thesis explores multilevel governance as a concept and/or theory (Hooghe & Marks 2001a; Klein & Kozlowski 2000; Piattoni 2009, 2010) which can add value to contemporary governance practice in South Australia. It is acknowledged that MLG is applied, to some extent, in some aspects of the governing of climate change in South Australia. Judging by the limited current use of the neologism multilevel governance, this application is mostly implicit, is neither systemic nor comprehensive and tends to be applied more specifically within state to region collaborations. The question of what is being lost by this limited application emerges.

While MLG is a contested theory and adhering to a rigid definition can be problematic, articulating a position from the beginning can assist in framing the research and therefore the interpretation of the material presented. My definition of MLG, developed throughout the research is:

...the processes making up governing systems which are grounded in continuous (re)negotiations amongst multiple levels of nested organisations which results in (re)allocation of decision making authority and responsibility based on the principle of subsidiarity.

This definition highlights:

1. MLG as a system of process that,
2. Requires continuous negotiation,
3. Involving all stakeholder levels to
4. Allocate authority and responsibility to

5. Those levels best placed to make decisions.

It further highlights the *a priori* design of programs based on the theory of MLG, the appropriate allocation of resources and the establishment of effective information management systems and capacity development processes.

This definition based on Marks (1993) and Hooghe and Marks (2001b) provides a lens for the fieldwork and data collection, interpretation and analysis covered in the rest of this thesis.

Application of the principle of subsidiarity (Dahl 1999; Follesdal 1998; Kalb 2013) is seen as relevant in this context for several reasons. These include that for some time the South Australian State Government has supported the policy of regionally based natural resource management organisations including Regional (climate change) Adaptation Planning (South Australian Government 2004, 2012). Subsidiarity informs some of the thinking about who is best placed to make what decisions regarding adaptation to climate change and recognises that government is not the same as governance (Rhodes 1996) i.e., that it is not only governments that govern.¹

1.3. Climate Change

Climate change is seen as one of the most critical global issues affecting the planet, and most living species and many natural systems directly or indirectly (UNFCCC 2015a). It is also likely to affect most human activities across the globe. While there is substantial scientific support from national (CSIRO and Bureau of Meteorology 2015; Hope et al. 2015; Timbal et al. 2015) and internationally recognised experts (IPCC 2013, 2014a, 2014b, 2014c) climate change is also a highly contentious issue between those who support the concept of human enhanced or anthropogenic climate change as ‘a common concern of humankind’ (UNFCCC 1992, 2015a) and those who are not

¹ Note of terminology unless otherwise indicated: *state* refers to a subnational Australian State or Territory jurisdiction, *region* refers to a sub-state jurisdiction usually either a Natural Resource Management Region (under the NRM Act 2004) or a Planning Region under South Australian Government policy.

convinced the science proves the case (Dunlap, McCright & Lever-Tracey 2010; Productivity Commission 2012; Tranter 2017; Tranter & Booth 2015).

It is easy to get caught up in the debates on whether anthropogenic climate change is real or not, and the extent of the impacts: will it get to be two or three degrees hotter on average by 2030? It is equally easy to become embroiled in the thrust and parry of facts, counter facts (and even alternative facts), policies, politics, and strategy - a game played by many governments. The intention here, however, is to avoid these debates as much as possible because they are seen as major distractions detracting from the focus of the thesis which is on the governance of adaptation to climate change; specifically, focusing on coordination of decision making about adaptation to climate change.

Given the politicization of government agencies, the power and resources associated with addressing climate change and a common assumption that only governments govern, politics and political factors will be an important component in the ensuing discussion and analysis. The relative importance of the politics over the science, (despite the best science available being used for making decisions) is based on the extent to which the politics plays a role in the decision making through regulation and allocations of resourcing. Staying away from a focus on the science of climate change is easier and scholars interested in this aspect of climate change are referred to the substantial amount of material produced on a daily basis (Oreskes 2004; Stocker 2014).

‘Climate change’ is used here to mean anthropogenic climate change – that is climate change resulting from many human activities around the world and across all countries. While it is generally accepted that anthropogenic climate change occurs (Ferguson 1988; South Australian Government 1989), it is recognised that ‘natural’ climate change also occurs but with different greenhouse gas components, to different extents, scales, rates, and timelines (Riebeek 2010; Stocker 2014). It is naive to think that the extent of global human activities does not result, in all probability, in some significant negative impacts on the functioning of natural global systems at local to global scales from species extinction to broader ecosystems collapse.

Addressing climate change is generally divided into two key areas: climate change mitigation, which explores the reduction in emissions of greenhouse producing gases

such as CO₂, and methane, and climate change adaptation, which recognises that despite anything humans may do now there will be some impacts to future living patterns and that people must adapt to these changed conditions. While addressing mitigation and adaptation are not mutually exclusive, there have been trends, at least in South Australia (Australia Government 2013; South Australian Government 2012), to concentrate on one or the other. Given the research focus of this thesis is on governance the assumption is that the governance of mitigation is not vastly different to that of adaptation, and as there is still an emphasis on adaptation at the state level, the research focus will be on the adaptation to climate change.

A further premise is that everybody contributes to greenhouse gas (GHG) emissions, to various extents and in various ways, and therefore to differing degrees, everyone should be responsible for addressing the impacts of climate change (South Australian Government 2012, p. 9), individuals are as important as states (Barr, Gilg & Shaw 2011). All efforts in addressing adaptation to climate change need to be coordinated to enable the most effective and efficient implementation – if everybody ‘picks and chooses’ what they want to do we are likely to end up with gaps, overlaps and maladaptations, and risk not generating the desired outcomes. This recognises and acknowledges the varying capacity to take actions and the inequities associated with the ‘right to develop’ (Baer et al. 2009; Orellana 2010) and disproportionate impacts on the most vulnerable who are often the least responsible for generating emissions but impacted the most (Mendelsohn, Dinar & Williams 2006).

This thesis uses climate change as a lens through which to explore governance arrangements. Climate change was chosen from other possibilities, such as water management, as it provides a better illustration of local to global dimensions and interdependencies, not least of which is that while it may be easier to appreciate what can be done by individuals at a local level, direct contribution to any specific global results of local actions is more challenging. This global to local perspective also highlights the interconnectedness of the ‘levels’ and therefore the need for promoting greater coordination across these levels. As one moves from the local to state, national and international arenas the politics becomes more prominent. This research therefore focusses on state and sub-state levels of the local to global hierarchy.

Levels, within the context of this research, are taken to be largely discrete layers within the nested hierarchy (see Figure 1.1 and discussion in Section 2.5) of organisations predominantly involved in natural resources management within South Australia. The state and substate context, the focus of this research, is a nested subset of the local to global hierarchy which informs and influences, in various ways, the state context. To some extent these levels (sometimes called scales) are arbitrary in that the boundaries between the 'levels' are fuzzy and dynamic and vary across geographic space and time. While some equivalence of levels across the state, and probably nationally (in other states and territories) and internationally (in other nations and provinces), may be apparent, they are likely to differ in terms of key actors and the respective roles each actor may play in each region. For example, in one region, Local Government may play a leading role by hosting a Regional Adaptation Planning process whereas in another region Local Government may play a lesser role. These differences are often based on local leadership, organisational interests and cultures and circumstances. The respective level still exists but may vary in the contributions to the process.

Four levels of organisations in South Australia have been chosen: State Government (in this case primarily the Department of Environment Water and Natural Resources (DEWNR)), regional organisations (here targeting regional Natural Resource Management Boards (NRM), recognising that they are now part of State Government), Local Government (acknowledging that in South Australia, Local Government exists by virtue of State legislation, specifically The Constitution Act 1934 (SA) and the Local Government Act 1999 (SA) (South Australian Government 1961, 1999) and finally local community groups (See Figure 1.2). These levels are clearly not completely independent; even the community group is mostly dependent on funding directly or indirectly from the State. From a climate change perspective, the situation is complicated by State Government nominating Regional Planning areas as the spatial scale for the development of Regional Adaptation Plans. In the chosen research area, this results in several boundary overlaps and some duplication.

Multiple domains exist within MLG and adaptation to climate change beyond those chosen here including industry, education and traditional owners. It was necessary to limit the number of domains to a manageable level to facilitate the potential emergence of expressions of MLG if any existed. Regional NRM played a key role in developing

the RAPs and local government has an entrenched culture which does not manifest MLG well. The RAP steering committees also provide an opportunity for some innovative partnerships between organisations which had previously not worked together.

Within this hierarchy, multiple pathways could be explored to gain an understanding of the existence, extent, and nature of coordination between levels. Each pathway would be discrete and unique, offering different insights. Reconciliation of these different approaches taken at any one level would need to occur at each higher level as one moves up the hierarchy. For example, local council needs to reconcile, in some way, all community groups operating on relevant issues with its boundary and each RAP needs to do the same with councils, incorporating their specific interests, within its boundary. The State Government DEWNR equally has to reconcile the 12 RAPs into a state response to present a consistent state-wide approach.

Figure 1.1 below shows four levels of organisations involved in the Resilient Hills and Coasts Regional Adaptation Planning process. The central blue hierarchy shows one pathway making up part of the network; these four organisations are part of the central core of organisations involved in this research. There are multiple pathways which interconnect and overlap; each discrete and unique depending on the specific organisation, the people within those organisations and the context of each. The thickness of the blue arrows represents an example of the possible varying strengths of the relationships between those organisations (SAMDB – South Australian Murray Darling Basin, NRM – Natural Resource Management).

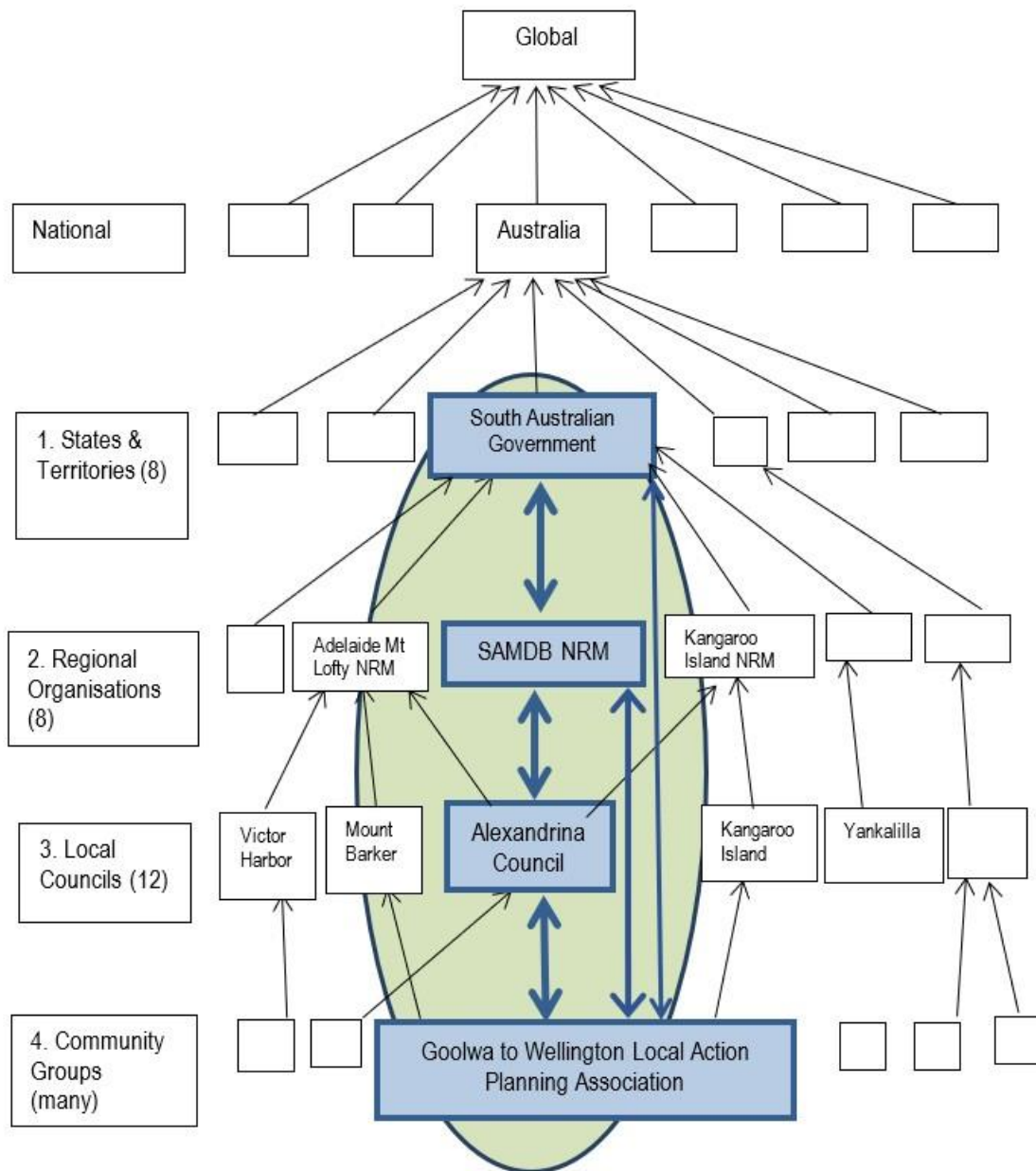


Figure 1.1 Organisational Hierarchy

Climate change is also a wicked, if not super wicked², problem (Head 2014; Levin et al. 2012; Riedy 2013; Termeer, Dewulf & Breeman 2013), multifaceted and complex. These descriptors bring a suite of framings which inform how ‘the problematique’ (Ison,

² Whilst there is no definitive formulation of wicked problems (Rittel & Webber 1973) they tend to be complex, dynamic, difficult, or impossible to define and solve, have many interdependencies, generate further problems, and tend to be beyond any single organisation to deal with (Australian Public Service Commission 2012). Super wicked problems have four additional features (Levin et al. 2009): time in running out; there are weak central authorities; those who cause the problems seek to solve them; and hyperbolic discounting pushes responses out when immediate action is required.

Collins & Wallis 2015) is perceived and also addressed. Consideration of threads associated with adaptive management, adaptive governance and social - ecological systems thinking will be woven into the thesis from the literature review to the analysis and future thinking.

1.4. Geographic Location of Research

The geographic region chosen for this research (Figure 1.2) is loosely defined due to a range of overlapping organisational boundaries. The research area includes parts of the southern Fleurieu Peninsula, Kangaroo Island, and the south-western Murray Plains around Lake Alexandrina. This includes parts of two Natural Resources Regions: the Adelaide Mount Lofty Ranges (AMLR) and the South Australian Murray Darling Basin (SAMDB). It also includes all the Resilient Hills and Coast Regional Adaptation Planning (RAP) region and process and the south-western parts of the SAMDB RAP. The RAPs are based on South Australian Government Regional Planning areas (Figure 1.3), which are essentially groups of local councils.

This area was chosen because it provides a good representation of a subset of the range of adaptations to climate change issues and a diversity of climate change impacts, from the impacts of extended drought (Millennium drought) to sea-level rise and storm surges. It is close to where I have lived and worked for the past 15 years; I therefore have some personal experience and understanding of the background and history of the issues, policies, and management strategies. I have also, in varying capacities, personally engaged with several the organisations involved in activities related to adaptation to climate change. I therefore have an appreciation of the potential application of MLG as a system of coordinating governance practice within the context of adapting to climate change given, we are beyond mitigating significant impacts from historic emissions.

The study area ranges from undulating hills, rising up to 712m at Mt Lofty, throughout the Southern Mt Lofty Ranges to flat flood plains around the River Murray and Lower Lakes. Activities in the areas include dryland cropping, irrigated vineyards/horticulture, sheep and cattle grazing, fishing, and tourism. It is an area of relatively low population density and middle range socio-economic status. Parts of the Southern Mt Lofty

Ranges fall within the Greater Adelaide Region and thus under the influence of the administration of Adelaide. Areas outside the Greater Adelaide Region are less influenced by Adelaide.

During the period of the research, the South Australian Government has been a Labor government whereas the Federal Government has been a Liberal National Coalition dependent on minor parties in passing some legislation. The differing political stances have had some influence on strategies and actions the various governments have taken, particularly at the international level.

This research was primarily conducted between 2015 and 2017 and this time period is the focus of the research. The research does, however, draw on a period from approximately 1990 to 2015 as this has laid the foundation for many policies and approaches especially within the South Australian Government.

Projected changes (Charles & Fu 2015; Hope et al. 2015; Resilient Hills and Coasts 2016b) to the regional climate include:

1. Increased average temperatures
2. More hot days
3. Decreased winter rainfall
4. Increased number of extreme rainfall events
5. Rising mean sea level

Figure 1.2 below shows the research area (red) and local government boundaries. The red bounded area forms the boundary of the Resilient Hills and Coast Regional Adaptation Plan and the main boundary of the study area. Additional councils were involved in various way to various extents. Figure 1.3 below shows State Planning Regions used for Regional Adaptation Planning. The red oval incorporates the main area involved in this research and includes four local councils as illustrated in Fig 1.2.

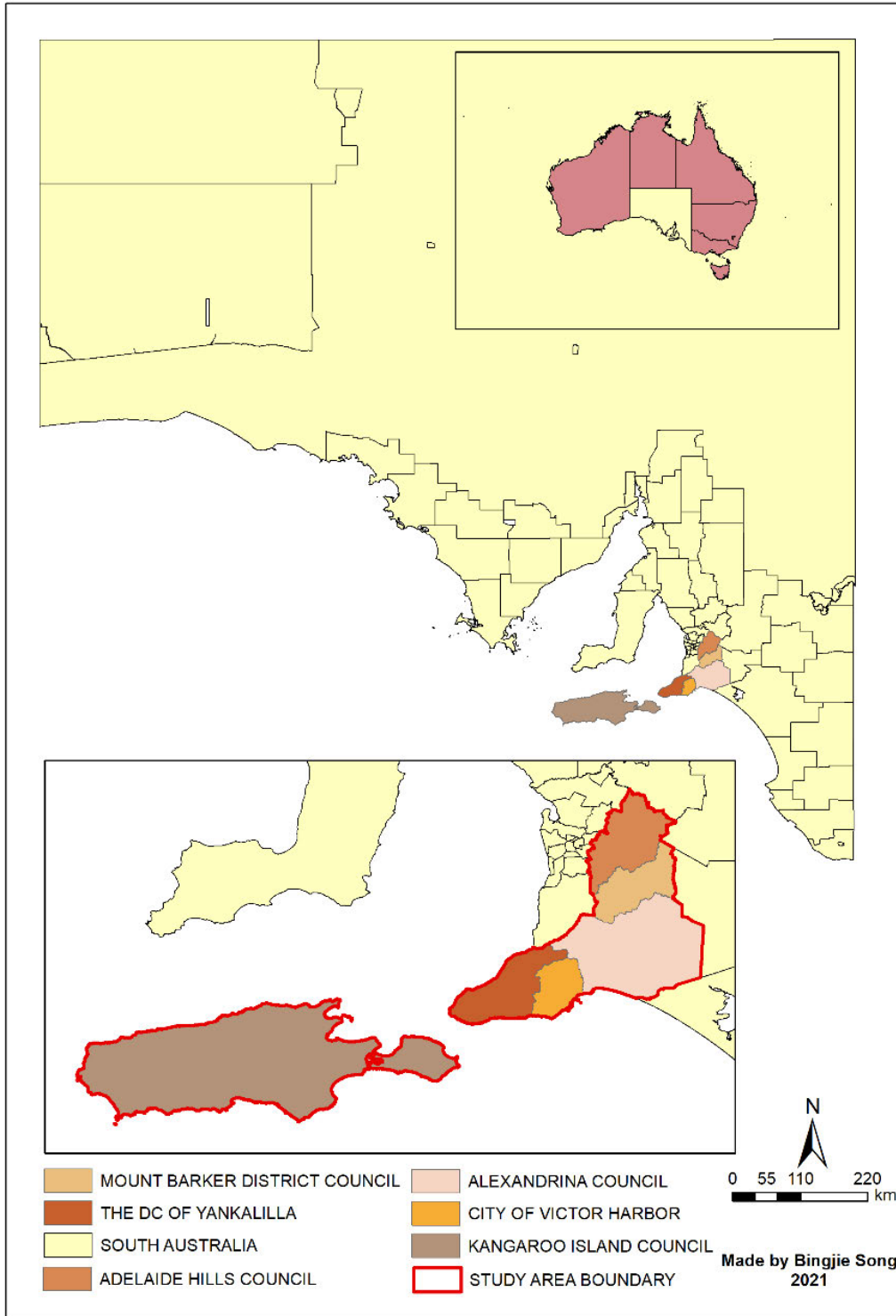


Figure 1.2 Map of South Australia

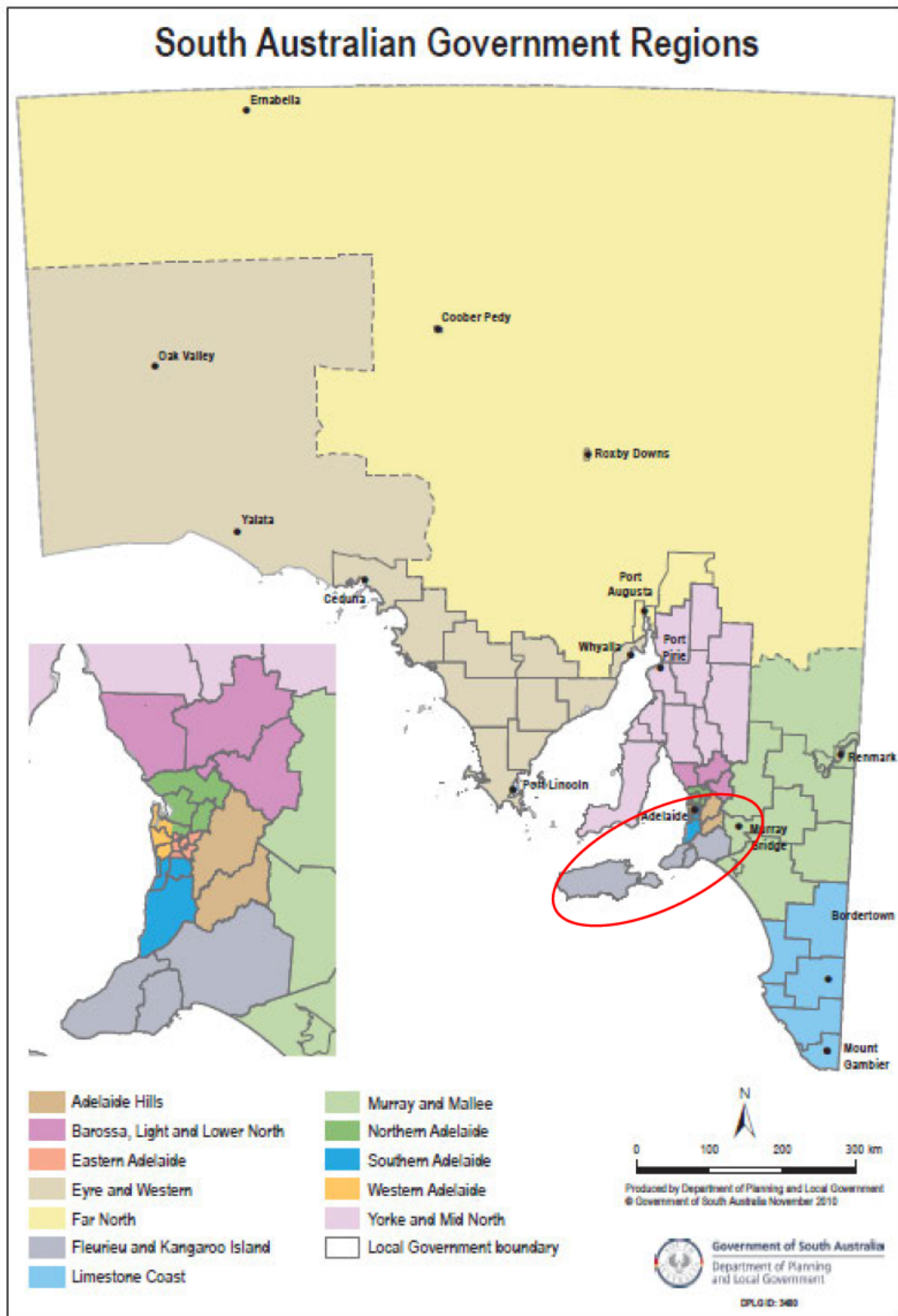


Figure 1.3 State Planning Regions

1.5. The Problem

1.5.1. Knowledge Gap

After 20 years of working in the geographical area and in the NRM industry it has become apparent that the relationships between the various organisations involved in Natural Resource Management are diverse, flexible, and dynamic; and equally informal, unclear, and uncertain. Such organisations include natural resources organisations (previously the Natural Resource Management Boards, subsequently renamed Landscape Boards), local governments and community groups such as Landcare groups or Local Action Planning Associations. Specifically, detailed roles and responsibilities relating to who did what, where, when and how are poorly articulated and sometimes poorly conceived. Whilst climate change-related policies and programs exist, they tend to lack a co-ordinated and cohesive approach. In addition, how relevant organisations operate internally is often poorly presented.

It was, and mostly still is, implicit that most natural resource management-related organisations (which may be the logical institutions to drive climate change related activities), were independent and self-determining i.e., free from central government interference. Much of this changed recently when, for example, the Natural Resource Management Boards were more formally incorporated into the South Australian Government structures. Often 'community-based' organisations were anything but and where there was a predominance, for example, of 'community members' occupying positions on management committees, the organisations were often constrained by funders (mostly government) seeking to 'buy outcomes' aligned with their policies. This is currently reflected in perceptions of 'we can't do that because there is no money for that project'. Further, basic governance capacities were, and are, generally low. 'Skills-based' board memberships brought a lot of experience to the table, but these skills did not generally include good governance and clarity around processes for decision making; for example, consistency with any strategic plan, if they existed.

So, perceived gaps include: factors determining the roles specific organisations take on; the extent to which these roles are clearly articulated and within the capacity of the organisation; how decisions are made; the extent to which decision-making processes between different organisations are coordinated; and determination of an

organisation's place within their networks and their involvement in multilevel governance systems.

The gap includes a lack of recent and local empirical evidence to contribute to discourse on application of MLG praxis in Australia which limits development of better policy making, implementation and outcomes (Howlett, Vince & del Río 2017, p. 75).

1.5.2. Theoretical considerations - a constructivist paradigm and Multilevel Governance

Two main theoretical frames are relevant to this research. The first addresses the research paradigm or philosophical world view and is briefly covered below. The other main theory frame is that of multilevel governance and this is covered in various ways throughout the thesis, primarily in the Chapter Two through the review of the literature.

Articulating a philosophical world view is important as it positions the researcher in a research paradigm which informs the ontological and epistemological approach taken. This directs the research methodology and therefore the research methods (Crotty 1998; Denzin & Lincoln 2005; Kriukow 2022). Ontology is the theory of the nature of being and epistemology is the study of knowledge (Harvey 2012-22; Ponterotto 2005).

Two much used paradigms are applied widely in social research: positivism and interpretivism. Positivism takes a more scientific approach and uses quantitative methods and information. In this approach reality is fixed and governed by some universal laws. Reality here is independent of the researcher's views so the researcher needs to be objective, thus presenting an objectivist epistemology (Blaikie & Priest 2019).

Interpretivism recognises the value of individuals' views and is more subjective; reality is constructed from a combination of many realities based on these individuals' attitudes and beliefs. Qualitative methods are generally used to uncover these beliefs and views. Here the researcher influences the context and this, in turn, influences the researcher. It is not possible to separate the knower from the knowledge (Lincoln & Guba 1985).

The position taken in this research is one where reality is considered to be variable and created by the observers; we actively construct our reality through our perceptions and beliefs. The view is that there is no single objective reality, but a subjective construct of multiple realities generated by individuals through their relationships with the world. The researcher and the participants influence the research as it influences them. Therefore, understanding individuals' views and beliefs is critical. So, an interpretivist / relativist ontology and subjectivist epistemology prioritising qualitative methods approach is used in this thesis and this is reflected in the research objective and research questions. As a result, key informant interviews, adapted participant observation, elements of autoethnography and document review are the chosen methods for this research (Conole, Smith & Wiseman 1993).

The basis for this choice is that, *inter alia*, within the chosen topic of research there is no single foundational underpinning of either the processes of constructing knowledge or the knowledge itself; perspectives vary across individuals and the knowledge is contextual and evolves. That is everybody has their own understanding of reality which is constructed based on their experience and position within the community. Further their knowledge and its meaning, is developed through interactions with others. This applies equally to the researcher – the nature of the relationship between the researcher and the participants influences the data collected and its interpretation. Validity is strengthened through the use of multiple methods including reflexivity (Attia & Edge 2017; Dowling 2016; Flick 2018; Sultana 2007) and the collection of data from real situations.

Multilevel governance (MLG) is a concept that was initially developed by Hooghe (Hooghe 1996; Hooghe & Marks 2001a, 2001b, 2003; Hooghe, Marks & Schakel 2020) and Marks (Marks 1993; Marks & Hooghe 2004; Marks et al. 1996) working in the European Union. MLG is a contested concept (Bache & Flinders 2004) not least about whether it is a fully-fledged theory or a mere descriptor (Piattoni 2009). This discussion is further developed in the next chapter, Section 2.4 below. In exploring the nature of MLG, the tension between descriptor and theory developed and considered actual practice where MLG mostly described what had happened versus other considerations which explored the theory underpinning the action. This tension is resolved in the final chapter of this thesis, Section 8.5.6.

Polycentric governance (PCG) developed by Elinor Ostrom and others (1990, 1999, 2008, 2009, 2010b; 2004; 2002), incorporates several equivalent features and is derived from work on common pool resources by the Bloomington School of Political Economy in the United States. While clearly related to MLG the nature of the relationship between these two theories has not been explored and is beyond the scope of this research. However, continual consideration of the relationship between MLG and PCG throughout this thesis aims at illuminating the relationship between the two. The relevance of this relationship is not at this point apparent.

While a substantial theoretical framework is developing around MLG several related theories provide some additional context and relevance in exploring the wicked problem of adaptation to climate change. These are explored briefly where appropriate and in Section 2.10 in more detail.

Resilience theory (Chandler 2019; Cork 2010; Djalante, Holley & Thomalla 2011; Folke et al. 2010), specifically dealing with resilience of social - ecological systems, incorporates the interdependence between and co-evolution of social and ecological systems and their capacity to deal with change and to continue to develop. Resilience embraces learning and adapting, nurturing diversity, uncertainty, self-organisation, adaptive governance, and multi-scales of operation (Moberg & Galaz 2005; Ryan 2016).

Complexity, complex adaptive systems, and systems theory (Chandler 2014; Duit et al. 2010; Griffiths, Haigh & Rassias 2007; Ison 2010a; Jessop 2005; Turner & Baker 2019) deal with dynamic networks of interactions that evolve and are self-organised in response to changing internal and external contexts and clearly cover the complex interactions involved in an ever-changing climate.

Holaracy (holarchy) (Edwards 2005; Koestler 1968, 1970) is based on the decentralisation of decision making through self-organising units or holons where each holon is a whole within itself but also part of larger whole (McMaster & Sheppard 2004). In this context there is some parallel with MLG. Many organisations see themselves as discrete units or holons, within a broader network, and understanding their interdependencies is critical for their successful functioning and sustainability.

Taking any one of these theories on their own will provide interesting but singular perspectives on the problem. Like the solutions to addressing climate change impacts, no single action at any one location will be sufficient. The most effective combination of solutions will depend on the local social-ecological context. So, to appropriate application of each theoretical approach will be informed by the local social-ecological context and this application will emerge as the context becomes clearer. These lenses reveal dynamic and subjective snapshots depending on the observers' frames of reference.

1.5.3. Objectives and research questions

How organisations at different levels within their networks currently coordinate their decision making, or not as the case may be, and what this might mean for ongoing adaptation of governance arrangements is unclear. Developing effective responses in light of the changing climate and the consequential impacts of these changes, will require ongoing innovation and adaptation. Current solutions for today's issues seem unlikely to be achieved much into the near future (Ison 2010a, p. 3). We need additional processes if we are to make appropriate changes.

This research, therefore, aims to explore the development of an adaptive governance framework where agents at different levels enhance their decision making about climate change adaptation through a greater understanding of their place within and better coordination of their networks.

1.5.3.1. Objectives

- To investigate the roles of natural resource management actors in South Australia in relation to governance of climate change adaptation and the implications for MLG.
- To explore factors influencing actors' decision making within their networks and across network levels.
- To explore options and mechanisms for enhancing governance arrangements with respect to climate change adaptation.

1.5.3.2. Key Research Questions:

1. What roles do actors in climate change adaptation decision making play and what are the implications for multilevel governance?
2. What factors constrain or enhance actors' decision making within their role and place in their networks?
3. What might this mean for building adaptive governance capacity and organisational resilience to climate change?

1.5.4. Methods

Three key methods are used for this research. These include a literature review, key informant interviews and a range of participant observation approaches. The nature of the participant observation has been negotiated with the respective organisations and therefore has varied depending on the organisation.

1. Review of academic literature and of corporate documents such as constitutions, legislation (for government and statutory agencies), policies, reports, strategic plans, governance documents including minutes of governing bodies (e.g., steering committees, management committees, boards).
2. Semi-structured interviews (Rubin & Rubin 2011) of key personnel occupying positions with their organisations where they are able to influence, inform and/or make decisions.
3. Observation (Spradley 1980), where possible, of meetings such as local council meetings and NRM Board meetings where decisions are made. The type and nature of observation was negotiated with each organisation prior to any participation.
4. Development of case studies of organisations at different levels within the network hierarchy.

1.5.5. Information Analysis

Following Braun and Clarke (2006) thematic analysis is used as the principal analysis method. It provides a higher degree of flexibility and a detailed and complex picture of

the data. Coding of transcribed data from interviews was done manually and using MAXQDA, a software program designed for the analysis of qualitative data (equivalent to NVivo). A proposed MLG framework is developed from drawing together the literature and analysis of the empirical evidence.

1.6. Thesis Map

This thesis presents a version of the story of my research, of both the topic and the process (Figure 1.4). The topic and process are intertwined. There has been and continues to be an interdependent, reciprocal, and iterative interaction between these two where my readings inform my approach, methods and fieldwork which have informed my readings and so on. So, this story is one representation of the continuous dynamic interplay, a story that is one short sequence of frames of a moving picture that started a long time ago and will continue after completing the thesis. In this sense, it is a snapshot, lasting at least three years, with multiple feedback loops retracing steps, finding new ground, and eroding some older thoughts.

Chapter 1 (this chapter) introduces and provides a basic context for the research leading to an understanding of the perceived knowledge gaps, the research questions derived from these gaps and thus the chosen methods of data collection and analysis. It provides a map for the thesis and hopefully sets the style and tone.

The literature review (Chapter 2) provides an overview of what are considered to be the essential concepts and theories relevant to this thesis, including climate change, governance, multilevel governance, and adaptation. The literature review brings together several key concepts, which at the commencement of the research lacked clear connections, enabling the presentation of a simple elegant network of connecting pathways. These connections have become clearer through the research and now provide a coherent picture of governance in South Australia at the current time. This chapter provides an in-depth exploration of multilevel governance as a basis for a theoretical framework to inform the research. It draws on several theories to develop a conceptual framework for this thesis. This framework is intended to 'explain and predict' the essential thesis of this research to generate an understanding which could enable follow-up action.

Chapter 3 presents the research methods for both the data collection and the analysis, and the connections to the theory. The following four chapters present the research findings. Chapter 4 presents a case study of regional adaptation planning (RAP) within the research area. Chapter 5 presents evidence relating to the governance of regional adaptation, and Chapter 6 that relating to the key processes enabling this governance. Chapter 7 presents the findings around the institutional arrangement supporting the RAP process.

Chapter 8 brings the literature and findings together to present responses to the research questions and provides recommendations for future transformation. This includes a briefing paper prepared for a regional organisation, designed to promote thinking and action toward a new multilevel governance system. Chapter 8 draws out the essential conclusions of the research.

Figure 1.4 below presents a schematic of the thesis. The four coloured columns represent key areas that run throughout the whole process from the context to the future and are covered in detail in Chapter 5, 6 and 7. These areas are interdependent and should be read as integrated processes that evolve and develop in response to changing contexts. The case study which makes up chapter 4, is presented in the thesis before the detailed results chapters 5, 6 and 7 to illustrate the focus area of the research i.e., to generate an image of the best fit locus or centre of any possible MLG approach. Chapter 4 also builds on the material presented in the results chapters. The bars on the right represent the changing extent (length of horizontal bar, three gradations) of the involvement of various partners throughout the process:

S – State Government
R – Regional
L – Local Government
C - Community

So, the State had a lead role in policy development, a reduced role in RAP process, a lesser role in RAP implementation and then a projected increased role in state level actions and support of RAPs. Local Action Plans (green arrow on left) takes the core implementation out of the mainstream as they will be mostly implemented independently and can be viewed as a dispersal of the RAP amongst its partners. The general flow (from top to bottom) of the diagram represents the basic sequence of the research but also the development of the RAP process. That is the RAPs were nearing

completion towards the end of the field work and the state response was developed at the time the preliminary analysis of the data. The red dashed line (- - - - -) represents the change of government from Labor to Liberal and uncertainty for the ongoing development and implementation.

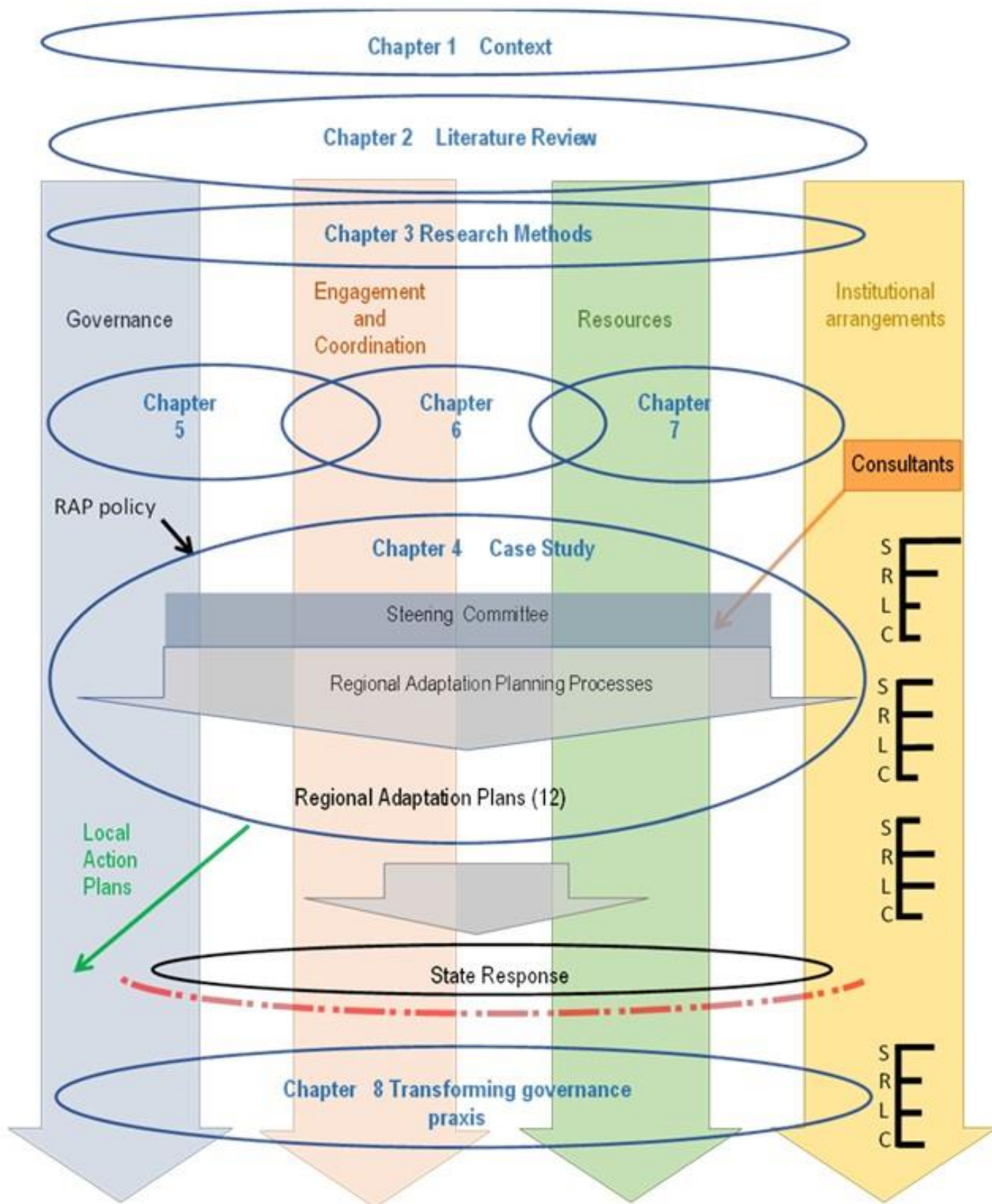


Figure 1.4 The Thesis Map

1.7. Conclusion

This thesis explores the coordination of decision making between four levels of organisations: State Government, regional entities, Local Government, and community organisations. This includes consideration of the relevance and applicability of MLG and subsidiarity and draws on previous experience and empirical evidence collected during the research. The extent of implicit and explicit use of MLG in the area and sector is explored and interpreted within the context of the development of a framework for future enhancement of coordinating governance to generate better local to global outcomes of adaptation to climate change.

Chapter 2: Multilevel Governance: Global, National, Local

2.1. Introduction

The purpose of this chapter is to explore the basic theory and practice of multilevel governance (MLG) globally and in Australia within the context of adaptation to climate change. MLG is a significant area of research with a diversity of interpretations, some of which will be addressed in detail here. This chapter starts with introductions to climate change and governance and follows with coverage of the principle of subsidiarity and the concepts of scale and level. It focusses on contextualising this research within the broader debate on the governance of adaptation to climate change. It does this by starting with a wide scope of relevant literature and specifically considering applications to the core subject of this research, MLG. It then narrows the targeting to more specific areas directly related to that core topic. Concentrating the scope contributes to refining the focus on MLG. MLG is then discussed in further detail, covering its global roots and then MLG in Australia and finally South Australia. Several peripheral areas, including complex adaptive systems, social-ecological systems, and wickedness, are covered in the last section (2.7), as they are intuitively connected to the core topic. Common threads are identified and developed throughout the chapter, and the connections between these areas and the core topics are developed further in the analysis chapters.

A key principle underpinning MLG and informing the context and the processes of the research on governance arrangements within the targeted jurisdictions is that of adaptation (discussed below 2.2). This is inherently seen as change, that is adaptation responds to change especially in response to emerging and evolving understanding and knowledge and access to it (Barr 2017). Organisational operations and policy implementation need to function in an evolving and emerging paradigm and there is a need to shift from actions resulting from assessments made within steady states to those conceived in dynamic and changing contexts. This is seen as especially relevant when dealing with the uncertainty surrounding climate change (Adger, Lorenzoni & O'Brien 2009; Palutikof et al. 2013; Pelling 2011; Schipper & Burton 2009).

Examining adaptation has ripple effects into the fieldwork and the analysis. For example, the guiding questions used during interviews did not so much evolve but rather the discussions on the questions developed through the fieldwork. So, there is an evolving understanding that moves closer to a more refined appreciation of the collective position, i.e., actions based on a shared understanding and interpreted through the individual's interpretation of the situation. While the final thesis is a snapshot of this evolution and development, it may only have some relevance for a short period as the process of implementation of the governance evolves rapidly. However, certain principles within governance should endure.

2.2. Climate change and adaptation to climate change

Climate change is a natural physical phenomenon that has been occurring as a result of natural bio-geophysical processes since the evolution of the global atmosphere (Jin, Cant & Todd 2009; Nicholls 2006, 2007). Changing climate and weather patterns are a global feature that realises local to regional impacts and has natural characteristics, such as rate of change, and causes, such as volcanic eruptions (Magee et al. 2019). The Intergovernmental Panel on Climate Change's (IPCC) definition of climate change includes changes to the climate due to natural variability (IPCC 2007c; IPCC 2022; UNFCCC 2011).

Since the industrial revolution (Abram et al. 2016), however, natural climate change has been enhanced significantly by human intervention through burning fossil fuels, deforestation, urbanisation, and intensive agriculture (IPCC 2007b; Pittock 2005). The extent and rate of human-induced climate change is responsible for many extreme weather events increasingly experienced across the Earth (Bolin 2007; Hulme et al. 1999; IPCC 2012; Kirchmeier-Young et al. 2019) and changes in probability of altered temperatures and precipitation, increases in sea-level and melting ice caps. The time scale of climate change is unprecedented (Steffen 2011). The impacts resulting from global climate change will continue, at an increased rate, unless global action is taken (Figueres et al. 2017) and urgent action is required (Steffen & Hughes 2013). The extent of past emissions is such that even in the event of an immediate complete cessation of greenhouse gas emissions, significant impacts on the future climate

cannot be avoided (Commonwealth of Australia 2010; IPCC 2014b). Mitigation can only do so much, and adaptation is necessary as well (Bosello, Carraro & De Cian 2010; Duan et al. 2019).

The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as '*... a change in climate that is attributed directly or indirectly to human activity, that alters the composition of the global atmosphere, and that is in addition to natural climate variability over comparable time periods*' (Article 1) (UNFCCC 1992, 2011). That is, it focusses on human-induced climate change.

Addressing anthropogenic climate change (henceforth climate change) is a human challenge of concern to humankind (UNFCCC 2015b) that requires actions across all levels of organisations from international organisations such as the IPCC, to local non-governmental organisations (NGOs) and community groups. While climate change is physical in nature, addressing its impacts are social, economic, and political issues (Giddens 2009; Grundmann 2016; Stern 2006) requiring social, economic, and political solutions.

The climate science that sits behind climate change has been well covered by many publications (Dessler & Parson 2019; Garnaut 2008; IPCC 2007b, 2018b; Romm 2016). Given the sometimes strong differences of opinions around climate change, exploring this aspect can also be a major distraction from addressing more practical elements of climate change (Garrard et al. 2019), such as how to deal with it. The focus of this review will therefore be on MLG, and related concepts as applied to the adaptation to climate change.

Managing climate change traditionally falls into two broad areas of action: mitigation and adaptation (Biesbroek, Swart & Van der Knaap 2009; Chen, Suzuki & Lackner 2017; Klein et al. 2007; Vijayavenkatarman, Iniyani & Goic 2012). Mitigation covers reducing the causes of global warming such as increased atmospheric carbon dioxide (CO₂), methane and other gases resulting from a range of human activities such as burning fossil fuels, land use change and urban development (Edenhofer et al. 2014). Adaptation recognises significant changes to the climate and the need to adapt to these changes (Field et al. 2014; IPCC, 2014 2014; Parry et al. 1998; Rood 2017) by, *inter alia*, changing our behaviours (Permaculture Solutions for Climate Change 2020; weADAPT 2021) and infrastructure redevelopment (European Commission 2013).

However, adaptation is not just reactive but can also be proactive (Engle 2011) as in active adaptive management (McCarthy & Possingham 2007) where the emphasis is on experimental management of systems where the outcomes are not certain or may require extended time periods to emerge by which time it may not be possible to redirect future management. MLG lends itself to active adaptive governance (Hasselman 2016) (See below, section. 2.7.4).

People have been adapting to climate change for thousands of years (Adger, Lorenzoni & O'Brien 2009; Orlove 2005, 2009) and adaptation actions are the responsibility of everyone (Adger, Arnell & Tompkins 2005). Mitigation and adaptation are not mutually exclusive and must be integrated at all levels to maximise desirable outcomes including avoiding the policy dichotomy between the two (Australian Government 2010; Dansey 2013; Tompkins & Adger 2005). Adaptation is not just a system of cultural, human, and social processes (O'Brien & Selboe 2015), it is also a system of bio-geophysical processes. O'Brien and Selboe (2015) see the challenges of adapting to climate change as both personal and political. These challenges align well with those identified by Palutikof et al (2013, pp. 3-20), which include:

1. Understanding the balance of actions to adapt and actions to mitigate
2. Adaptation as transformational and adaptation as incremental change
3. Converting adaptation knowledge into action
4. Mainstreaming and leapfrogging across organisational scales
5. Measuring climate change adaptation and evaluating success.

Adaptation is defined by the IPCC (2007a, p. 76) '...as the initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects' and is '... a significant governance challenge at all temporal and spatial scales' (Adger et al. 2002).

The UNFCCC Cancun Conference of the Parties (COPs) 16 agreements include the Cancun Adaptation Framework (UNFCCC 2010a), which aims to strengthen action by supporting better planning and implementation of adaptation measures. The framework is also intended to enhance research and strengthen education and public awareness (Di Pietro Paolo 2020; UNFCCC 2010b). At a national level the

agreements also include commitments to national adaptation plans (Morgan, Nalau & Mackey 2019; Tompkins et al. 2018).

Adapting to climate change is a complex system of processes presenting a confusion of interrelated problems with often competing responses and contrasting frames (Dewulf 2013; Termeer et al. 2016). *'Dealing with climate adaptation not only demands a rethink of how we arrange our social-ecological or socio-technical systems but also how we govern them'* (van Nieuwaal et al. 2009, p. 8). Adaptation is a wicked problem with no clear solutions (Rittel & Webber 1973) as discussed below. The governance of these processes is also a complex system of regulation and technical knowledge (Termeer et al. 2011; Termeer et al. 2017; Vink, Dewulf & Termeer 2013). Although the science of climate change incorporates uncertainties about specific impacts at specific places and times, there is enough knowledge about the likely future nature of the climate to develop adaptations that can partially offset increased temperatures, reduced precipitation, and the greater likelihood of extreme weather events. However, the current political, economic, and social decision making is limiting the ability to address climate change. Moreover, as with other concepts, including MLG (see below), the lack of a consistent definition of climate change allows for a diversity of interpretations which can result in confusion and overlap (Anderies et al. 2013). The absence of a clear roadmap for rapidly evolving adaptation policy drove the development by the United Nations Development Programme – Global Environmental Facility (UNDP-GEF) of an international Adaptation Policy Framework (Lim et al. 2004, p. 1), which has four foundational principles:

1. *'Adaptation to short-term climate variability and extreme events serves as a starting point for reducing vulnerability to longer-term climate change.'*
2. *Adaptation occurs at different levels in society, including the local level.*
3. *Adaptation policy and measures should be assessed in a development context; and*
4. *The adaptation strategy and the stakeholder process by which it is implemented are equally important.'*

In recognising the need for building capacity to adapt to climate change the Australian Government established the National Climate Change Adaptation Research Facility (NCCARF). In undertaking over 120 projects between 2008 and 2019 NCCARF was successful in generating and delivering relevant knowledge to decision makers (Palutikof et al. 2015), building networks, a community of practice and a substantial resource base (NCCARF 2019). NCCARF was defunded in 2017.

There are many related elements of adaptation beyond building sea walls and replanting forests. Institutions need to adapt their governance arrangements (Akompab et al. 2013; Boyd & Folke 2012; Koontz et al. 2015). Community-based adaptation approaches provide valuable lessons (Ensor & Berger 2009; Nursey-Bray et al. 2013; Schipper & Burton 2009; Schipper et al. 2014). Adaptation plays a key role in international development (Inderberg et al. 2015) and progressing from climate change resilience to transformation (Nursey-Bray 2013; Pelling 2011; Pelling, O'Brien & Matyas 2015). Each one of these presents another pathway which could bring a range of flavours and nuances to the discourse.

Adaptation is the focus of this research because until recently it has been the main area of action in South Australia as manifest by the launch of the state's Regional Adaptation Plans (RAPs) policy in 2012 (South Australian Government 2012) and the high priority assigned by the Premier's Climate Change Council (PCCC) (2013). However, it must be recognised that adaptation is not a panacea. For example, Adger, Lorenzoni & O'Brien (2009) recognise the limits of adaptation, the thresholds which drive actions and the values that underpin how action is taken and when it is taken.

2.3. Governance

Governance is central to the functioning of society and yet seems poorly embraced by many. Part of this is due to a general lack of familiarity and engagement with governance practice and the association, and consequential disenfranchisement, with government and political processes. Rhodes (1996) and others (Bevir 2010, 2011; Pierre 2002) note the imprecise nature of governance with its multiple distinct meanings and uses. Rhodes (2012) further notes the increased use of governance as a change in the meaning of government; a shift in the narrative which reflects the

deepening understanding of what governance entails but also that governance is no longer, and never was, the exclusive role of government; other types of organisations, such as NGOs, hold more power and have important roles to play (Gjaltema, Biesbroek & Termeer 2020; van Nieuwaal et al. 2009).

I stipulate that governance refers to 'self-organizing. interorganizational networks' and argue these networks complement markets and hierarchies as governing structures for authoritatively allocating resources and exercising control and co-ordination (Rhodes 1996, p. 652).

Rhodes (1997, p. 660; 1996) further expands 'new governance' to be

1. Interdependence between organizations. Governance is broader than government, covering non-state actors. Changing the boundaries of the state meant the boundaries between public, private, and voluntary sectors became shifting and opaque.

2. Continuing interactions between network members, caused by the need to exchange resources and negotiate shared purposes.

3. Game-like interactions, rooted in trust and regulated by rules of the game negotiated and agreed by network participants.

4. A significant degree of autonomy from the state. Networks are not accountable to the state; they are self-organizing. Although the state does not occupy a privileged, sovereign position, it can indirectly and imperfectly steer networks.

Marin and Mayntz (1991, p. 340) build on the role of networks and add; 'Political governance in modern societies can no longer be conceived in terms of external government control of society but emerges from a plurality of governing agents. In contemporary policy making, governmental and non-governmental actors are interconnected in complex networks of interaction, exchanging information and other resources.'

Kooiman (1993a, p. 258) sees governance '*...as the pattern or structure that emerges in a social-political system as a 'common' result or outcome of the interacting*

intervention efforts of all involved actors. This pattern cannot be reduced to one actor or group of actors in particular.'

Kooiman (2003, p. 4) also distinguishes governing from governance, defining the former as: *'the totality of interactions, in which public as well as private actors participate, aimed at solving societal problems or creating societal opportunities; attending to the institutions as contexts for these governing interactions; and establishing a normative foundation for all those activities.'* This includes governing at all levels – local to global with constantly changing relationships.

Kooiman's definitions identify roles for non-state actors, the structures and agency and the societal contexts and the interactions between actors. He also draws on Giddens' (1984) structuration theory where social systems are continually reframed by the actors through their interactions; structural contexts shape individual action which in turn shape structure in an interactive and iterative way.

However, Bell and Hindmoor (2009) do not support the 'society-centred' approach to governance, arguing that government still plays a central role and its capacity to govern does not depend on the development of partnerships with non-state actors. Government, they propose, still retains considerable power to choose the rules of governance, to retain a hierarchical top-down approach to governance and in setting the agenda. They (Bell & Hindmoor 2009, p. 191) therefore define governance as *'... the tools, strategies and relationships used by governments to help govern, and identified a number of different modes of governance.'* I interpret this as not so much that government has lost power but more that other non-state actors have taken on greater governance roles and are therefore influencing governing processes – a shifting not a shrinking role of the state (Bevir 2009; Kooiman 2003).

Jessop (1998, 2002) noting the buzzword status of governance defines it as *'the heterarchy of reflexive self-organisation.'*

Defining governance is thus seen as contextually specific and an aid to understanding the context and the practice within that context – if we want to understand what governance is in any particular context, we need to define it for that context.

The emergence of the 'many faces of governance' (Lynn 2012) has resulted in an unmanageable fabrication of concepts (Offe 2009). *'The real danger is that*

governance becomes meaningless and a tautology; something happened, and therefore governance occurred (Peters 2000, p. 35). van Kersbergen and van Waarden (2004, p. 165) observe and quoted by Jordan (2008), Jordan et al (2005) and Beer (2014): that *'there is no consensus on which set of phenomena can be properly grouped under the title of governance.'*

Young (1992) cited by Lebel et al. (2006) views governance as *'... the structures and processes by which societies share power, [it] shapes individual and collective actions.'*

Pahl-Wostl (2009, p. 356) introduces four dimensions for analysing environmental governance:

- *'Institutions and the relationship and relative importance of formal and informal institutions.*
- *Actor networks with emphasis on the role and interactions of state and non-state actors.*
- *Multilevel interactions across administrative boundaries and vertical integration.*
- *Governance modes—bureaucratic hierarchies, markets, networks.'*

Governance is further understood to be *'... all processes of governing, whether undertaken by a government, market or network, whether over a family, tribe, formal or informal organization or territory and whether through laws, norms, power or language'* (Bevir 2012, p. 1); see also Bevir (2009, 2011, 2013).

The following common features emerge for the diversity of definitions: networks, government and non-government actors, hierarchies, structures, processes, interactions, sharing power, exchanging information and resources. These features form the basis of ongoing thinking about governance of adaptation to climate change.

2.3.1. Meta-governance

Attempts to address recognised failures in governance including hierarchical and market failures and network complexities (Gjaltema, Biesbroek & Termeer 2020; Jessop 2003, 2009, 2011) and the expansion of diversity of conceptualisations of governance have given rise to a higher-level consideration of governance; that of meta-governance' defined as '*...the organization of self-organization, the regulation of self-regulation, the steering of self-steering, and as collibration*' (Jessop 2011). This is where governance is shared amongst public, private, and voluntary actors, and '*power and authority are more decentralised and fragmented among a plurality of networks*' (Bevir 2009, p. 131). Actions by the state have also shifted from a command and control to a steering and guiding approach. Meta-governance '*goes beyond the unproductive dichotomy in the 'from government to governance' debate*' (Gjaltema, Biesbroek & Termeer 2020, p. 1760) and can be expressed as the governance of governance or the '*governing of mixtures of hierarchical, network and market forms of social coordination*' (Meuleman 2008, pp. 67-68). Jessop (1997, p. 576) coined the term in 1997 as '*...coordinating different forms of governance and ensuring a minimal coherence among them*' partially based on work by Kooiman (1993b).

Other scholars add a range of other characteristics to metagovernance including; its six core elements (Bell & Hindmoor 2009, p. 47); as a guide for implementing the United Nations' Sustainable Development Goals (Meuleman 2018); as exercised through interdependency theory, governability theory, integration theory and governmentality theory (Sørensen 2006; Sørensen & Torfing 2007); as a reflexive process for societal learning (Pahl-Wostl 2019), and reinforcing governments' role in governance (Bell & Hindmoor 2009; Bell & Park 2006; Porras-Gómez 2014).

Several Australian scholars address metagovernance; Bell and Park (2006) see metagovernance, which they define as the 'government of governance', as a means of bringing government back into network governance where it has a crucial role in governing new forms of governance. They acknowledge that metagovernance includes the provision of resources such as information and this can equally be a metagovernance and governance problem. Morrison (2016, p. 301) see metagovernance as the governance of governance '*whereby governments and other powerful actors gently steer policies, institutional arrangements and norms towards a*

particular outcome'. Wilson, Morrison and Everingham (2017, p. 189) claim metagovernance can be exercised by public or private actors, including regional and remote communities, and suggest using metagovernance as '*an alternative analytical lens to explore the balance of power between state and non-state actors*', However, Wilson et al (2018) caution against some private resource extraction companies' capacity to ensure subscription to deliberative democracy principles.

Jessop (2004) explores the development of multilevel metagovernance in the European Union (EU) as a reflexive process and further develops the notion of multiscalar and multispatial metagovernance which highlights some of the complexities of MLG, including limits of action at any one scale and provides a guide for addressing some of the failures of governance (Jessop 2009; 2016). Multispatial metagovernance is ancillary to and broader than MLG, network governance and other social governance issues. Multilevel metagovernance involves meta-governors from different levels acting in the same network (Hooge, Waslander & Theisens 2021).

Thuesen (2013) raises some interesting questions about the role of meta-governors and the meta-governed within the context of local groups. Working from Sorensen's (2006) definition of metagovernance as the governance of self governance, Theusen explores the metagovernance experiences of local group board members and coordinators and notes perceived differences in their metagovernance role and their experiences of those roles; maintaining motivation and building capacity are critical for metagovernance successes. This may hold some insights into the operations of the RAP across the levels not least of which may be the alignment of understanding of respective partners' understanding of governance and metagovernance.

2.3.2. Good governance

Discussions on good governance came out the expectation that markets and networks would improve inter-organisational efficiencies in development and was picked up by the World Bank in covering both technical areas and civil society (Bevir 2012). Good governance was to address concerns of legitimacy, accountability transparency and participation to strengthen civil society and reduce corruption and state power. This led the World Bank to support strong local government and decentralisation (World

Bank 1992, 1994). Good and bad governance are not confined to the Global South. The concept of good governance has subsequently been picked up by others including OECD (2015a, 2015b); see also Akhmouch, Clavel and Glas (2018), Brisbois (2020).

As with governance, defining good governance is problematic and goes beyond the absence of corruption (Rothstein 2012). Good governance is associated with better decision making and this leads to improved project management (Turner 2020a).

The relevance here is more about the integrity of the application of MLG and what constitutes good or bad MLG. As with many other processes token application can undermine the value of adopting the approach, so rather than just considering good or bad MLG, exploring thick or thin, narrow, or wide MLG and other dualities, may have more relevance here. Token application of MLG may generate more of a distraction than not having any application.

2.3.3. Climate change governance

The governance of climate change covers a broad range of processes and systems from the international scientific work of the IPCC (IPCC 2021; IPCC et al. 2021a, 2021b), and the diplomatic negotiations around the Conference of Parties (COP) (UNFCCC 2015b) under the United Nations Framework Convention on Climate Change (UNFCCC) (Bulkeley & Newell 2015; UNFCCC 1992, 2021) to national arrangements for addressing the impacts of climate change, e.g., Australia's Nationally Determined Contribution (Australian Government 2020). Governing climate change continues across multiple levels, scale and actors and is increasingly embedded in all aspects of social and economic activities (Bulkeley 2010). Gupta (2014), in her history of global climate change governance, highlights current governance challenges, their interdependencies across the governance levels and the steep learning curve we face in finding the ripe moment for effectively addressing the global climate change problems. One of the key problems is the difficulty of maintaining international cooperation in highly variable economic and social times at the national level (Bernauer & Schaffer 2010). Bäckstrand and Lövbrand, starting from the turning point of Copenhagen COP 15, bring together a collection of writings on climate change governance, many of which focus on the complex and fractious nature

of the topic and lay the foundations for future thinking on the contentious subject. One particular shift post-Copenhagen was the changing role of non-state actors in global climate governance (Bäckstrand et al. 2017). Other researchers cover climate change governance and polycentricity (Jordan et al. 2018; Okereke 2018), beyond international regimes (Okereke, Bulkeley & Schroeder 2009) and fragmentation (Van Asselt 2014; Van Asselt & Zelli 2014).

Adaptation governance is the governance of adaptation to climate change and has its own unique features. Huitema et al. (2016) describe it as '*... the collective efforts of multiple societal actors to address problems, or to reap the benefits, associated with impacts of climate change.*' Dewulf et al. (2015) explore the interactions and arrangements between private and public actors illustrating that adaptation governance is a multilevel, multi-sector and multi-actor challenge. Adaptation governance is a dynamic process and can be influenced by political change (Verner 2012). Persson (2019) reviews global adaptation governance and the extent of implementation of the 2015 Paris Agreement's global goal on adaptation, noting that adaptation is a global challenge and a departure from a previously expressed view that 'mitigation is global, and adaptation is local' (Burton 2011; Nalau, Preston & Maloney 2015). While this view may be more relevant at a global scale, Nalau et al. (2015) suggest that adaptation and adaptation governance may be more relevant at the local levels especially with the application of the principle of subsidiarity. Nalau et al. (2019) also note that multilevel adaptation governance can constrain local adaptation implementation, but polycentric adaptation governance has a role in securing adaptation progress (Nalau, Handmer & Dalesa 2017).

Adaptation is inherently transformational, moving from a current less optimal position '*... towards a normatively defined situation that is better suited to deal with current or future climate risks...*' (Termeer, Dewulf & Biesbroek 2017). However, the governance of adaptation has many barriers (Adger, Lorenzoni & O'Brien 2009; Biesbroek et al. 2013; Biesbroek et al. 2009; Moser & Ekstrom 2010) and in 2007 the IPCC identified the need for addressing different types of barriers and constraints to adaptation to climate change (Adger et al. 2007). These barriers can have negative effects on the overall governance processes. Institutional barriers include short-term horizons for policies and policymakers, low political will, institutional voids and fragmentation, and the inherent uncertainty of climate change (Biesbroek et al. 2009). Biesbroek et al

(Biesbroek 2014; Biesbroek et al. 2014; 2015) go on to discuss the challenges of 'barrier thinking' around adaptation decision making and provide several approaches that may be more useful. In overcoming some of these barriers all levels of government have a key role by providing better policy guidance, enhancing coordination, and distributing resources (Biesbroek et al. 2013; Measham et al. 2011; Tryhorn & Lynch 2010).

The discourse on knowledge and power (important elements of governance) in the governance of adaptation to climate change is diverse and contributes to the complexity and challenges (Armitage 2008; Gotgelf, Roggero & Eisenack 2020; Vink, Dewulf & Termeer 2013). Bisaro and Hinkel (2016) identify the lack of explanation of why barriers arise and how they hinder adaptation. They see this lack of explanation as a driver for increasing the understanding of how institutions hinder or contribute to adaptation governance.

Adaptation governance is not well developed in Australia. A recent independent assessment of Australia's national climate governance capacity did not yield an adequate result, with most categories achieving a score of 30% or less (Climate Action Tracker 2019). The report found that Australia lacks political commitment, has no climate leadership and the quality of decision making is weakened by frequent changes in government, institutional arrangements, and the policy landscape.

Australia's institutional framework lacks the effective coordination across ministries, agencies and sub-national governments that is necessary for efficient and consistent climate policy. Independent research institutes provide a wealth of knowledge that could inform policy-making decisions. Despite Australia's high vulnerability to climate change, the government has a history of ignoring the climate research efforts and advice of its independent government agencies such as the Climate Change Authority, universities, non-government research organisations, as well as IPCC assessments. Human resource constraints remain barriers to effective climate governance, as there are few climate-related roles, high rates of staff turnover, and relatively low budget levels, all reflecting a government in clear denial

of its climate change commitments (Climate Action Tracker 2019, p. 1).

Australia is also non-compliant with the Paris Agreement and is actively supporting fossil fuel industries (Armistead et al. 2022).

In Australia adaptation governance has been based on a 'shared responsibility' between the Commonwealth, the states, territories, and local government where the subnational levels take the lead in implementation (Burton & Mustelin 2013; Commonwealth of Australia 2010; Smith et al. 2008).

Building on the Australian Commonwealth's 'Regions at the Ready: Investing in Australia's Future' and the House of Representatives Select Committee on Regional Development and Decentralisation (Commonwealth of Australia 2018), Eversole and Walo (2019) highlight the importance of governance and decision making power in regional Australia. This is despite, and may be because of, the concentration of decision making power and resources in the metropolitan areas and the weak regional-level governance mechanisms (Beer & Maude 2005; Eversole 2016). The limited regional governance capacity challenges the development of place-based leadership, resulting in 'poorly connected' decision making. This is acknowledged by the Select Committee who do not specifically and directly address the governance tension in their recommendations, potentially expecting it to be an outcome of the implementation of the recommendations (Commonwealth of Australia 2018). Note, in this context, 'Regional' Australia is that part of Australia that is outside the six major capital cities and Canberra as distinct from the 56 NRM regions across the country.

At a national level the Australian Government has developed a range of climate change strategies and frameworks, none of which addresses governance arrangements and processes in significant detail. These will be discussed further below within the context for providing a national frame for the Regional Adaptation Planning case study.

Adaptive governance (AG) is a central element of the third research question (pg 9) of this thesis and has roots in adaptive management (Brunner et al. 2005; Folke et al. 2005; Lebel et al. 2006; Nelson, Howden & Smith 2008) and continuous improvement and learning (Ison, Collins & Wallis 2015; Rijke et al. 2012; van Assche, Valentinov &

Verschraegen 2021). Intuitively AG is a self-adapting governance process that responds to uncertain and changing contexts so as to enhance future governing processes. AG is reactive to changes, reflexive and proactive in anticipating future possibilities. It is solutions focused; aimed at better governance and is innovative and creative. It can be a means of working with wicked problems (Bellamy 2006; Cosens et al. 2020; Griffith, Davidson & Lockwood 2009; Torabi 2019), resolving complex issues (Brunner & Lynch 2010b; Sandström, Söderberg & Nilsson 2020) and for conflict resolution (Brunner & Lynch 2010a; Nursey-Bray 2017).

AG highlights the interdependence of science, policy and decision making; it integrates scientific and other types of knowledge into policies to advance the common interest in particular contexts through open decision making structures (Brunner et al. 2005). Adaptive co-management is the combination and operationalisation of adaptive management and adaptive governance (Olsson, Folke & Hahn 2004). Dietz, Ostrom and Stern (2003, p. 1911), accredited as the originators of AG (Cox & Schoon 2019), use adaptive governance '*...because the idea of governance conveys the difficulty of control, the need to proceed in the face of substantial uncertainty, and the importance of dealing with diversity and reconciling conflict among people and groups who differ in values, interests, perspectives, power, and the kinds of information they bring to situations*'. Brunner et al. (2005; cited by Gunderson & Light 2006, p. 325) describe adaptive governance as '*...operating in a situation where the science is contextual, knowledge is incomplete, multiple ways of knowing and understanding are present, policy is implemented to deal with modest steps and unintended consequences and decision making is both top-down (although fragmented) and bottom-up*'. Adaptive governance can involve polycentric arrangements of nested decision making units at multiple scales and the devolution of rights and power (Folke et al. 2005; McGinnis 1999; Olsson et al. 2006; Ostrom 1996). Nelson, Howden, and Stafford Smith (2008, p. 592) highlight the continual rapid evolution of local contexts and the complementary role of central government and local communities in AG systems. Huitema, Aerts and van Asselt (2009, p. 527) define AG as '*the totality of interactions by private and public actors, to achieve adaptation and to enhance adaptability*'. In contextualizing AG with adaptation and adaptability they find AG missing in the international and national levels they explore (Huitema, Aerts & van Asselt 2009). Lynch (2009) posits that AG is less understood than scientific management and adaptive management, characteristically

proceeds from bottom up and is key to addressing wicked problems. Hatfield-Dodds, Nelson and Cook (2007) define AG as *'...the evolution of rules and norms that better promote the satisfaction of underlying human needs and preferences given changes in understanding, objectives, and the social, economic and environmental context.'*

Brunner and Lynch (2010a) conclude that *'adaptive governance is an emerging pattern of science, policy, and decision making, for reducing net losses from climate change on larger scales at all levels in the international system, from local to global.'* Adaptive governance is a mode of governance that can be applied to any topic (Folke et al. 2005; Rijke et al. 2012).

Folke et al. (2005, pp. 463-464) suggest AG relies on networks that connect individuals, organizations, agencies, and institutions at multiple organizational levels and identify four essential features of AG in socio-ecological systems (SES):

1. Build knowledge and understanding of resource and ecosystem dynamics.
2. Feed ecological knowledge into adaptive management practices.
3. Support flexible institutions and multilevel governance systems.
4. Deal with external perturbations, uncertainty, and surprise.

Folke (2007) and Termeer, Dewulf and Lieshout (2010) add to these features cross-level, cross-scale, and cross-systems interactions (Folke 2007) and Huitema et al. (2009) describe four prescriptions for adaptive co-management: polycentric governance, public participation, experimentation, and a bioregional approach. AG systems are also self-organising (Folke 2003; Folke et al. 2005; Rijke et al. 2012).

AG supports *'deliberative vertical connections across various levels of social organization'* (Diduck 2010), AG shares some characteristics with polycentric arrangements (Marshall 2015b; Rijke et al. 2012) and MLG (Armstrong & Kamieniecki 2017; Termeer, Dewulf & Lieshout 2010); but MLG, or decentralisation (Hong & Lee 2018), is not sufficient to establish AG (Rijke et al. 2012). AG is described as reminiscent of polycentric governance (Cox & Schoon 2019) and provides *'...a framework for understanding multilevel governance of natural resources'* (Nykqvist, Borgström & Boyd 2017, p. 2360).

Scholz and Stiftel (2010, p. 5) state *'adaptive governance, then, involves the evolution of new governance institutions capable of generating long-term, sustainable policy*

solutions to wicked problems through coordinated efforts involving previously independent systems of users, knowledge, authorities, and organised interests.'

AG can facilitate the use of shadow networks (Bos, Brown & Farrelly 2015; Cooper & Wheeler 2015; de Abreu & de Andrade 2019; Gunderson 1999; Gunderson & Light 2006; Huitema, Aerts & van Asselt 2009; Olsson et al. 2006; Pelling et al. 2008; Van der Brugge & Van Raak 2007; Wutich et al. 2020). '*...the emergence of shadow networks for adaptive governance is a self-organizing process often triggered by a social or ecological crisis.*' (Olsson et al. 2006). Shadow networks are '*purely informal networks which typically develop in a bottom-up process as a kind of shadow network that has no formal link at all to the formal policy and management cycle*' (Pahl-Wostl 2009, p. 362). AG should include some redundancy (Marshall 2015a; Pahl-Wostl 2009) to assist offsetting some of the uncertainty and risks.

Despite all the above there is little consistency in definitions and common understanding of AG (Cox & Schoon 2019).

Transformation to an adaptive governance approach can be like 'shooting the rapids' (Olsson et al. 2006) and would benefit from several actions including; changing attitudes, embedding leadership, designing resilient processes, changes from bottom-up and top-down, being aware of other relevant scales, operating within the current adaptive cycle, planning on a long-term horizon (30-50 years), and facilitating adaptive governance by allowing diversity and flexibility. Lebel et al. (2006) and Folke et al. (2005) claim adaptive co-management as the mechanism for the operationalisation of adaptive governance. Walker et al. (2004) see AG as a process of creating adaptability and transformability in SESs (see also Chaffin et al. 2016).

Limitations in the uptake of AG relate to a large extent to the inability of practitioners and policy makers to cope with complexity and various uncertainties (Rijke et al. 2012).

AG has been explored in climate change (Armstrong & Kamieniecki 2017; Brunner & Lynch 2010a; Torabi 2019; Vella et al. 2016; Young & Lipton 2006), river basin governance (Cosens & Williams 2012; Marshall 2014), and system praxis (Ison, Blackmore & Iaquinto 2013; Ison, Collins & Wallis 2015).

In summary AG exhibits the following characteristics:

1. Top-down and bottom-up
2. Self-organising
3. Addresses uncertainty
4. Continuous learning process
5. Depends on networks
6. Multilevel and decentralised
7. Rooted in resilience and co-management

Several additional modes, conceptualisations or theories of governance are recognised and many of these have some potential relevance to a developing understanding of MLG. How any of them may inform and influence MLG processes will depend on the context, timing, and participants. Table 2.1 presents a range of modes which are considered relevant to building the MLG picture for this thesis. Many of the conceptualisations as detailed in Table 2.1 describe elements of other governance modes, that is they are not mutually exclusive but may describe components or flavours of governance systems or processes which can be variously applied to other forms of governance, i.e., MLG could be further described as being transformative or reflexive and one assumes MLG is inherently participatory, at least to some degree.

These concepts of governance each make some contribution to the overall governance practices in any jurisdiction; each in itself is not sufficient to fully describe these practices. Each context can be described by the appropriate combination of elements of the relevant concepts each providing some nuanced feature for any specific context. A precise description of this mosaic of overlapping concepts is often not well developed.

Table 2.1 Additional Modes of Governance

Governance Mode	Definitions	Key elements	Relevance to MLG	Key authors (Alphabetical order)
Transitional	<p>1. 'temporary governance arrangements put in place to manage transitions from violent conflict and increasingly social crisis' (De Groof 2019, p. 1)</p> <p>2. 'transitional governance is about linking the short-term responses to the crisis with the long-term vision of low-carbon and resource efficient societies' (De Schutter 2014, p. 18)</p> <p>3. 'a balance between structure and spontaneity, between management and self-organization, between long-term ideals and short-term action and between theory and practice' (Loorbach 2007)</p>	<p>A. Addresses social systems change</p> <p>B. Etymology; 'Going across'</p> <p>C. Not mutually exclusive from transformation – a duality</p> <p>D. Includes.</p> <ul style="list-style-type: none"> a. Broader participation. b. Longer-term perspectives c. Learning by doing and doing by learning d. Follows systems thinking approach <p>E. A subset of network governance</p>	<p>I. Transitioning to a MLG system – the process of change (how)</p> <p>II. Renegotiates partnerships and roles</p>	<p>Bennett 2012; Berkhout, Smith & Stirling 2004; Bosman & Rotmans 2016; De Groof 2019; De Groof & Wiebusch 2020; De Schutter 2014; Foxon et al. 2009; Geels 2002, 2004; Geels et al. 2017; Grin, Rotmans & Schot 2010; Kemp & Loorbach 2003; Kemp, Loorbach & Rotmans 2007; Loorbach 2007, 2010, 2020; Meadowcroft 2009; Olsson et al. 2006; Pelling 2011; Rosenbloom 2017; Rotmans, Kemp & Van Asselt 2001; Smith, Stirling & Berkhout 2005; Turnheim et al. 2015; Wise et al. 2014; Zolfagharian et al. 2019</p>
Transformative	<p>1. 'Fundamental social, technological, institutional, and economic change from one societal regime or dynamic equilibrium to another' (Rotmans et al., 2001).</p> <p>2. '... transformative climate governance as an integrative, learning-based, and inclusive governance approach that addresses climate change in synergy with long-term sustainability and resilience goals' (Hölscher & Frantzeskaki 2020).</p>	<p>A. Addresses social systems change</p> <p>B. Etymology; 'Change in shape'</p> <p>C. Informed by adaptation, adaptive and reflexive governance</p> <p>D. 'Governing transformational change thus requires transformation of the governance systems themselves' (Termeer, Dewulf & Biesbroek 2017)</p>	<p>I. Transformation to a new MLG system – changing shape (what).</p> <p>II. Transitioning and transformation are ongoing processes within any MLG system.</p> <p>III. Context specific and evolves with change</p> <p>IV. Operates in complex systems.</p>	<p>Bosomworth 2018; Chaffin et al. 2016; Gazley & Kissman 2015; Granberg et al. 2019; Granberg & Glover 2021; Holling & Gunderson 2002; Hölscher & Frantzeskaki 2020; Hölscher, Wittmayer & Loorbach 2018; Jensen, Nielsen & Russel 2020; Loorbach 2020; O'Brien 2012; Pelling 2011; Pelling, O'Brien & Matyas 2015; Rotmans, Kemp & Van Asselt 2001; Termeer, Dewulf & Biesbroek 2017; Walker et al. 2004; Young et al. 2015</p>

Governance Mode	Definitions	Key elements	Relevance to MLG	Key authors (Alphabetical order)
	<p>3. 'Transformative governance (i)s an approach to environmental governance that has the capacity to respond to, manage, and trigger regime shifts in coupled SESs at multiple scales. Transformative governance describes governance with the capacity to shape nonlinear change in complex systems of people and nature. In contrast to adaptive governance, which has the goal of building resilience and enabling adaptive management in a desirable SES regime, the goal of transformative governance is to actively shift a SES to an alternative and inherently more desirable regime by altering the structures and processes that define the system' (Chaffin et al. 2016)</p>		<p>V. Strives for continuous improvement</p>	
<p>Anticipatory</p>	<p>1. 'a broad-based capacity extended through society that can act on a variety of inputs to manage emerging knowledge-based technologies while such management is still possible' (Guston 2013, p. 219)</p> <p>2. 'a sustainable decision-making process based on consensus on a desirable future or vision through the participation of various stakeholders including government, market, the public,</p>	<p>A. Is forward looking - foresight B. Builds capacities in foresight and predictions C. Anticipates possible outcomes D. Is proactive and responds to changing impacts E. Scenario and forecasting based F. Allows anticipation of multiple futures and strategies G. Allows feedback</p>	<p>I. Complex system of system II. Scalable III. Practice is central to AG IV. Useful in un V. certainty</p>	<p>Boston 2016; Boyd et al. 2015; Earth Systems Governance no date; Fuerth 2011; Fuerth 2009; Fuerth & Faber 2012; Fuerth & Faber 2013; Gupta et al. 2020; Guston 2013; Guston 2010; Heo & Seo 2021; Matthews & Baker 2021; Muiderman et al. 2020; Quay 2010; Serrao-Neumann, Harman & Low Choy 2013</p>

Governance Mode	Definitions	Key elements	Relevance to MLG	Key authors (Alphabetical order)
	<p>and academics' (Heo & Seo 2021, p. 2)</p> <p>3. 'governance in the face of extreme normative and scientific uncertainty and conflict over the very existence, nature and distributive implications of future risks and harms' (Earth Systems Governance no date)</p> <p>4. 'based on concepts of foresight and flexibility, uses a wide range of possible futures to anticipate adaptation strategies, and then monitors change and uses these strategies to guide decision making' (Quay 2010)</p> <p>5. 'a system of institutions, rules and norms that provide a way to use foresight for the purpose of reducing risk, and to increase capacity to respond to events at early rather than later stages of their development' (Fuerth 2009, p. 29)</p>	<p>H. Involves changing short-term decisions for longer-term visions</p> <p>I. Required at all scales (levels)</p> <p>J. Self-organises</p>		
Reflexive	<p>1. 'the organisation (modulation) of recursive feedback relations between distributed steering activities' (Voss & Kemp 2005)</p> <p>2. 'a mode of steering that encourages actors to scrutinize and reconsider their underlying assumptions, institutional arrangements, and practices' (Hendriks & Grin 2007)</p> <p>3. 'approaches to environmental governance characterised by</p>	<p>A. Requires innovative and strategic thinking to fundamentally transform existing practices and structures</p> <p>B. First-order reflexivity refers to the continuous cycle of side effects from simple modernity (Voss & Kemp 2005)</p> <p>C. Second-order reflexivity is about the self-critical and</p>	<p>I. Iterative, cyclical</p> <p>II. Emerges through partnership and networks</p> <p>III. Influences actors' actions</p> <p>IV. Distributed power</p> <p>V. Includes multiple actors</p> <p>VI. The institutionalization of reflexive self-organisation</p>	<p>Barrett et al. 2021; Hendriks & Grin 2007; Jessop 2004; Meadowcroft 2007; Meadowcroft & Steurer 2018; Voss, Bauknecht & Kemp 2006; Voß & Bornemann 2011</p>

Governance Mode	Definitions	Key elements	Relevance to MLG	Key authors (Alphabetical order)
	<p>critical self-awareness, the intentional inclusion of multiple actors, and the adoption of deliberative practices' (De Schutter & Lenoble 2010)</p> <p>4. 'reflexive self-organization based on continuing dialogue and resource-sharing among independent actors to develop mutually beneficial joint projects and to manage contradictions and dilemmas' (Jessop 2004)</p>	<p>self-conscious reflection on processes of modernity (Voss & Kemp 2005)</p> <p>D. Continuous interrogation</p>	<p>among multiple stakeholders across several scales of state territorial organisation.</p>	
Deliberative	<p>1. deliberative governance initiatives that are employed by governments to involve society in policy making in different ways than through democratic elections or institutionalised forms of interest intermediation.</p> <p>2. deliberations based on reason and logic before decision making</p> <p>3. draws on elements of deliberative democracy theory and combined with insights from network governance</p> <p>4. conversations that are open respectful, inclusive, decisive, reciprocal, and that actors have equal enforcement power</p>	<p>A. Communications that are non-coercive, induce reflection, and justify positions</p> <p>B. Legitimate policy decisions should involve those affected by a decision</p> <p>C. A form of authentic communication centred on reasoned argument</p> <p>D. Is part of broader governance processes</p> <p>E. Needs 'deliberative space'</p> <p>F. 'Deliberative governance promises that through deliberation the expertise, experience, interpretations and interests of other societal actors are better represented and included in decision making' (Metze 2010, p. 16)</p>	<p>I. Continuous negotiation as part of decision making</p> <p>II. Coordination and integration across actors</p> <p>III. Power negotiations</p> <p>IV. Unique to context</p>	<p>Castro 2020; de Koning, Steins & Toonen 2020; Dryzek 2012; Hendriks 2009; Hendriks, Bolitho & Foulkes 2013; Metze 2010; van Lieshout et al. 2017; Vink et al. 2015</p>

Governance Mode	Definitions	Key elements	Relevance to MLG	Key authors (Alphabetical order)
Participatory	<p>1. 'the regular and guaranteed presence when making binding decisions of representatives of those collectivities that will be affected by the policy adopted' (Schmitter 2002)</p> <p>2. 'participatory governance' can be said to occur when government shares the policy development process with the community sector' (Edwards 2001, p. 81)</p>	<p>A. Citizens have central role in decision making</p> <p>B. Strengthens networks</p> <p>C. Democratic engagement through deliberative processes</p> <p>D. Requires facilitation</p> <p>E. Bottom-up</p> <p>F. Centralised coordination</p>	<p>I. Empowering</p> <p>II. Building capacity</p> <p>III. Devolution of power</p> <p>IV. Dispersal of roles</p> <p>Requires 'deep cultural shifts' (Eversole & Martin 2005, p. 295)</p>	<p>Blair 2008; Edwards 2001; Eversole & Martin 2005; Fischer 2012; Fung & Wright 2001; Fung, Wright & Abers 2003; Grote & Gbikpi 2002; Head 2005; Heinelt 2018; Heinelt et al. 2002; Mackay 2018; Osmani 2008; Schmitter 2002</p>
Mosaic	<p>1. 'governance that is sensitive to the diversity and dynamics of active citizenship and which aligns with local informal networks and across scales' (Buijs et al. 2016, p. 3)</p> <p>2. 'the diversity of processes that may facilitate existing active citizenship and stimulate its upscaling through a mix of governance modes and policy interventions tailored to the socio-ecological context of urban landscapes' (Buijs et al. 2019, p. 54)</p>	<p>A. Diversity of actors and scales</p> <p>B. Acknowledgement of spatial dimensions of environmental governance</p> <p>C. Context sensitive</p> <p>D. Interdependence between ecological and social scales, and landscapes and community identity</p> <p>E. No single approach</p> <p>F. Combine the micro-level of active citizenship with the macro-level of strategic urban planning</p> <p>G. Focus on grassroots processes</p>	<p>I. Context specific</p> <p>II. Spatially connected network of urban greenspaces that have varying levels of multi-functionality at different scales</p> <p>III. Recognises socio-cultural diversity of actors</p>	<p>Buijs et al. 2019; Buijs et al. 2016; Henninger 2018; Robichau 2011</p>
Network	<p>1. 'interfirm coordination that is characterized by organic or informal social systems, in contrast to bureaucratic structures within firms and formal contractual relationships between them' (Jones, Hesterly & Borgatti 1997, p. 913)</p>	<p>A. Participatory,</p> <p>B. Distributed authority – no central body</p> <p>C. Based on trust</p> <p>D. Not separate from markets and hierarchies</p>	<p>I. Networking expands the mandate of lower echelons to act, eliminates bottlenecks latent in middle layers of management, and radically improves the</p>	<p>Bevir 2012; Davies 2012; Davies 2016; Fischer, Nguyen & Strande 2019; Jones, Hesterly & Borgatti 1997; Kapucu & Hu 2020; Kinnear, Patison & Mann 2013; Klijn & Koppenjan 2015; Lubell, Mewhirter & Berardo 2021; Maes</p>

Governance Mode	Definitions	Key elements	Relevance to MLG	Key authors (Alphabetical order)
	2. 'Systems of coordination that seek to guide and steer multi-actor interactions in order to solve complex public policy problem' (2015; cited by Nochta & Skelcher 2020, p. 1)	E. Connecting relationships are the medium of all governance processes	flow of information throughout the new system (Fuerth 2011) II. Decentralisation III. Restructuring authority applying subsidiarity IV. Interdependent relationships	et al. 2018; Nochta & Skelcher 2020; Reddel 2004; Rhodes 2017
Collaborative	1. 'a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets' (Ansell & Gash 2008, p. 544) 2. 'includes collaboration with the broadest definition of partners within and outside government., meaning the general public, national, state, regional and local government agencies, tribes, non-profit organisations, voluntary associations and other manifestations of civil society, business, and other non-government stakeholders' (Bingham 2011, p. 387)	A. Coordinate, adjudicate, and integrate the goals and interests of multiple stakeholders B. Used to resolve conflict and facilitate cooperation C. Brings citizens together - reconstructs democracy. D. Citizens play more active role in policy making, interactives, involves citizens affected by policy E. Interactive process	I. Multiple actors II. Negotiated agreements III. Involves community IV. Increases legitimacy and ownership V. Top-down and bottom-up VI. Governance shaped by policy context	Ansell 2012; Ansell & Gash 2008; Ansell & Torfing 2015; Bevir 2009, 2012; Bingham 2011; Emerson & Gerlak 2014; Emerson, Nabatchi & Balogh 2012; Hamilton & Lubell 2018; O'Flynn & Wanna 2008; Sedlacek, Tötzer & Lund-Durlacher 2020

2.4. Subsidiarity

The OED (Oxford English Dictionary Online 2021) defines subsidiarity as *'the principle that a central authority should have a subsidiary function, performing only those tasks which cannot be performed at a more local level.'* The origins of subsidiarity can be traced back to 1931 (Pius 1931) when Pope Pius XI used 'subsidiary' to note the supportive role of central institutions. Subsidiarity was formally used in Article 5(3) of the Treaty of the European Union (the Maastricht Treaty) (Commission of the European Communities 1992; Council of the European Communities 1992; Follesdal 1998; Raffaelli 2017) and reinforced in the 1997 Treaty of Amsterdam (European Union 1997). The Maastricht Treaty is foundational in the development of MLG in Europe (Börzel & Risse 2000; Joerges, Mény & Weiler 2000). The similarity between the OED definition of subsidiarity and the application in the Maastricht Treaty belies significant differences, as Ross (1993) points out. Pope Pius's conceptualisation, which centres on supporting and servicing the interests of the lower levels of institutions *'... sees the state as an organic whole... The principle of subsidiarity is positive and universal'* (Ross 1993, p. 2). The Maastricht perspective is limiting and reductionist and,

...concerned only with putting some limit on the amount of additional powers which can be usurped by the central authority, and not with how they should be exercised. Again, the approach is atomistic rather than holistic: there are discrete member-states, discrete central institutions, and discrete powers; and the argument is over which bodies should have complete possession of which powers' (Ross 1993, p. 3).

Nevertheless, the embedding of the principle of subsidiarity within the Maastricht Treaty has provided a platform for deepening the expression of subsidiarity throughout many policies and programmes within the European Union (EU) (Blockmans et al. 2014; Dzurinda 2019; van Hecke 2003).

The Pope Pius' perspective replaces top-down interactions with processes which devolve responsibility to the lowest levels, with agencies playing a supportive role. Raffaelli (2017, p. 2) sees it more as sharing power between several levels of authority.

Subsidiarity has been used to reinforce sovereignty (Golub 1996) and reclaim control of environmental policies (de Sadeleer 2012).

Kalb (2013) argues that subsidiarity is a principle that is praised more than it is practiced, and others consider that it is not taken seriously (Bermann 1994; Craig 2012; Head 2007). This is because, like many contemporary examples of community empowerment, it does not accurately reflect current public governance practice, which retains a centralised focus. Subsidiarity aims to enable those in the lower and middle levels of the social hierarchy to actively participate rather than be dominated through the command and control exerted by the top levels to maintain the status quo. This connects with the co-production of knowledge through place-based social learning to enable the public to be empowered (Barr & Woodley 2019). Adaptive systems need subsidiarity to highlight the local, relative autonomy, interconnectedness and complexity of the lower levels and their capacity to self-organise (Kalb 2013). However, excessive devolution to non-democratically elected bodies (such as RAP Steering Committees) can reduce democratically elected bodies' (local governments) control over policies that affect them. Subsidiarity can allow for greater flexibility within specific levels by adapting laws to their interests (Commonwealth of Australia 2014, p. 30).

Which institutions have what competences is central to the allocation of control over those domains (Follesdal 1998) and agreeing on which levels have the standing to negotiate this is critical to both subsidiarity and MLG. Aligning interpretations of subsidiarity with competence in developing climate change policy in the EU, for example, is critical in supporting the harmonisation of policy instruments (Dahl 1999, 2000). The development and implementation of South Australian state policy on RAPs is equally in need of equivalent alignments.

Subsidiarity must be a balance between higher levels and lower levels (Barton 2014), and is therefore best negotiated by all parties, based on who is best placed - i.e., who has the competence - to take on what roles. Subsidiarity is premised on two bases: independence (self-determination) and support (assistance) (Raffaelli 2017; Ross 1993). That is the centralised institutions have a responsibility to ensure that lower levels have an appropriate degree of independence and self-determination and that

the lower levels have the standing to be able to negotiate the support to facilitate their independence.

The use of 'lower' and 'higher' levels within nested hierarchies reflects more of a spatial scale than an authoritative or power scale. Thus, lower levels do not have less power than higher levels, but they have different power based on their competence and capacity (Marshall 2008c; Wyborn & Bixler 2013). Negotiating the redistribution of authority can result in enhanced, not reduced power across most levels.

Power is often a topic that does not get broader open discussion. Power dynamics are also not often explored, analysed, and understood (Di Gregorio et al. 2019), yet all governance systems include power distributions (Morrison et al. 2019; Morrison et al. 2017; Vink, Dewulf & Termeer 2013). The allocation of authority within a multilevel system inherently includes a redistribution of power, *inter alia* to address power imbalances through decentralisation. How power is redistributed is critical in building and maintaining trust and equity within and between partners and supporting long-term relationships (Curry 2012, 2015; Di Gregorio et al. 2019; Marquardt 2017). The power interactions shape the interactions of the governance system (Young 2002 cited by Di Gregorio et al. 2019).

Cahill (2017) explores the issue of 'lower' and 'higher' levels through an ontology-sensitive approach, which highlights that subsidiarity is based on a pre-existing social ontology. She proposes replacing 'lower levels' with primary units, and subsidiary units for 'higher levels' and that, properly understood, subsidiarity recognises the greater claim to decisional authority of the primary unit.

Subsidiarity is also considered to have two interdependent dimensions: vertical and horizontal (Estella de Noriega 2002; EurWORK 2020; van de Donk 2019). Vertical subsidiarity refers to the separation of competences between different levels within a hierarchy and horizontal subsidiarity refers to the spread of competences between agents and/or domains within the same level. This could be reflecting elements of multilevel and polycentric governance respectively, that is MLG is more vertical and PCG more horizontal, recognising that this is relative in that MLG and PCG have varying degrees of verticality and horizontality.

In recognition of some of the limitations of the implementation of subsidiarity, the Conference of Parliamentary Committees for Union Affairs of Parliaments of the European Union (COSAC) Task Force on Subsidiarity, Proportionality and 'Doing Less More Efficiently' has produced a report (European Union 2018) concluding that a '*...new way of working requires a common understanding of subsidiarity and proportionality and a greater participation of all stakeholders and particularly national, local and regional authorities...*'. As with other concepts and principles, implementation needs to be done with integrity and respect to avoid negating the original intent of subsidiarity. The lack of adequate monitoring and evaluation of such processes often results in the inability to track progress toward intended aims and therefore the capacity to adapt to bring the processes back on track.

Subsidiarity has been applied to a range of contexts and sectors. Gussen (2015) identifies sustainability as an emergent property which self-organises in complex systems and links this with subsidiarity. Sustainability, he argues, requires a global governance based on national state confederations of free cities – '*the locus of subsidiarity on a global scale*' (2015, p. 385). He suggests this resonates with Ostrom's nesting principle... where '*rules are organized and enforced through multiple layers of nested enterprises*' (Ostrom 1990, p. 90). Gussen (2015, p. 385) expands on the links between polycentric governance and subsidiarity, noting that it emerges '*where the multiple decision making centres function autonomously; where 'sovereignty' is shared between these centres... subsidiarity maleates the hierarchies ... (making them) adaptable to change.*'

As Berkes (2004, p. 626) suggests:

Cross-scale conservation has to be planned bottom-up, rather than top-down, because it makes sense to start solutions at the lowest organizational level possible. The relevant principle, sometimes called the subsidiarity principle, may be phrased thus: the goal should be as much a local solution as possible.

Subsidiarity and MLG are clearly deeply interconnected concepts (Blank 2010; Loisen & De Ville 2012; Pazos-Vidal 2017) and have supported the EU integration process; subsidiarity as a legal basis and MLG as a normative concept in understanding how

different levels of government interact with each other (Pazos-Vidal 2017; Pazos-Vidal 2019). Subsidiarity is part of MLG (Horga 2010; Horga & Florian 2011).

Horsley (2012, p. 268) also links subsidiarity and MLG arguing that, '*the application of subsidiarity is premised on the existence of at least two autonomous decision making bodies, unified through the pursuit of a common objective.*' And Craig (2012, p. 73) argues a rationale for subsidiarity is to avoid centralisation, while Panara (2015) sees it as a cornerstone of multilevel architecture in the EU.

Pazos-Vidal's (2019, p. 27) conceptualisation of subsidiarity aligns with '*a multilevel participatory process by which different levels of government discuss and decide which level of government can better exercise a shared competence or part of it.*' Moreover, Gleeson (2003, p. 223) argues that the principle of subsidiarity is '*the idea that decisions should be taken at the lowest appropriate level – [which] has helped to reinforce multilevel governance.*'

Subsidiarity and MLG are intermeshed, they run in parallel and overlap; in some ways they are synonymous; that is, you cannot have one without the other, assuming you are operating in an integral manner. If they are not connected, then either one is not being implemented correctly; MLG is decentralising, vertically and horizontally, while subsidiarity is pushing down to the lowest levels capable.

The relationship between subsidiarity and MLG changes with the extent of the scale considered; that is consideration of, for example, three levels (e.g., regional, local and community) within a nested hierarchy would define the relationships between the three levels as opposed to a different definition within a context which considers four levels of a hierarchy (e.g., state, regional, local and community). The additional top level changes the dynamics and therefore the relationships that develop between all levels. And indeed, the definitions and applications of the two concepts can vary depending on the broader context (Jordan 2000).

The expression of subsidiarity in Australia is limited and not always constructive. Head (2007, p. 160), in the context of Australian federalism, argues that the states '*...have endorsed the principle of subsidiarity as a weapon in their ongoing arguments with the Federal Government aimed at reducing the States' financial dependency on the Commonwealth.*' This is consistent with the perceptions of the ongoing thrust and

parry between the Commonwealth and the state governments in attempts to secure and direct funding to regional NRM authorities as represented by the various Commonwealth-funded programs, such as the Natural Heritage Trust and Caring for our Country, and the consequential shifting state institutional arrangements at regional and catchment management levels. And while regionalism places more emphasis on devolution, which may indicate recognition of the importance of subsidiarity, it remains mostly rhetorical as neither Federal nor state governments actually let go of the regional authorities in terms of self-determination (Head 2007). This is clearly illustrated by the then (2016) Service Levels Agreement the South Australian Government had with the NRM Boards in relation to the State employing the personnel to implement the 'community-based' Regional NRM plans.

Gussen (2016) discusses the Australian constitutional interpretation of subsidiarity within the context of Australian federalism. He goes further (Gussen, BF 2019, p. 189) by introducing '*...the principle of hypotaxis refers to the legal, political, economic, and ethical principle that decides the scale of social organization based on the following decision rule: as much freedom as possible and as much state as necessary...*' In his view hypotaxis emphasises allocating decision-making processes to the local level.

Marshall (2008c, 2015b) is one of the earlier publishers on the application of subsidiarity in Australia and explores its application in nested community-based environmental governance. He identifies that in the numerous interpretations of subsidiarity decentralisation is a common feature, and that subsidiarity can be useful in determining the nesting into higher levels. He argues that subsidiarity should be used to allocate tasks across levels pending enhancement of the capacity of these levels; that the levels should be afforded as much autonomy as possible and that authentic subsidiarity usually results from bottom-up efforts that overcome government's '*fiscal dominance and cognitive hegemony*' (Marshall 2008c, p. 93). It is of interest to note here that Marshall explores both polycentric and multilevel governance as discussed below, in Box 2.1 (Marshall 2008b, 2008d, 2015a, 2015b).

The Australian Government has included subsidiarity as one of the six principles in its White Paper on the Reform and Australian Federalism (Commonwealth of Australia 2014). This paper recognises that government should support rather than supplant traditional roles of civil society organisations; that responsibility for specific areas

should lie with the lowest level of social organisation and that greater recognition of subsidiarity would reduce government control. This acknowledgement and endorsement of the principle of subsidiarity is strengthened by its inclusion in an overarching governance document prepared on behalf of the Chairs of the Regional NRM Boards of Australia (Ryan S et al. 2010). This report interprets the principles of subsidiarity to mean that *'...tasks should be decentralised to the lowest level of governance with the capacity to conduct it satisfactorily'* (Ryan S et al. 2010, p. 7).

Other researchers who comment on subsidiarity in an Australian NRM context include: regional planning (Ryan S et al. 2013), adaptive governance (Vella et al. 2015), multilevel environmental governance (Lockwood et al. 2009), devolved NRM governance (Curtis et al. 2014; Dale, Ryan & Broderick 2017), Murray Darling River (Alexandra 2019; Garrick et al. 2012; Marshall, Connell & Taylor 2013; Marshall & Stafford Smith 2010), governance of environmental outcomes (Olvera-Garcia 2018), climate change adaptation and disaster risk reduction (Forino et al. 2017), disaster governance (Melo Zurita et al. 2015), biodiversity and climate change, local government climate adaptation planning (Baker et al. 2012; Measham et al. 2011), community-based NRM (Marshall 2009), land restoration (Campbell, Alexandra & Curtis 2018), and local and regional NRM (Lane, Robinson & Taylor 2009; Lane, McDonald & Morrison 2004a, 2004b). Finally, Balboni (2019, p. 205) concludes that a *'...better formulation of the principle of subsidiarity is a precondition for a better implementation of the principle, not only in the Australian Constitution but, more generally, in the increasing application of multilevel governance in complex societies. It is necessary to clarify not only the normative content of the principle of subsidiarity as well as the objectives or functions that should belong, as a matter of principle, to each level of governance'*.

'The greater the physical distance between the decision makers and those affected by the decisions, the less relevant the decisions appear to the people impacted by them' (Kagge 2019, p. 92).

The application of subsidiarity to MLG in Australia is underrepresented with respect to other governance principles such as transparency, effectiveness, and equity. This failure, primarily based on a poor understand of the principle, results in the failure of

implementation in complex systems. Dale et al (2022) in a recent book, provide a comprehensive account of subsidiarity within the landcare movement. They view subsidiarity as the 'appropriate decision-making being made at the appropriate scale' and this generates 'greater ownership, autonomy and self-reliance'. The focus on subsidiarity in this thesis enables the relevance of this principle to be determined and promotes a broader application across climate change governance to limit the risk of poor implementation and to promote resilience and interdependence.

Box 2.1 The concepts of ‘subsidiarity’ and ‘polycentricity’ (after Graham Marshall)

Marshall uses PCG here but in other references uses MLG and does not discuss any differences (Steffen 2009, p. 200).

The concepts of subsidiarity and polycentric governance are increasingly appearing in discussions about environmental management in Australia (Marshall 2005, 2008c). Instances of their use overseas are also reported in the literature (e.g. Acheson 1988; Ostrom 1990).

The principle of subsidiarity requires each governance function to be performed at the lowest level of governance that possesses capacity to implement it effectively (Jordan 2000; Ribot 2004). This capacity involves both the representation of all parties with a substantive interest in the function of a body (McKean 2002), and the availability of sufficient physical, financial, human, and social capital to perform that function (Marshall 2005, 2008).

A polycentric system of governance comprises multiple decision-making centres that retain considerable autonomy from one another. A monocentric governance system may comprise more than one organisation, but coordination occurs through a single integrated (often linear) command structure (Marshall 2008c; Oakerson 1999; Ostrom et al. 1999; Ostrom, Tiebout & Warren 1961). To meet both polycentric and subsidiarity design principles, then, a governance system needs not only to comprise multiple organisations and levels, but also to afford these multiple organisations real autonomy in how they perform the functions assigned to them (Andersson & Ostrom 2008; Berkes 2007; Ostrom 2005).

In practice, this would mean central government agencies permitting a much greater degree of autonomy in both the design and performance of local NRM bodies. In particular, information flow would be multidirectional rather than primarily top-down, and decision-making would be interactive and collaborative involving multiple centres in the system. Today’s regional NRM system has taken a step in this direction but remains largely monocentric with limited subsidiarity (Marshall 2008c). Other NRM arrangements (e.g., many regional water planning processes: Smajgl, Leitch & Lynam 2009) similarly retain a strong element of central decision-making.

A future system might look more like a series of diverse, local, community based NRM groups (perhaps growing from current NGOs) that send their chairpersons to a regional NRM body with greater autonomy than in most jurisdictions today. A hands-off central government role would focus on ensuring regional groups meet basic standards of local representativeness and accountability, facilitating learning between regions, and distributing central funding on the basis of conditions that constrain local autonomy as little as possible.

2.5. Scale and Level

Scale and level are critical concepts within geography and some other disciplines (Lloyd 2014; McMaster & Sheppard 2004; Nursey-Bray et al. 2020; Schilling, Saulich & Engwicht 2018). However, they suffer from a degree of ambiguity which contributes to maintaining and enhancing confusion in debates on climate change and multilevel governance. Part of the confusion here lies in that some researchers sometimes use scale and level interchangeably and it is not always clear from the context what is meant.

Scale is defined in the Cambridge Dictionary (2020) as '*a set of numbers, amounts, etc., used to measure or compare the level of something*'. So, a scale is a group or collection of levels, not a level within a scale, although this is often how it is used.

Cash et al (2006) provide a useful illustration (see Figure 2.2) which explains different scales and levels within scales. The position taken in this research is that scale and level are used to mean the range or spectrum of a parameter and the position within that range or spectrum, respectively. Other researchers follow this convention (Gibson, Ostrom & Ahn 2000; Gillet, McKay & Keremane 2014; Lieshout et al. 2011). The most common scale used here is the jurisdictional one in which relevant levels include national and state governments, regional organisations, local government, and community organisations. In this context multilevel and cross-level can be visualised as in Figure 2.3 below.

Multilevel interactions refer to interactions between several levels within the same scale, but not necessarily directly with the next level 'up' or 'down' in the scale. That is, multilevel can also include interactions which 'skip' levels, e.g., community groups can and do interact directly with state and federal governments and go 'around' regional organisations. Cross-scale refers to interactions that occur between scales and cross-level refers to interactions across levels in other scales (cf. Cash's interpretation). Scales are not discrete entities; there can be several threads of interactions operating simultaneously, within and between scales. These interactions also vary in a range of parameters such as strength, duration, and direction. The interactions between levels and scales are fluid, dynamic and evolve, contributing to

the wicked nature of MLG (Scharpf 1997b; Thomann, Trein & Maggetti 2019) (see Section 2.8.2 below).

While the focus in this research is on one primary scale, i.e., jurisdictional, several other scales are relevant including spatial, resources (mostly financial) and capacity. Most NRM systems are influenced by different scales (Wyborn & Bixler 2013). *'Instead of looking for the one 'correct' scale, for analytical purposes it is useful to start with the assumption that a given resource management system is multi-scale(d) and that it should be managed at different scales simultaneously'* (Berkes 2002, p. 317).

Defining or framing scales influences perspectives and content included in discussions and research. This can include which levels might be included in a scale. In this research where a jurisdictional scale is used, the regional and community levels could be excluded if the focus is on governments, i.e., multilevel government. Scale is not devoid of politics (Ramasar 2014; Swyngedouw 2004a, 2004b) not least of which is in terms of who gets to determine what scales are used and how they are defined: *'scale is not ontologically given but is socially constructed and enacted'* (Pieck 2020, p. 251). Those in power often design and construct scales they prioritised and determine what parameters are used to define these scales (Leitner, Pavlik & Sheppard 2002; van Lieshout et al. 2011; van Lieshout et al. 2017). The scale provides a lens to explore practices: *'it is the scale itself that structures observations and, hence, the description of social and ecological phenomena'* (Padt & Arts 2014, p. 7).

In this research, while the focus is on four levels i.e., community, local, regional, and state, it is recognised that these are part of a larger hierarchy which includes the federal government and regional (multi-national) and global institutional arrangements. Other levels such as enterprises and individuals were excluded so as to focus the research on a more easily recognised nested hierarchy.

Scales are also comprised of or are part of nested hierarchies – [see Figure 1 Introduction original diagrams cross-level e.g., LAPs and RAPs interacting.] What results is a complex web of interconnections and interactions (Cash et al. 2006, p. 2) that continuously changes and evolves, and this requires continuous monitoring, adaptation, and adjustment of these complex and wicked issues (discussed in Section 2.8.2 below).



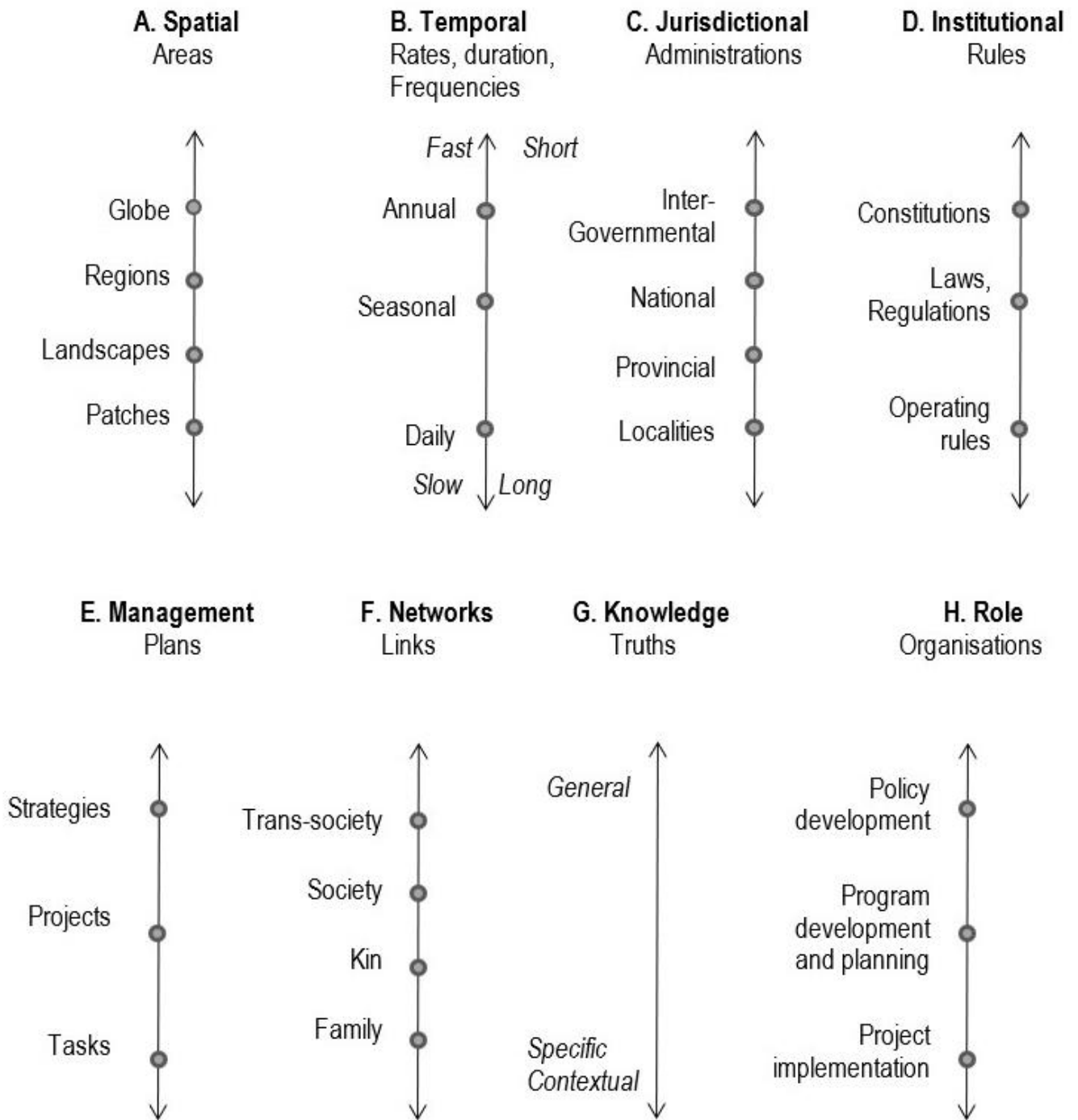
Source: <https://www.ontracgroup.com.au/product/multi-scaler/> Accessed 25 Nov 2020

Figure 2.1 A ‘multi-scaler’

Figure 2.1. presents a visual metaphor representing three possible scales: depth or reach, size, and strength and the possibility of having the same levels for different scales. Three potential scales, namely depth (of cut or reach), size, and strength are possible. In this case, there are three levels in each: large, medium, and small. This image also illustrates that it is possible for the same levels to engage across scale albeit in different ways with a different context and parameters.

Operating in specific scales has potential implications for multilevel governance. The success of a MLG system incorporates maintaining the best fit of role and level, and who is best placed to take on specific roles supported by application of subsidiarity. Balboa (2018) discusses the likelihood of NGOs failing at one level when they are successful at another. Here Balboa uses scale in terms of a level. The paradox of scale is perhaps more one of the paradox of levels, but this could equally apply to cross-scale development and expansion. In an MLG system the different roles are negotiated between different levels of organisations, i.e., different organisations, so a local NGO is unlikely to excel as an International Non-Government Organisation (INGO) because the infrastructure, contexts, capacity, and relationships are not there. The nature and scope of the respective organisations are such that it would be problematic for any single organisation to cover the full range of levels in any scale. The important attribute is the relationships that need to exist to ensure continuity of authority across all levels. Benson and Jordan (2014) argue that subsidiarity is potentially an important scaling device especially in contested areas like climate change where it can diffuse conflicts.

The diagram in Figure 2.2 below illustrates different scales and different levels within those scales. It is also important to highlight the concepts of cross-scale (e.g., spatial to temporal) and cross-level (e.g., global to landscapes) and multi-scale/multilevel (e.g., global to daily).

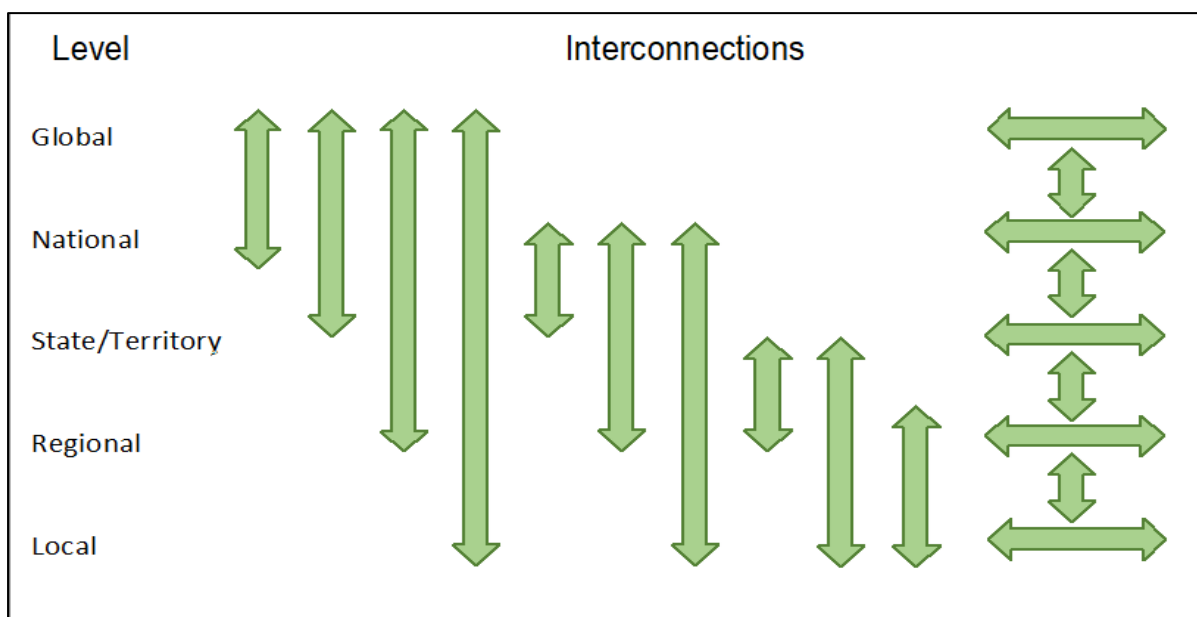


Source: Adapted from Cash et al. 2006

Figure 2.2 Scales and Levels

2.6. Multilevel Governance

Multilevel governance (MLG) is a contested concept (Bache & Flinders 2004; Piattoni 2015; Potluka & Liddle 2014) even to the point of whether it is a theory (Piattoni 2010; Stephenson 2013) or a concept (Borg 2012; Stubbs 2005). This translates into a diversity of applications (Beer 2017; Stephenson 2013) and difficulties in defining MLG (Jordan, Wurzel & Zito 2005). This 'ambiguity' (Tortola 2017) has promoted broad acceptance of MLG because it can be applied in many situations (Peters & Pierre 2004) but also limits succinct articulation for developmental critique and application. Some see MLG as a descriptor, primarily of EU policy; Rosamond (2019, p. 95) calls MLG an organising metaphor, while Jordan (2001, p. 205) sees MLG as a 'descriptive picture'. Figure 2.3 below illustrates multilevel governance showing possible horizontal and vertical interactions between institutional levels in Australia.



Source: adapted from Janicke 2015

Figure 2.3 Multilevel governance

MLG is also seen as limited in its capacity to predict and explain outcomes from the process (Peters & Pierre 2004; Stephenson 2013). This leads on to the concerns that increasing participation in the decision-making process devalues the capacity to govern, defeating the original purpose and generating what Peters and Pierre (2004) call a Faustian bargain. Marks and Hooghe (2004) note the main benefit of MLG as its flexibility across as wide range of scales.

Stephenson (2013), complimenting Piattoni's (2009) historical analysis, explores the transition, through a ranges of uses, of MLG from an EU-centric policy-making process to a global process functioning in complex institutional settings. He calls for additional applied research to investigate the pluralistic nature of MGL. Bache and Flinders (2004) provide a comprehensive foundation for understanding MLG utilising several themes relevant to this research including defining MLG, explaining the differences in structures and processes across policy sectors, the relationship between MLG and hierarchies, the implications of MLG for the power and roles of the nation state (and other levels of government and governance), and any limitations of the MLG model.

Essentially MLG is a complex of interrelated governing processes between government and non- government actors unique to each manifestation, including time, location, and participating actors. No expression of MLG can be replicated in a different context (Larrea, Estensoro & Pertoldi 2019; Peters & Pierre 2004).

Two points benefit from clarification: firstly, several variations of MLG are noted; from MLG applying the theory to multilevel governance or multiple levels of governance, applied more generically, and which describes governance across several levels with limited application of MLG theory. (Note: both multilevel and multilevel governance are used interchangeably in the literature. Multilevel governance is used in this thesis.) Multiple levels of governance are not considered a manifestation of MLG, nor an expression of MLG theory.

Secondly, a related concept to MLG is polycentric governance developed by the Ostroms and others at the Bloomington School of Political Economy in Indiana University. While in some studies MLG and PCG are treated as being the same thing, in this project they are regarded as slightly different. MLG is viewed as having a greater emphasis on hierarchical levels, which has implications for the roles assumed and negotiated by each level. PCG is viewed as less hierarchical, with the various

institutions involved having closer and similar roles but operating at a similar or more local level. PCG is discussed further in section 2.4.2 below.

Gary Marks and Liesbet Hooghe (Hooghe & Marks 1996, 2001a, 2001b, 2003; Marks 1993; Marks 1996; Marks & Hooghe 2004; Marks et al. 1996) are considered the original developers of MLG though Scharpf (1997a, 1997b, 2000) is later credited with independent development of a similar theory. Marks (1993, p. 392) working from the context of the EU first used MLG in his seminal paper where he describes MLG as *'... a system of continuous negotiation among nested governments at several territorial tiers – supranational, national, regional and local – as the result of a broad process of institutional creation and decisional reallocation that has pulled some previously centralized functions of the state up to the supranational level and some down to the local/regional level'* (p392). He later built on this, identifying an 'actor-centred approach' (Marks 1996).

Stein and Turkewitsch (2010, p. 197) and Bache and Flinders (2004) agree that *'...there is no single definition of MLG that is currently broadly accepted by the academic community.'* Tortola (2017) summarises some of the issues with the diversity of definitions along three axes; MLG beyond the EU; the role of non-state actors in MLG and MLG as structure or process. This research makes some contribution to these points.

Alcantara and Nelles' (2014) definition incorporates three main characteristics: actors, scales, and decision-making processes, which are central to the approach taken in this research. A suite of other definitions adds a range of perspectives which clarify different features of MLG from a range of contexts. These include Bache (2012), Peters and Pierre (2004), Piattoni (2010) and Enderlein, Wälti and Zürn (2010).

The diversity of definitions of MLG risks it becoming a catch-all or umbrella term (Piattoni 2009) suffering from conceptual overstretch (Borg 2012) and tests its capacity to travel (Stubbs 2005) outside the EU and not stretch its integrity (Sartori 1970). MLG remains compelling because it encompasses several analytical levels (Piattoni 2009). How can the principles of MLG be applied across a variety of contexts, drawing its specific formulation from that context, and yet remain MLG? This may have implications for the conceptualisation of MLG in Australia.

Marks concluded that the multilevel governance emerging within the EU in the 1990s was

...characterized by co-decision making across several nested tiers of government, ill-defined and shifting spheres of competence..., and an ongoing search for principles of decisional distribution that might be applied to this emerging polity....it might be fruitful to describe the process of decisional reallocation ... as one aspect of a centrifugal process in which some decisional powers are shifted down to municipal, local, and regional governments, some are transferred from states to the EC (European Commission), and some are shifted in both directions simultaneously (Marks 1993).

The key features illustrated here, which are seen as having primary relevance to this research, are the 'system of continuous negotiation', 'nested governments', 'institutional creation', 'decisional reallocation', 'partnerships', 'subsidiarity', 'multiple connections within the hierarchy,' i.e., not just a linear two-directional pathway, 'flexibility of understanding' and 'shifting sphere of competence'.

Additional features include:

- MLG as a tool for potentially addressing disadvantage.
- The acceptance of changing roles of leading institutions; national governments are not always best at implementing regional programs; programme by programme negotiations.
- The participation of subnational representatives alongside state representatives in preparing and implementing programs and policy.
- Recommendation: regular all-of-nested-hierarchy workshops to plan, allocate and resource future programs including monitoring, evaluation, reporting, and improvement (MERI).
- The role of NGOs.
- The European Commission has led in designing an institutional framework.
- Designing multilevel policy.
- Multilevel pathway facilitation.
- The meaning of subsidiarity is open to conflicting interpretation.

Marks (1996) identifies drivers for devolution by nation states including overload (excessive workload), escape from responsibilities, e.g., taxation, and regional pressure and competition. He further identifies individual leaders within government as the key actors rather than states, which he conceives of as a set of institutions and a set of rules - it is the leaders who occupy positions of authority and have goals 'not limited to defending central state competencies.'

He further identifies (1996, pp. 25-28) three situations when leaders disperse authority, where they a) prefer to wash their hands of authority; b) because some concern outweighs their resistance to shift authority; and c) where they are unable to check or reverse dispersal. This last situation includes constraints such as institution lock-in where sub-state institutions have captured the competence of a certain authority and it is too expensive to reverse this. These situations can also be used to gain some understanding on potential limitation to dispersal of authority and may shed light on options for addressing these limitations, i.e., barriers. Marks also discusses the use of international commitments to gain bargaining advantage in domestic politics. State Premier Weatherill's public participation (Fedorowytsch 2015a, 2015b) at the Paris COPs 21 and The Climate Group's States and Regions Alliance could be, *inter alia*, a potential signal to the Commonwealth on climate change policy. (I see it as undermining the national position by being at the table whereas the national position is weakly presented).

Hooghe and Marks (Hooghe & Marks 2001b, p. 4; 2003) identify two types of MLG: Type I MLG is where there is a '...dispersion of authority to a limited number of non-overlapping jurisdictions at a limited number of levels. Jurisdictions in this system of governance tend to bundle authority in quite large packages; they are usually non-overlapping; and they are relatively stable.' Type II MLG presents '...a complex, fluid, patchwork of innumerable, overlapping jurisdictions. These jurisdictions are likely to have extremely fungible competencies, which can be spliced apart into functionally specific jurisdictions; they are often overlapping; and they tend to be lean and flexible—they come and go as demands for governance change.'

Type I and Type II MLG include the following characteristics as presented in Table 2.2 below.

Table 2.2 Characteristics of the Types of MLG

TYPE I	TYPE II
<i>Multi-task</i> jurisdictions	<i>Task-specific</i> jurisdictions
<i>Mutually exclusive</i> jurisdictions at any particular level	<i>Overlapping</i> jurisdictions at all levels
<i>Limited</i> number of jurisdictions	<i>Unlimited</i> number of jurisdictions
Jurisdictions organized in a <i>limited number of levels</i>	<i>No limit</i> to the number of jurisdictional levels
Jurisdictions are intended to be <i>permanent</i>	Jurisdictions are intended to be <i>flexible</i>

Source: Hooghe & Marks 2001b

Hooghe and Mark locate Type I MLG across the world at the national level citing the US, Russia, China, and India as some examples. Type II MLG appears on the margins of Type I MLG, e.g., at the edges of private/public and national/international interaction. They place local government interactions with community association in the Type II domain. Type II governance also occurs where there are common pool resource issues. The EU includes both Type I and Type II MLG (Pierre & Peters 2019). Saito-Jensen (2015, p. 3) and Bulkeley et al (2003) argue that Type II MLG is polycentric governance.

The type of democracy influences the way in which MLG functions. Grey (2016) aligns representative democracy with politicians' duty to legislate as opposed to using plebiscites to superimpose the machinery of participatory democracy over the framework of our representative democracy, which he considers 'dangerous'. This might influence our interpretation of the extent of dispersion of authority as claimed by some proponents. Grey quotes Plato and says, 'good governance requires a political system which delivers the right policies - policies that respect truth and justice – rather than following popular opinion'. This concurs with Marks' observation on leaders pursuing their goals as a driver for devolution.

So, the way we implement our chosen brand of democracy may inform the depth of MLG we work with (Marks 1996 pg. 27; Grey 2016). Marks argues that one feature of liberal democracy is that it is not necessary to concentrate authority into one's own hands to hold onto office. It is merely an example to illustrate a (relevant) point pertinent to implications of brands of democracy.

The structure of governments influences governance where federal systems are characterised by horizontal links between institutions and hierarchical modes of action (Beer 2017).

More recently Hooghe and Marks (2020) argue that MLG has produced several effects. These include extending democracy to sub- and supra-national levels, engaging territorial minorities and generating greater variation in social policy. However, it does also provoke a dilemma (Hooghe & Marks 2021) by imposing a need for coordination ‘... it reduces the capacity of central governments to issues authoritative commands.’ In the absence of any hierarchy, coordination depends on shared norms which extend cooperation.

The above illustrates the diversity of positions on MLG and its complexity. While some general principles or characteristics of MLG may be articulated, the way in which they function is dependent on the actors, the timing, and the spatial boundaries of each specific case – i.e., context matters.

2.7. Climate change and multilevel governance

Climate change is used to explore multilevel governance (MLG). A few other sectors explore MLG including water (Bisaro, Hinkel & Kranz 2010; Cosens et al. 2014; Cosens & Williams 2012), health (Wilson 2004) and education (Enders 2004, Hooghe & Marks 2003). However, the perception of MLG as a local to global network appears to be better illustrated through a climate change lens given that local GHG emissions collectively build up to global impacts – the causal connections seem more obvious and logical. It is also acknowledged that addressing climate change requires action across various levels (SA Government 2010) and therefore the effective engagement of stakeholders across all these levels, as with MLG, is critical. While the term MLG is not used widely, at least in Australia, some understand it to be implicit through the recognition of the roles for all levels of society in addressing climate change.

The recent IPCC Special Report, Global Warming of 1.5°C (de Coninck et al. 2018, p. 354) sees MLG as ‘...an enabler for systemic transformation and effective governance, as the concept is thought to allow for combining decisions across levels and sectors and across institutional types at the same level...’ Furthermore, the

IPCC's 1.5°C Special Report recognised that addressing climate change requires 'accountable multilevel governance' including a variety of state and nonstate actors and institutions from government, industry, civil society, and scientific institutions.

Related topics within MLG and climate change include subnational governments (Sainz de Murieta & Setzer 2019), overcoming barriers (Amundsen, Berglund & Westskog 2010), trans-governmental institutions (Andonova 2005), accountability (Bache et al. 2015), the influence of forums (Bates et al. 2013), regional partnership (Bauer & Steurer 2014), cities and MLG (Betsill & Bulkeley 2006), decision making (Daniell et al. 2011) and reducing transport emissions (Butterfield & Low 2017) to mention a few.

2.7.1. Polycentric Governance

Polycentric governance (PCG) has some strong connections to MLG but the nature of the relationship between the two theories is poorly articulated. It appears that there are two camps though the boundaries between them are very fuzzy and in some case non-existent. A comprehensive exploration of the relationship between PCG and MLG is well beyond the scope of this thesis, but it is important to note both theories as they complement each other.

PCG has developed out of the work of Vincent and Elinor Ostrom and colleagues (McGinnis 1999; McGinnis 2016; Ostrom 2008, 2009, 2010a, 2010b, 2012b; Ostrom, Tiebout & Warren 1961). As with similar theories there are a diversity of interpretations of PCG. McGinnis (2016, p. 5) distils many of these descriptions into a three-part definition, consisting of structure, process, and outcomes:

A polycentric system of governance consists of (1) multiple centres of decision making authority with overlapping jurisdictions, (2) which interact through a process of mutual adjustment during which they frequently establish new formal collaborations or informal commitments, and (3) their interactions generate a regularized pattern of overarching social order which captures efficiencies of scale at all levels of aggregation, including providing a secure foundation for democratic self-governance.

Jordan et al (2018) have written the most recent comprehensive book on PCG. While both the Ostroms (2012b) and Hooghe and Marks (2003) as leaders of the PCG and MLG schools respectively discuss each other's theories they do not provide comprehensive descriptions of the relationship between the two.

An example area of connectivity between PCG and MLG is the incorporation of resilience and socio-ecological systems into both theories. The Ostroms, for example, working on common pool resources, developed the concept of PCG in the early 1990s (Ostrom 1990) and linked it with resilience and social-ecological systems (Ostrom & Janssen 2005), thus connecting with a wide range of other authors including (Adger, Arnell & Tompkins 2005), Adger (2005), Cash (2006), Folke (2010), Berkes (1992), (Brondizio, Ostrom & Young 2009) and Brondizio (2009) to mention a few. Ostrom (2009, 2010) and others (Cole 2011) also write on polycentricity within the context of climate change (Ostrom 2012a).

In seeking to understand potential distinctions between MLG and PCG, distinguishing components are of particular interest (Table 2.3). Morrison et al. (2019, p. 1; 2017) note polycentric systems involve 'governing authorities at different scales which *do not stand* in hierarchical relationship to each other' (emphasis added). This is also noted by Monios (2019, p. 27), (Abbott 2018) and Jordan et al. (2018), noting that PCG structures are decentralised, community-based, self-organising and mutually adjusting. Compounding the lack of clarity between MLG and PCG are statements like 'the European Union has often been understood as both a multilevel system and a polycentric system' (Morrison et al. 2017).

PCG seems potentially less focussed on subsidiarity (Heinen, Arlati & Knieling 2021), though van Zeben and Nicolaidis (2019) suggest otherwise.

Several authors have used both PCG and MLG including Homsy, Liu, and Warner (2018), Homsy and Warner (2015), Wurzel Liefferink and Torney (2019), Huitema et al. (2016), Gruby and Basurto (2014), Maryudi and Sahide (2017) and Mathias, Lade and Galaz (2017).

Table 2.3 Defining characteristics of PCG and MLG.

	PCG	MLG
	<ol style="list-style-type: none"> 1. Many autonomous units formally independent of one another 2. Multiple overlapping scales 3. Units choose to act in ways that take account of others (through mutual adjustment) 4. Self-organised processes of cooperation and conflict resolution 5. System-like behaviour 6. Public and private actors 	<ol style="list-style-type: none"> 1. Nested hierarchy 2. Negotiated roles 3. Interdependent levels 4. Multi-scalar 5. Strong applications of subsidiarity principle 6. Public and private actors

Source: adapted from Morrison et al. (2017)

While the PCG - MLG relationships needs further exploration I see them as two overlapping theories that are not mutually exclusive and can operate simultaneously. PCG is shallower, i.e., less hierarchical, but broader with not as many hierarchical levels. MLG is deeper and narrower with fewer horizontal connections. The role of power is distinctive within and between the two concepts. Within the context of this thesis RAP are collectively a PCG process but a MLG process within the context of community, local and state government.

2.8. Multilevel Governance in Australia

General discussions on governance in Australia tend to focus on institutional or governance arrangements rather than governance processes. Rather than present a brief overview of governance in Australia this section covers MLG in Australian not only to provide the context but also as an example of the current state of development of governance per se.

There is relatively little literature on the explicit application of MLG in Australia and even less in South Australia. That is, the use of the term Multilevel Governance is limited as is a clear demonstration of the application of MLG theory (Daniell & Kay 2017), perhaps recognising that the concept of MLG is less than 30 years old. This questions the application of MLG in Australia. This depends on how MLG is defined, as discussed above. Regionalism, and localism, for example, are central approaches across many sectors in Australia and discussed below. They are also core MLG features. Dismissing regionalism because of the limited use of MLG in Australia misrepresents, to some extent, current practices. In reviewing the literature related to MLG in Australia, it has therefore been necessary to go beyond just searching for the term. As is discussed below, even use of the term 'multilevel governance' often provides limited insight, yet the use of MLG is necessary to indicate a more substantial application of the theory. The most significant contribution to date by Daniell and Kay (2017) goes some way to address this deficiency and this is discussed below.

MLG could be implicit in several sectors, including health (Abimbola, Baatiema & Bigdeli 2019; Abimbola et al. 2014; Paquet & Schertzer 2020; Touati et al. 2015), education (Mercer & Jarvie 2017), urban development (Stilwell & Troy 2000; Troy 2017), and housing (Dodson et al. 2017). The focus of this thesis is on the application of MLG to adaptation to climate change and related areas.

Painter (2001) presents some of the earliest work on multilevel governance in his discussion on federalism in Australia. Using the work of scholars in the EU he quotes Marks (1996), highlighting the '*overlapping competencies among multiple levels of governments and the interactions of political actors across these levels...*' Drawing on Scharpf's (1997a) 'anarchic field' and distinguishing between networks, regimes and joint decision systems, Painter provides evidence from case studies for an evolving system of multilevel governance. He thus provides a clear picture of MLG that is more than just the use of a general term.

Continuing the federal focus, Brown (2011, p. 1) states that multilevel governance is intended to capture '*...the reality that governance – authoritative action on public matters – is increasingly the domain of no one government, but is shared, negotiated, and mediated in a multilevel setting. Thus, it involves nongovernmental actors, international organizations, and differing orders and functional public authorities of*

many kinds'. Brown identifies the Council of Australian Governments (COAG), (now effectively replaced by the National Cabinet as of March 2020 to address the Covid-19 pandemic) as an Australian innovation to coordinate a range of programmes across the federal and all state and territory governments. The role of COAG in facilitating intergovernmental decision-making, at least within the context of ecological sustainable development (Hollander 2015), provides an example of cooperative federalism (Painter 1996). Local government, coming under state legislation, is a noticeable absence from this institution. However, he does not provide additional in-depth discussion and therefore clarity on the nature of MLG.

Gleeson (2001) describes Australia's unique MLG systems as being derived from its colonial history and subsequent constitutional development primarily around federalism. However, in more recent times, this has pitched state against state, undermining the collaborative core central to MLG processes.

Gleeson (2003) analyses the European Union regional policy framework and considers lessons for Australia's 'multilevel governance system' (p. 223). He notes the complicated and diverse nature of the 'new regionalism' and the rural versus urban bias in regional Australia, arguing that *'the relatively weaker and more sporadic development of Australian regional policy leaves considerable room for development of, and improvement to, this mode of governance in Australia'* (p. 234). This provides little insight into what the 'multilevel governance system' is beyond the possible federal, state, and local governments. Clearly understanding what is meant by these terms is critical as Beer and Maude (2002, p. 27) comment that *'Governance structures are ... important both for policy and the development of a better understanding of regional development agencies.'*

Marshall (2008a, 2008b, 2008c, 2008d) is one of the first researchers to write about multilevel governance within the NRM context in Australia, though his work does not apply this specifically to climate change adaptation. He uses 'multilevel governance' (Marshall 2008c, p. 77) in a more general sense, as in multiple levels of governance, but makes no reference to theoretical elements of MLG or core MLG authors. While he covers nesting, subsidiarity and community-based governance in these and other papers, his work focuses more on polycentric governance, which he presents as synonymous with 'multilevel governance' (Marshall 2008b, p. 1). So, it is not clear

whether we can take what he writes as applicable to MLG given the commonalities with PCG, and given he does not comment on or reference any core MLG researchers or theory. However, he does make some contribution to the MLG – PCG debate as he moves more towards a PCG frame in his later work (Marshall, Connell & Taylor 2013; Marshall & Malik 2019).

Lockwood et al (2009, p. 169) build on Marshall's work, 'identifying the strength and challenges of the Australian experiment with devolved NRM governance'. This work also broadly looks at the three tiers of regional, state, and national NRM governance as a multilevel system and covers off on several MLG characteristics. These include devolution of power/decentralisation of authority, vertical and horizontal integration, application of the principle of subsidiarity, multilevel nesting, and effective communications and coordination mechanisms. These build on the eight governance principles developed by Lockwood and others (Davidson et al. 2006; Davidson et al. 2008; Lockwood, Davidson, Griffith, Curtis, et al. 2008; Lockwood, Davidson, Griffith, Stratford, et al. 2008) which provide a basis for development of MLG praxis in Australia. While they provide a sound basis for ongoing dialogue on governance in NRM in Australia and are elaborated in Lockwood et al (2010), they fall short in maximising the application of MLG to this domain. They focus their discussions on regional NRM, and this is discussed below.

'Good multilevel governance demands effective multi-lateral engagement that involves organisations at each level actively participating in the design, development, and delivery of the governance system. Relations of trust, mutual respect and responsibility between the parties are crucial. Transparency in decision-making processes is also required at every level of a governance system in order to create the conditions needed for inclusive engagement and effective partnership development'
(Lockwood et al. 2009, p. 182).

Regional organisations, such as regional NRM bodies, have played an important role in planning and implementing a range of key natural resource programmes from biodiversity conservation to sustainable agriculture and from a local to landscape level. Several regional bodies emerged from Catchment Water Management Boards

(CWMBs), which were promoted as community-based organisations. Community engagement and empowerment were part of the enabling processes for the regional NRM boards. With concurrent development of the Landcare movement there was a major shift toward community-based NRM (CBNRM), described as ‘the great experiment’ (Curtis et al. 2014). This regional NRM experiment has resulted in some interesting lessons which caution inappropriate application of elements of MLG. Their (Curtis et al. 2014, p. 193) lessons ‘...suggest that a coherent, capable multilevel governance approach is fundamental to progress’ and address: strengthening motivation of community to voluntarily contribute to NRM; the application of subsidiarity so as to promote self-determination at the lowest level leaving the higher levels’ subsidiary to the lower levels; building capacity of all levels and finally each region is unique and requires its own model based on its capacities and social-ecological situation including recognition that CBNRM goes beyond NRM into the broader regional rural community. They promote a more holistic approach to nested governance and the development and application of adaptive management and resilience thinking. Deliberate or incidental misinterpretation of MLG and preferential implementation favouring vested interests can result in outcomes counter to the intent of MLG and some of the key principles.

Regionalisation has presented a complex and evolving layer within the governance hierarchy and inter alia connects top-down and bottom-up approaches (Woodhill 1996), helping ‘translate national policy to a more accessible level for local community’ (Farrelly 2005, p. 403). Cheers, Lane, and Morrison (2005) explore a regional model of governance for the new regional NRM regime, which they label ‘civic regionalism’ drawing on the notion that NRM is best delivered through a regionally organised board or committee (Lane, McDonald & Morrison 2004b), (see also Lane, McDonald & Morrison 2004a; Thom 2004). This connects with Smyth, Reddel, and Jones’ (Smyth, Reddel & Jones 2005) discussion of ‘associational governance’ which is based on local, social networked and participatory governance debates of the New Regionalism as presented by Rainnie (2005) and Genoff (2005) and manifest in South Australia under the *South Australian Natural Resources Management Act (2004)* (South Australian Government 2004). Others see the governance mechanisms at the regional scale as weak (Beer & Maude, 2005; Eversole, 2016; Eversole & Martin, 2005) and

decentralisation often contains limited devolution of power (Beer 2014; Beer & Maude 2005; Lockwood et al. 2009).

The issue of what roles are carried out by which organisations at what level is central in multilevel governance (Ryan S et al. 2010, p. 7). Discrete and negotiated roles between organisations at different levels contribute to effective MLG. Uncertain and overlapping roles often result in confusion, duplication, and inaction. There is evidence in Australia that there has been recent confusion over NRM roles and responsibilities and that it has had negative impacts on legitimacy and effectiveness. *'... if the Australian system of devolved governance is to be effective, then governments have central roles in backing it with appropriate levels of technical support and funding, a degree of budgetary flexibility, clear allocation of roles and responsibilities and in ensuring minimal conflict between such roles'* (Davidson & Lockwood 2009, p. 79).

In an attempt to consolidate a broader and deeper understanding of governance in NRM across Australia, the Regional NRM Chairs, developed a report (Ryan S et al. 2010) which *'... provides an introduction to thinking about NRM governance across Australia as a connected system of social organisation set within a linked social-ecological system.'* It is interesting to note that this initiative was taken by the collective of Regional NRM organisations, i.e., they perceived the need; not some other level, and that they see it as an introduction to 'thinking about NRM governance'. They proposed ten principles to 'underpin the design' of future governance changes which are worth noting, if for no other reasons but that they provide a snapshot of the national NRM understanding of governance. Also, of interest is that there was limited follow up of these principles in the literature (Curtis et al. 2014; Potts et al. 2016). Dale et al. (2020) do use some of the principles but not in an earlier publication (Dale, Vella & Potts 2013).

Following Marshall (2008c) they adopt a polycentric governance approach, elements of which are represented in the principles including nesting, devolution of decision making and subsidiarity. There has been no known comprehensive evaluation of the application by regional NRM boards.

Dansey (2013) highlights the Australian Government's (2010) reinforcement of the adaptation / mitigation dichotomy and the impact this has on decision-making processes, policy division and project paralysis, resulting in a need for a more

constructive way of developing climate change policy across multiple levels of government. Dansey (2013, p. 7) effectively conflates MLG and PCG and states that *'...the value of a multilevel and multi-scaler approach, recognises that mapping out current institutional spheres and networks is valuable in achieving climate change policy goals.'* As Bache and Flinders (2004, p. 5) note, one value of MLG is its capacity to match *'the scale of governance with the level of the policy.'* Together these are interpreted as the development of the multilevel institutions, partnerships and networks being as important as climate change policy goals, suggesting that the multilevel governance system could be applied to a range of policy settings. Dansey provides additional information but does not clarify what MLG is and how it or PCG applications could work in Australia.

Lyle (2015) covers several MLG features but once again does not mention MLG or PCG and does not reference any key researchers from these respective domains. He sees *'a nested multi-scale spatial hierarchy of influence for CCA (Climate Change Adaptation) ... providing an understanding of the complexity of the CCA decision-making process highlighting the factors involved across different scales'* (Lyle 2015, p. 38). This could be interpreted as some manifestation of MLG but misses any benefits of explicitly naming the practice. What might be missing by not calling it MLG? Beyond subsidiarity, this work, funded by the SA Government, indicates the need to *'understand the cross scale and temporal dynamics involved in the hierarchy to make CCA (decision making) a more rapid process'* (Lyle 2015, p. 38). Lyle also makes the point that policy development can be targeted to each scale to enhance adoption at the regional level. Of interest here is that, while referencing Cash (2006) and Termeer, Dewulf & Lieshout (2010), he appears to use scale more as meaning 'levels' as per the discussion above. So, his 'scales' as represented in his Figure 1 p. 40 are, in this thesis, more levels along the scale, which in this case goes from individual to 'hazardscape', unless he recognises that there are differing levels within each of the scales. Lyle (2015, p. 46) concludes that the scale within the nested multi-scale spatial hierarchy *'provides an understanding of the complexity of the CCA decision-making process highlighting the factors involved across the different scales. These scales, their interaction and feedback loops influence planning and future adoption of CCA strategies.'* This supports the building picture of multilevel governance as it might be considered to function in Australia.

Serrao-Neumann and Low Choy (2014) utilise scenario planning to assist multilevel decision making involving climate change adaptation but point out that while multilevel governance provides an adequate framework for adaptation to climate change *'...multilevel governance associated with adaptation planning is not a straightforward process and that we are just starting to understand how adaptation planning might occur'* (Serrao-Neumann, Harman & Low Choy 2013, p. 443). Serrao-Neumann et al. (Serrao-Neumann, Cox & Low Choy 2019, p. 163) suggest that PCG could be an effective structure for building capacity for adaptive or transformative governance, where *'Multilevel governance in polycentric systems implies that decision making authority is distributed in a nested hierarchy and does not reside at one single level, neither top (only highest level government enforcing decisions), nor medium (only states enforcing decisions beneficial for their region without considering others), nor individuals with complete freedom to act or being connected in a market structure only.'*

'Tang et al. (2010) suggest that top-down directives set up at the state level strongly influence local authorities to implement actions to address climate change. These include statutory mechanisms that address issues associated with multilevel governance (Bulkeley, 2009; Amundsen et al., 2010), particularly in terms of clarifying roles and responsibilities attributed to different government levels' (Serrao-Neumann, Harman & Low Choy 2013).

Nationally the National Climate Change Adaptation Research Facility (NCCARF) was funded by the Australian Government, which has resourced many projects, some specifically dealing with South Australia at several levels. Relevant projects include Gross (2011) and Nursey-Bray et al. (2013) covering Indigenous considerations for climate change.

Bates et al. (2012, 2013) explore the influence MLG has on the development and implementation of organisational practices in climate adaptation in Australia. They investigate the roles that networks, and forums play in organisational cooperation in adaptation policy development. They contend that *'forums constitute a level of governance deeply embedded in organisational practice'* (Bates et al. 2013). Drawing on Reed and Bruyneel (2010) and Betsill and Bulkeley (2006) they emphasise the vertical and horizontal interconnections and the adaptive governance elements of

MLG. Again, they do not explore MLG in depth despite citing several key MLG researchers such as Hooghe and Marks and Bache and Flinders. Findings from their research include that *'...adaptive actions by organisations and other agents in multilevel governance regimes in Australia are in most cases ad hoc and uncoordinated.'* They do not interpret these findings in terms of lessons for MLG, which they recognise as being an important and necessary framework. Adding forums as another level of governance has potential implications for other management practices such as meetings, workshops and conferences adding further to the complexity of adaptation across the world.

Daniell and Kay (2017, p. 6) note a lack of consensus in defining MLG and *'... take the European view of MLG processes, which can be defined as systems of 'continuous negotiation among nested governments at several territorial tiers'* (Marks 1993: 392), where authority is not only dispersed vertically between levels of administration but also horizontally across different sectors of interest and spheres of influence, including non-government actors, markets and civil society (Bache and Flinders 2004). While this provides an overarching framework for those authors who do not specifically define their positions on MLG it also allows them to distance themselves from this definition and not clearly align their discussion with MLG.

Morrison and others (Morrison & Lane 2006; Morrison 2007; Morrison et al. 2020; Morrison et al. 2017) explore multiscale governance and polycentric governance (Morrison et al. 2019; Morrison 2017) in Australia. She and co-authors note the EU illustrates both a multilevel and polycentric system (Morrison et al. 2017) suggesting some relationship. They further note that *'... it is now widely recognized that effective multiscale governance entails multiple governing authorities at different scales that are engaged in self-organization and mutual adjustment. Multiscale governance is more than just networks of actors; it also includes non-structural functions such as cooperation, learning, and equitable resource distribution. However, considerable gaps in our knowledge remain—in particular how to harness untapped power dynamics within multiscale structures...'* (Morrison et al. 2020, p. 69).

Morrison (2007) *'... suggests that multiscale governance of environmental risks and adaptation is better conceptualized as both decentralized networks of cooperative learning and as expressions of power-laden social relations...'* and that *'...central to*

the claims made for polycentricity are multiscale issues of power and responsibility. Indeed, multiscale power dynamics can move polycentric regimes between decentralized, recentralized, and fragmented states over time, with implications for both the structure of the system and its ability to achieve outcomes' (Morrison 2017).

This focus on the power dynamics within multilevel and polycentric governance is important but often not discussed, as noted below in Chapter 8. Avoiding addressing the power dynamics and relationships results in maintaining the current power balance and constrains development and progress towards better outcomes. Morrison (2019; 2017) mostly discusses polycentric governance and as such this is not dealt with in detail here.

Table 2.4 Governance principles

	Characteristic	Governance Principle
1	Continuity:	for Australia to be sustainable, it needs an enduring, countrywide NRM delivery infrastructure
2	Subsidiarity:	devolve decision making to the lowest capable level
3	Integrated goal setting:	base investments and governance mechanisms on coherent, nested, and integrated goals
4	Holism:	plan to address whole systems
5	Systems approach:	match governance mechanisms to the nature of the linked social-ecological system
6	Relationship orientation:	recognise that relationships are as important as organisations
7	Resilience:	manage for resilience of ecosystems and communities
8	Knowledge and innovation:	equip the governance system with skills, capacity, and knowledge, and encourage innovation
9	Accountability:	base the case for investment and accountability on sound systems data and knowledge
10	Responsiveness and adaptability:	regularly review and adapt the whole Australian NRM governance system

Source: Ryan 2010

Dale, Ryan, and Broderick (2017), focusing on NRM in Australia, refer to multiple levels of governance across different spatial scales: national regional and local. They recognise that governance changes across these different levels independently from

the broader systems context. For guiding design of future arrangements, they draw on Ryan et al. (2010) as discussed above and apply the principles of governance (Table 2.4) as criteria for assessing the functional health of NRM governance systems to *'...explore systemic reforms that would enhance our multilevel NRM system...'* (pg 329). They note that the interconnection between the different levels is weak, and organisations often make independent decisions with no single organisation taking responsibility for the overall integration of the system. They find that systemic application of the MLG principles is missing from the policy design phase and shifting back and forth on key principles by successive state and federal governments destabilised institutions and arrangements. That is, the whole NRM system was not specifically designed on MLG principles and where things do work it is based just as much on serendipity as intent. Dale et al identify five reforms they believe will strengthen MLG in NRM in Australia:

1. Build a more enduring and effective national NRM infrastructure,
2. Improve integration of strategic NRM issues across all governments including within the federal government,
3. Strengthen integrated regional planning and implementation,
4. Enhancing collaboration of research and knowledge management, and
5. Create a national system of accounts, reporting and adaptive management.

2.8.1. The Great Barrier Reef

Management and governance of the Great Barrier Reef Marine Park (GBRMP) has been cited as an example of MLG in Australia (Dale et al. 2018; Fidelman, Leitch & Nelson 2013; Schultz et al. 2015). While these studies mention MLG there is limited discussion of why and how the Great Barrier Reef Marine Park (GBRMPA) governance practice can be considered MLG.

The GBRMP, a United Nations Education, Scientific and Cultural Organisation (UNESCO) World heritage site, is managed by the GBRMP Authority (GBRMPA). The GBRMPA has a Board which is responsible for the management of the GBRMP under the Great Barrier Reef Marine Park Act 1975. The Board includes a Chair and CEO both nominated by the federal Minister for the Environment. Other members include a

nominee by the Queensland Government, an individual with Indigenous knowledge and expertise and an individual with tourism expertise. The Board reports to the Minister for the Environment and is supported by several Advisory Committees including several Local Marine Advisory Committees (LMAC). A recent review (Craik 2017) of the GBRMPA governance reinforced these arrangements.

Howlet et al. (2017) argue the integration efforts in managing the GBR '*...serve as an example of successful multilevel governance, multiple use management, marine spatial planning and integration between jurisdictions, sectors and communities.*' Here again there is limited consideration of how this is practiced and why it qualifies as MLG.

Other research mentions MLG but not its use (Fidelman et al. 2019) or recognise levels of governance but do not mention MLG (Walpole & Hadwen 2022). Morrison (2017) sees the GBR as PCG, describing the evolving nature of the polycentric governance regimes of the Great Barrier Reef. Daniell and Kay (2017) do not have any major discussions of the GBRMPA as a MLG process.

Several levels of arrangements exist within the GBRMPA governance structure. The Minister and Board probably make most of the decisions, but the Advisory Committees are probably constrained in their decision making capacity, for example, as indicated by the terms of reference of the LMAC (Great Barrier Reef Marine Park Authority 2021). There is insufficient evidence e.g., of negotiation of delegation of authority or the application of subsidiarity, available which could allow for an operational description and explanation of how the governance of GBRMPA can be called MLG. There is likewise limited capacity to predict any MLG outcomes from current practice. Dale et al (2018) note the failure of implementation arising from a failure of subsidiarity.

Given the above, it is difficult to classify the governance practice of the GBRMP as a significant example of MLG. As with other practices there are certainly expressions of several components which are critical to MLG, but these are not sufficient and do not consolidate adequately to warrant the status of a fuller MLG system.

2.8.2. The Murray-Darling Basin (MDB)

Similar to the description for the Great Barrier Reef, the governance of the Murray-Darling Basin (MDB) is seen by some as an example of MLG (Ross & Connell 2016). The MDB is managed by the Murray Darling Basin Authority (MDBA) through several complex arrangements (set out in the Water Act 2007) involving, *inter alia*, the federal Water Minister, the Ministerial Council made of representatives from five governments and one territory the MDBA, Basin Officials and a basin Community Committee. A complex network of advice, consultation and direction drive the whole structure (Murray Darling Basin Authority 2022).

Many of the institutions involved have developed significant governance capacity. For example, regional Catchment Management Authorities (CMAs) have become adept at working with state agencies and communities in multilevel governance systems (Head, Ross & Bellamy 2016). However, while multiple governance layers (Docker & Robinson 2014) may exist within the MDB, there continues to be confusion with the roles and responsibilities across many catchment authorities, independent of the degree of decentralisation (Ryan S et al. 2010).

MLG in complex contexts with multiple competing objectives such as the MDB, can hinder implementation of complex plans as politics and powerful interest groups and coalitions (Colloff & Pittock 2019) can influence what is done, or not, where, and how (Daniell, Coombes & White 2014; Hart 2016). Connell (2011) takes this further citing the MDB as a dysfunctional multilevel governance system and Garrick et al. (2012) discuss the tensions in multi-jurisdictional governance arrangements and the limits of subsidiarity. Often policy initiatives that are ostensibly decentralised contain very little devolution of power and resources (Beer 2014).

As above with the GBRMP there is a lack of evidence and limited description of the functioning of any suggested MLG arrangements to justify the functional use of the neologism MLG to the governing of the MBD. On the other hand, Morrison et al. (2017) explores the Murray Darling Basin as a 'moderate' form of polycentrism as its management becomes less polycentric as it centralises. That is the centralised federal influence controls the spread and dispersion of authority and responsibility. The MDB is thus considered a weaker form of polycentricism and indeed of MLG.

2.9. Multilevel Governance in South Australia

There are very few explicit examples of the application of MLG or PCG in South Australia. While this may be representative of the limited formal, by which I mean, acknowledged, application in the South Australian jurisdiction, this does not necessarily represent the extent to which MLG, or multiple levels of governance may have been applied.

Iwanicki et al. (2017) provide one of the few examples focussed on South Australia. Several other chapters in this volume (Daniell & Kay 2017) include South Australia as part of broader issues (e.g., Andrews 2017) but they do not provide further specific insights of MLG in South Australia. Citing Kay (2017, p. 34) Iwanicki et al. conceptualise MLG as a process '*creating cross-jurisdictional policy capacity in Australia, across and between different governance jurisdictions to match the territorial scale that is functional for effective policy response*', their case study being a '*formal, institutionalised MLG with a hierarchy of governance determined by legislation*' (pp. 255-256). They identify three levels of governance: federal, state, and local, and include at federal level the Council of Australian Governments (COAG), which has oversight of a range of initiatives. In the context of the national water reform agenda, they introduce the CWMBs, which operate at regional level (i.e., sub-state level). They present a snapshot of water resource planning and its integration into broader NRM reform. Typically, various players have responsibility for different planning processes, e.g., CWMB for the regional NRM plan, local government for Development Plans. While they present some elements that could be considered part of an MLG process: several levels of governance and the differing roles they take on, horizontal and vertical interactions, cross-sectoral integration (planning and NRM), collaboration between levels of government, the importance of community participation, communication and engagement are not explicitly contextualised within any MLG theory and therefore left open to interpretation. A description of characteristics which are part of MLG processes does not necessarily make something an expression of MLG. They include token reference to Hooghe and Marks (2001b) and Ostrom (2008) but do not consolidate an MLG approach.

This superficial treatment is consistent with many chapters in this book where it appears the MLG neologism is applied retrospectively and then after the fact in which planning processes are viewed through an MLG lens. It is likely that none of the background documents referenced in Iwanicki et al. (2017) use the term MLG and were not conceived as MLG processes from the start. This retrospective conceptualisation does not reinvent these processes as MLG; naming something MLG does not make it MLG. This is typical of other processes where that lack of naming the processes leaves them open, e.g., from an accountability perspective, and this is potentially used as a means of control – ‘we are doing it anyway!’ or ‘since we have not named it MLG we do not have to comply with its requirements’. There are also several core elements in MLG that are not clear or missing. These include evidence of negotiation between levels on roles, authority (responsibility), and resourcing and application of subsidiarity.

Niven and Bardsley (2013, p. 196) acknowledge that ‘*To reduce the threats to the coast from climate change, specifically sea level rise, and thus to address the issue of increasing risk, various management approaches are advocated across a multilevel governance scale*’. However, they do not expand on this.

Regionalisation within the federal Australian system, as discussed above, provides a context within which MLG could be expressed. As elsewhere in Australia, regionalisation and regionalism have been a strong driving force in NRM and related sectors (Lane, McDonald & Morrison 2004b). Regionalisation ‘... *aims to achieve integrated, coordinated and collaborative planning and management close to the multitude of stakeholders involved*’ (Farrelly 2005, p. 393). Farrelly presents a nested hierarchy of organisations within South Australian NRM, illustrating connections and networks, which again potentially provides the framework for MLG processes. And while the Commonwealth and State governments, through their ever evolving and changing policies, programmes, and legislation, devolve funding to regional and local organisations, there is a ‘...*need to involve the community more comprehensively and to further devolve decision making to the local level*’ (Farrelly 2005, p. 401). Many of the basic elements of MLG practice are present in South Australia, supporting a general view that MLG is partially there in practice if not in name. These elements of MLG are important requirements but they are not sufficient to constitute a fully MLG process.

There is little material published on localism (Cleary & Hogan 2016; Robbins 1978) which could be viewed as making some progress toward MLG thinking. Robbins comments on the compatibility of people's perceptions of community with the population size of local government in South Australia, suggesting that there needs to be consistency between levels within the jurisdictional scale and expectations of the level; that is local government in SA could be better tailored by incorporating additional functions matching role with size, i.e., the scope of the role of the level is influenced by the size (population, resources, capacity) of the level.

Gillet et al. (2014) discuss some of the issues resulting from conflict between local, regional, and state-level water management in SE South Australia. They highlight the lack of consensus between levels and the value of elevating involvement to State level, supported by nested hierarchies of federal to regional policies and legislation. This movement to State level resulted not only from a lack of consensus in water use but also deficiencies in policy requiring legislative amendments, thus recognising a key State responsibility (Marshall 2008c). Here, once more, elements of MLG, including nested hierarchies, decentralisation, and devolving power, which in this case study did not occur, are considered but not explicitly in terms of MLG potentially losing some integrity to the process. Again, what is lost by not naming MLG? This movement of responsibility, authority and power is critical for effective MLG as roles and capacities change, evolve, and emerge with time. This is part of the dynamic nature of governance processes.

A recent number of policy documents released by the South Australian Government identify decentralisation of decision making as a key policy initiative. This aims to '*empower and reinvigorate regional communities*' (Government of South Australia 2020c) and through them the broader community, putting the community at the heart of managing the natural resources. This further builds the regional model and associated community organisations but retains many of the challenges faced by these organisations as in the past, including controlling resources and power. As above and discussed further in Section 4.5, implementation of these policies is limited

In summary while some elements of MLG could be reasonably acknowledged in some practices, e.g., NRM, they are insufficient to justify claims of the use of MLG as a governance practice in South Australia.

2.10. Contextual concepts

A few other concepts and theories are relevant to this research. MLG is not a discrete theory, but it is connected to numerous other concepts. While these concepts and theories are not the central focus of this research, they do play a role and are referenced periodically throughout the thesis. Brief coverage of some of these concepts is provided below to assist in framing the reflections and analysis.

2.10.1. Complex adaptive systems

Complex adaptive systems (CAS) are dynamic networks of interacting adaptive agents (Gell-Mann 1994) which have three common characteristics: evolution, i.e., they adapt, aggregate behaviour, and anticipation (Holland 1992). They are also nonlinear, self organising (*inter alia*, translated from subsidiarity (Gussen, B 2019)) with no central coordination, follow a small set of simple governing rules, and generate unpredictable outcomes (Connor 2019). Examples of CAS are in biology e.g., swarming of birds and insects (Storms et al. 2019), robotics (Navarro & Matía 2013), health (Dickens 2012; Rickles, Hawe & Shiell 2007), business (Dentoni, Pinkse & Lubberink 2021) and society (Buckley, Schwendt & Goldstein 2008; McKenzie 2014). Preiser et al. (2018) and others (Hertz, Mancilla Garcia & Schlüter 2019) explore SES as CAS (Folke 2007).

CAS also include governance processes (Duit 2008; Duit et al. 2010; Koliba 2013; Pegram & Kreienkamp 2019; Roundy, Bradshaw & Brockman 2018; Schneider 2012; Weyer, Adelt & Hoffmann 2015) and can act as an analytical lens, for example, for developing a deeper understanding of some concepts, such as entrepreneurial ecosystems (Roundy, Bradshaw & Brockman 2018) and MLG (Loorbach 2007, 2010; Nykvist, Borgström & Boyd 2017; Touati et al. 2015; Weyer, Adelt & Hoffmann 2015). Anderson and Ostrom (2008) characterise polycentric governance systems as CAS.

The connections between CAS and MLG include the evolution of and adaption to the contexts or conditions, path dependency (de Abreu & de Andrade 2019), no central coordination, cross-scale, and systems relationships (Levin 1992, 1998; Rammel,

Stagl & Wilfing 2007), and anticipation and development of outcomes. MLG is a manifestation of CAS; understanding CAS facilitates management of MLG processes (Byrne & Callaghan 2013).

2.10.2. Wicked problems

Since the seminal paper by Rittel and Webber (1973) the concept of ‘wicked problems’ has developed to become part of common language across a range of sectors, including climate change (Grundmann 2016; Head 2014; Jordan et al. 2010; Kemmerzell 2019; Ney & Verweij 2015; Peters 2018; Steffen 2011; Termeer, Dewulf & Breeman 2013), public policy (Kwakkel, Walker & Haasnoot 2016; Newman & Head 2017), federalism (Paquet 2017), trans-disciplinarity (Guimarães et al. 2018), and water management (Hatfield-Dodds, Syme & Leitch 2006). Garnaut (2008, p. xviii) describes climate change as a ‘diabolical policy problem’, Steffen (2011) calls it a truly complex problem and Stern (2006) describes it as an externality like no other.

Wicked problems cannot be solved but must be resolved and renegotiated time and again (Grundmann 2016). Wicked problems are those that, *inter alia*, have no definitive formulation and have poorly defined boundaries (Newman & Head 2017). They have no stopping rule, i.e., the problems have no end (Rittel & Webber 1973; Waddock et al. 2015), their solutions are not true or false but ‘better or worse’ and there is no test of these solutions, every solution is a ‘one-shot operation’; i.e., there is no trial and error. Wicked problems are inherently unique and can be considered as symptoms of other problems (Rittel & Webber 1973, 1984). They are also scale sensitive and path-dependent (de Abreu & de Andrade 2019; Levin et al. 2009). However, Peters (2017) and Satori (1970) raise the concern of conceptual stretch in which the over-application of a concept dilutes its meaning (see also Gilligan & Vandenberg 2020; and Noordegraaf et al. 2019). Potential over-reach does not dispense with ‘wickedness’, implying not only a lack of consensus about (scientific) knowledge of the (potential and impact of the) effects of climate change and about (the consequences of) solutions for the problem, but it also means there are highly divergent viewpoints about the strategy on how to solve the issue with the actors involved (Hulme 2009; Verweij et al. 2006). Head (2019; Head & Xiang 2016) for example suggests that after forty years of wicked problems there may be a need for

mainstreaming the analysis of wicked problems. The appreciation of the frequency and extent of wicked problems has given rise to a typology of wickedness (Alford & Head 2017) and the classification of super-wicked problems (Lazarus 2009; Levin et al. 2012; Levin et al. 2009). Super wicked problems e.g., climate change (Cross & Congreve 2020; Grant et al. 2019; Karl et al. 2011), have their own characteristics (Peters 2017; Peters & Tarpey 2019) including time running out, no central authority to manage the problems and the actors that cause the problems solve them (Australian Public Service Commission 2012; Camillus 2008; Riedy 2013). Identification of something as wicked and super-wicked can be part of the problematisation processes and may facilitate analysis and management (Bacchi 2012; Turnbull & Hoppe 2019).

All of this has implications for the governance of wicked problems (Termeer, Dewulf & Breeman 2013; Termeer et al. 2016; Termeer et al. 2015) and different ways of thinking (Lönngren & Van Poeck 2020; Sediri et al. 2020). Conventional governance frameworks are not suited to wicked and super-wicked problems (Head 2008; Rittel & Webber 1973); they require alternative governance arrangements (Duit 2008; Roberts 2000). MLG has been associated directly and indirectly with wicked problems (de Abreu & de Andrade 2019; Head, Ross & Bellamy 2016; Irepoglu Carreras 2019; Noto & Bianchi 2015; Scharpf 1997b; Thomann, Trein & Maggetti 2019; Trein, Thomann & Maggetti 2019). MLG has the capacity to temporarily unfold wicked into tame problems to facilitate some transcription which could promote addressing specific elements of climate change, at least for some period (Kemmerzell 2019, p. 160), even if the solutions are wicked or clumsy in themselves (Forrester et al. 2019; Grint 2010; Ney & Meinel 2019; Ney & Verweij 2015; Verweij 2011).

2.10.3. Systems thinking

Systems theory looks at the world in terms of the interrelatedness and interdependence of all phenomena, and in this framework an integrated whole whose properties cannot be reduced to those of its parts is called a system (Capra 1983, p. 26). Systems thinking involves exploring complex processes through the interconnectedness and interrelationships between the constituent parts of the systems and looking at the whole (Ramage & Shipp 2020). Systems thinking is applied

to a wide range of areas including strategic planning and management (Haines 2000), climate change and mental health (Berry et al. 2018; de Nazelle et al. 2021; Wright et al. 2021), regulatory governance (Van der Heijden 2019, 2020) tourism (Stone & Nyaupane 2017) and sustainable development (Banson et al. 2015).

Notwithstanding Ison's (2010a, p. 19) reluctance (because of constraints imposed by doing so) to define systems thinking and practice and a recognition that it is difficult to do so, Arnold and Wade (2015) take a systems approach to draw out the key components of a definition and propose a definition: '*Systems thinking is a set of synergistic analytic skills used to improve the capability of identifying and understanding systems, predicting their behaviours, and devising modifications to them in order to produce desired effects. These skills work together as a system*'.

Ison continues with systems thinking arising as a particular dynamic of everyday life and is recognised by oneself or others or both as thinking systemically including understanding things within their context and the nature of their relationships (Ison 2010a). This is reflected in Luhmann's systems theory where no system is independent of its environment (Baraldi, Corsi & Esposito 2021, p. 235). Ison further understands systems thinking and practice as being a recursive dynamic commensurate with systems praxis, that is there should be no thinking without practice and no practice outside of theory.

Feedback is a critical feature of systems thinking (Arnold & Wade 2015; Meadows 2008; Van der Heijden 2020) and goes beyond the iterative review in continuous improvement present in most monitoring and evaluation processes (Waylen et al. 2019). Feedback can reinforce or counterbalance actions and thinking as a 'reciprocal flow of influence' (Haraldsson 2000; 2004). It becomes another input into the system (Van Der Steen et al. 2015). Feedback elicits a circularity within processes. Haraldsson (2000) suggests everyone is impacted on by feedback, is responsible for the consequences of the feedback and for generating solutions emerging from the feedback. The role of feedback loops illustrates systems thinking connections with cybernetics (Wiener & Von Neumann 1949) the Greek word for which means governance, to steer or govern (Ison 2016; Wiener 1948).

Systems thinking is a scientific tool and language for understanding complexity and creating consensus within multi-actor decision environments. It can help integrate

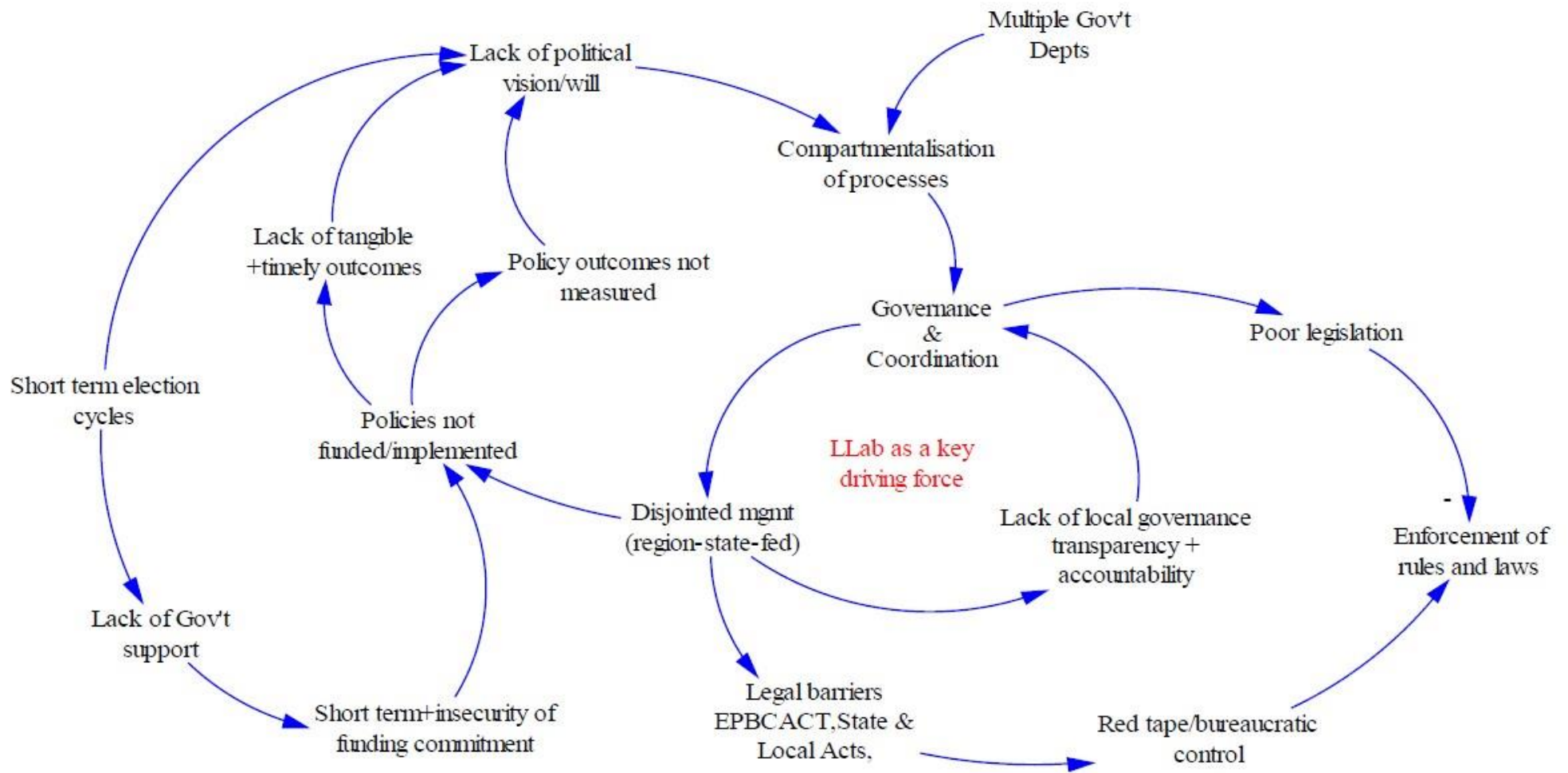
social, economic, and environmental factors and decision makers to understand the relevant implications of their decisions and trade-offs (Maani 2013, p. 8). Maani provides some tools for system thinking including causal loop diagrams (Figure 2.4).

While such tools can be useful, they can also dominate processes and take over becoming the justification, so caution is advisable. This said, Maani (2013) produces a governance and coordination Causal Loop diagram CLD (Bala, Arshad & Noh 2017; Haraldsson 2000) which provides a useful visualisation for complex relationships (Figure 2.4; Moskwa et al. 2018) and can be adapted to specific contexts (See Chapter 8).

Curtis et al (2014, p. 184) bring most of the relevant concepts together succinctly:

Recognition of complexity and uncertainty as fundamental characteristics of NRM, and corresponding developments in the theory of social-ecological systems (SES) have spawned new ways of thinking that are important influences on contemporary CBNRM, since CBNRM is fundamentally about managing people–environment relationships. Resilience thinking provides a framework to understand the processes of change in SES. The behaviour of SES is multilevel (Holling & Gunderson 2002) and emerges with limited predictability from multiple interacting influences. Communities typically show considerable agency and self-organisation when responding to challenges (Berkes & Ross 2013). SES researchers recognise that adaptation will be an inadequate response in some situations and that a transformation to a fundamentally different SES may be needed in other contexts (O'Brien 2012).

The above highlights the 'systems' component of SES. Inherently adaptive governance (Folke et al. 2005) and complex adaptive systems (Jaradat 2015) use systems thinking. Systems thinking is considered essential in addressing systemic problems like failure of governance (Ison & Straw 2020) (Van Der Steen et al. 2015; van der Steen et al. 2013). The application of systems thinking to this research facilitates a holistic, integrated praxis considered essential in the design and implementation of MLG processes. Not taking a systems thinking approach constrains the integrity of any process and reduces the extent of the outcomes.



Source: Maani 2013. p.62

Figure 2.4 Governance and Coordination causal loop diagram

2.11. Conclusion

Multilevel governance, developed in the EU and now applied globally, is building into a comprehensive if somewhat open theory. In its thirty-year history it has grown into an evolving complex set of processes. By its nature MLG is not any single approach or strategy; it is highly dependent on the spatial, political, social, and environmental context. It is also path dependent and has been applied across a range of sectors and scales.

MLG can and perhaps should be explored from a global to an individual level, though often this full hierarchy is not equally engaged in most applications. There is also the extent to which the characteristics of MLG are applied resulting in 'thick or thin', 'weak or strong' processes. MLG is dynamic and evolves in response to several factors, often the most significant of which may be the political will to follow up and follow through.

Polycentric governance is also utilised in Australia. However, it is unclear what the relationship is between PCG and MLG and this leads to vagueness and additional uncertainty. In the end it may not be important what something is called as long it is clear what is meant by the term. Exploring this relationship is a topic for further research.

Clarification of the concepts of scale and level is important; both terms have multiple meanings and there is often confusion and uncertainty around what is meant. MLG is a complex system of processes and greater clarity would facilitate broader adoption.

In Australia, the neologism MLG is not widely used (especially not in South Australia) even though there may be some justification for acknowledging that some weak application is apparent. This lack of expression matters for several reasons. Not naming it reduces accountability for the various partners, which often involves some level of government. There is also potential avoidance of lock-in into a more formalised approach than current business as usual which allows many players to continue to operate in their own ways and for their own interests – many organisations benefit from maintaining the status quo. There is also the potential that the establishment of functional MLG systems will require substantial resourcing and capacity, and this is seen (by government) as prohibitive. It seems that ignoring the costs of not developing such processes is far greater than doing them. This attitude is seen in the current

practices of the four enabling processes: meaningful community and stakeholder engagement, effective communications, empowering capacity development, and comprehensive monitoring evaluation and improvement.

MLG expresses a range of influencing approaches which add flavour to any application. As with climate change, MLG is a complex (some may say chaotic) practice that is clearly a wicked if not super-wicked problem requiring a range of wicked solutions. It also requires an adaptive approach, not least of which is an adaptive governance perspective. MLG is inherently transformative and, building on the past, forward looking.

The application of the principle of subsidiarity is critical in ensuring the delegation of authority, responsibility, and capacity (including resources) to the appropriate level within the nested hierarchy. MLG itself is not sufficient but requires several supporting processes to ensure effective application.

Chapter 3: Investigating Multilevel Governance in South Australia

3.1. Introduction

This chapter covers the approach and methods used in undertaking this research project. It covers the main methods of data collection, namely: literature review (as present in Chapter 2 above) and document analysis, interviews, participant observation and, to a lesser extent, autoethnography. Data analysis, using the qualitative software program, MAXQDA, was performed through thematic analysis. The thesis map (Fig 1.4) above provides a basic guide to the research process.

The theoretical approach used in this thesis (as discussed above) informed the methods chosen and the development of the questions used as a guide for the interviews.

Given the nature of this research, various qualitative research methods have been used to collect and analyse information. Qualitative research has several advantages (Johnson & Onwuegbuzie 2004, p. 20; Occupytheory 2014) including: the research subject can be covered in depth and detail, the data, being based on human experience, are more compelling and pick up the complexities and subtleties of the subject being responsive to changes, local situations, and stakeholders' needs, and can be used to explore dynamic processes. Johnson and Onwuegbuzie (2004) further contend that qualitative research is value-bound, and any causes and effects cannot be fully differentiated and seek understanding from the perspective of the researcher (Farghaly 2018). Quoting Guba (1990), Johnson and Onwuegbuzie (2004, p. 14) add that the 'knower and known cannot be separated because the subjective knower is the only source of reality', the researcher makes their own interpretation of the situation. The nature of governance, being different things to different people, requires the flexibility and guidance of the qualitative to draw out the range of understandings and operations relevant to specific observers for their interpretation.

The choice of methods was also informed by the assumptions made at the commencement of this research. These include that, in practice, there is limited open perspicuous consideration of governance processes in most of the organisations which are the focus of this research and that the governance processes 'flow under the surface' of day-to-day business. This is augmented by another assumption, which is that governance is articulated through standard responses relating to its operations, for example 'decisions are made by the board or elected members'. This is not to say that decisions are not made in this way, but it is only part of the story. The connection between these assumptions is that because it is not part of daily consciousness, practitioners are not familiar with the processes and therefore are protected by standard responses, which are generally accepted, and no further consideration is required.

Semi-structured interviews and participant observation were the key methods chosen for data collection. This latter method can enable deeper engagement with the various organisations to observe their operations, particularly where, how, and what decisions were made, and through this to gain a better understanding of how the organisation is actually governed. It was felt that given the current practice of governance (let alone governance praxis), the interviews would mostly draw out the standard and accepted (without meaningful consideration) responses with limited critical analysis. The political nature of climate change and the increased politicisation of the public service largely constrains speaking truth to power. Participant observation would add richness and depth to illustrate nuances not otherwise accessible.

Two principal methods of data collection were used: semi-structured interviews with key informants and participant observation of and within organisations at different levels within the nested hierarchy (see Figure 1.1). The literature was reviewed (as presented in Chapter 2) in an iterative process throughout the research and used as a frame for critiquing and developing understanding of the interpretation of the findings. This critiquing provided for some grounding of the emerging results within the context of the international discourse on multilevel governance. It also allowed for inclusion of additional emerging trends and concept migration or evolution during the analysis.

Table 3.1 summarises the research methods and indicates the primary use of data for addressing research questions

Method	Description	Data used to address Research questions
1. Literature review	Analysis of peer reviewed academic journals, academic books and other media.	Understanding of MLG and related concepts, contemporary practice globally and lessons for the future - Question 1
1.1. Documentation analysis	Analysis of non-peer reviewed material, mostly reports, organisational plans, policy documents, governance documents etc.	Appreciation of current local practice - Question 2
2. Interviews	Face to face semi-structured interviews with key personnel involved in governance of adaptation to climate change.	In-depth understanding of governance practice and management – Question 3
3. Participant observation	Engagement and observation with a range of organisations including meeting and workshops.	Understanding of decision-making processes and network functioning – Question 2, 3
4. Autoethnography	Personal reflections on experiences gained before and during the research process	Appreciation of real - world practice and options for future adaptation – Question 4

Table 3.1 Research methods and data usage

3.1.1. Ethics approval

Given human subjects were involved in the research, the University required ethics approval. The application process required information for and consent from both the individuals interviewed and also organisations, which were the subject of the participant observation. Signed consent from all interviewees and organisations was obtained, with copies being kept by the researcher, the interviewees, and the organisations for their records. Ethics approval (H2015-238) was granted in October 2015 (See Appendix 1) and complied with throughout the research.

The ethics procedure required a number of documents be prepared and supplied to relevant partners as appropriate during the research. These included a letter of introduction, a Participant Information Sheet describing the project and participants' involvement, and a consent form for both individual and organisational participants. A Complaints Form was also required. All the above were signed off by the University's ethics committee as part of their approval. Potential participants were targeted to ensure they had the relevant experience and responsibility in relation to climate change and governance. Most interviewees were thus project officers supporting RAP processes, members of RAP Steering Committees or government employees. Interviews were recorded and transcribed, and interviewees given copies of the transcripts to verify accuracy.

Data in the form of audio files, transcripts and notebooks were kept at the researcher's residence in a locked filing cabinet, where they remain. Back-up copies of all electronic data were stored on external hard drives and kept in the locked cabinet. Copies of audio files and data analysis files from the software were also stored on the University secure network. All file names were coded, and all related material was similarly named. One file naming document recorded the names associated with the codes and all data were de-identified.

3.2. Literature review and document analysis

A standard literature review was undertaken, as covered in Chapter 2. A substantial amount of additional material produced by various organisations was also reviewed. This included policy documents, commissioned research reports, plans, meeting agendas and minutes, project reports, agency communications, media (including audio and print) and other miscellaneous material. These documents are mostly in the public domain, such as government agency policy statements and plans, while others are restricted to internal organisational material but are none the less official documents (e.g., meeting minutes and reports). A summary of the range of documents reviewed is presented in Table 3.1 and a full list presented in Appendix 6.

Table 3.1 Key documents reviewed

No.	Date	Title
1	1988	The Greenhouse Effect and climatic change – planning and policy issues
2	1989	'Greenhouse '88: planning for climate change: Adelaide conference proceedings',
3	1989	Greenhouse Effect and Energy Policy in South Australia.
4	1990	Implications of climate change for South Australia,
5	1991	The Greenhouse Strategy for South Australia,
6	1991	The Greenhouse Strategy for South Australia Summary,
7	1992	Greenhouse Strategy for South Australia, Annual progress report
8	1992	Greenhouse Strategy for South Australia Annual Progress Report,
9	2000	South Australia: Reducing the Greenhouse Effect,
10	2004	'Natural Resources Management Act 2004',
11	2007	'Climate Change and Greenhouse Emissions Reduction Act 2007',
12	2007	South Australia's Strategic Plan,
13	2010	Improving Natural Resource Management in South Australia: regional integration of South Australia's environment and natural resources management delivery.
14	2012	'Prospering in a changing climate: government action plan for the climate change adaptation framework in South Australia 2012–2017'.
15	2012	'SA strengthens its climate change leadership',
16	2012	Our Place. Our Future,
17	2012	Prospering in a changing climate,
18	2015	Developing a new climate change strategy for South Australia, Adapt consultation paper,
19	2015	Developing a new climate change strategy for South Australia Carbon Neutral Adelaide consultation paper,

20	2015	Developing a new climate change strategy for South Australia Innovate consultation paper,
21	2015	Developing a new climate change strategy for South Australia Reduce consultation paper,
22	2015	Developing a new climate change strategy for South Australia, Lead consultation paper,
23	2015	Developing a new climate change strategy for South Australia. Overview consultation paper,
24	2015	Low carbon investment plan for South Australia. Strategy Paper.,
25	2015	South Australia's climate change strategy 2015 – 2050 Towards a low carbon economy,
26	2015	South Australia's low carbon economy expert panel.,
27	2016	Carbon Neutral Adelaide A shared vision for the world's first carbon neutral city,
28	2016	Carbon Neutral Adelaide Action Plan 2016–2021
29	2016	Climate Change Action South Australia,
30	2017	'The 30-year plan for greater Adelaide: 2017 update',
31	2018	Managing Our Landscapes Conversations for Change Summary of the Discussion Paper
32	2018	2018, The Nature of SA,
33	2018	Towards a resilient state. The South Australian Government's Climate Change Adaptation Action Plan
34	2018	Managing Our Landscapes, Conversations for Change. Discussion Paper,
35	2019	Directions for a Climate Smart South Australia.
36	2019	Landscape Directions, Landscape SA Bill 2019,
37	2019	Landscape directions, Landscape SA Bill 2019,???
38	2019	'Landscape South Australia Act 2019'.
39	2020	Blue Carbon Strategy for South Australia.
40	2020	Climate Change Science and Knowledge Plan for South Australia
41	2020	Climate Smart South Australia Regional Climate Partnerships,
42	2020	Managing South Australia's Landscapes Policy Overview,
43	2020	Premier's Climate Change Council 2019-20 Annual Report,
44	2020	South Australian Government Climate Change Action Plan 2021-2025,
45	2020	Managing South Australia's Landscapes.
46	2020	Managing South Australia's Landscapes, Policy overview,
47	2020	Sector Agreements,
48	2022	South Australia declares climate emergency,
49	2022	Unpacked: South Australia's climate emergency declaration,
50	N.d.	Better together, Principles of Engagement.

Document review and analysis is an accepted qualitative research method (Bowen 2009; Denzin & Lincoln 2005, p. 25; Wadsworth 2010). Mogalakwe (2006) suggests that document analysis has been used primarily as a supplementary method to surveys and interviews, and aims to challenge this approach, seeking to integrate

document analysis into research activities. Bowen (2009) likewise seeks to increase knowledge and understanding of document analysis as a qualitative research method with a view to promoting its effective use. Payne and Payne (2004, p. 60) describe document analysis as ‘the technique used to categorise, investigate, interpret and identify the limitations of physical resources, most commonly written documents whether in the private or public domain’. Corbin and Strauss (2015) go further by suggesting documents be examined and interpreted in order to solicit meaning, gain understanding and develop empirical knowledge.

Accessing documents followed two connected tracks: acquiring publicly available material directly from targeted organisations and searching via the internet, and then as part of the negotiation at the beginning of the participant observation (Patton 2002). The success in gaining access to documents was directly associated with the level of observation that could be negotiated. In some cases, the existence of material was unknown before engagement, but it was then made available on request.

Documents were reviewed, using qualitative content analysis (Bryman 2015, p. 563), from the perspective of their contributions to the research and to their influence on the governing arrangements and actions within the research context. Altheide and Schneider’s (2012, p. 26) ethnographic content analysis better describes the process undertaken as it followed ‘...*a recursive and reflexive movement between concept development-sampling-data collection-data coding-data analysis-interpretation*’. Few examples of the explicit use of MLG or PCG were cited throughout these documents. The analysis therefore focussed on what might be considered implicit use or application of MLG or PCG, e.g., the South Australian Government’s ‘Prospering in a Changing Climate framework’ (Government of South Australia 2012) includes the delegation of climate change planning to sub-state regions.

Document review and analysis were undertaken concurrently with the interviews and participant observations. This facilitated critical analysis of the documents focussing on alignment, or otherwise, with data acquired from interviews and observations. Documents were also read through the lens of implicit expression of MLG. The results of the document review are discussed throughout the rest of the thesis but mostly in the Chapter 4 case study of the RAPs.

3.3. Interviews

Semi-structured interviews (Mann 2016; Rubin & Rubin 2011) were the key method used in this research project. This method was chosen for several reasons including that, given the expected diversity of understandings of governance, a fixed set of specific questions would illicit less useful answers. Flexibility within the interview process was seen as necessary to respond to emerging concepts and perceptions and to enable greater exploration of these understandings and functions. Semi-structured interviews accommodate a wide range of interviewees who have a diverse range of positions, understandings, and responsibilities (Fontana & Frey 1994).

Semi-structured interviews were undertaken as they offered the best prospect of guiding the discussion while allowing respondents to shape the path and direction of the conversation (Hay cited Beer 2014).

Sampling of key informants was purposive (Tongco 2007) targeting key personnel involved in decision making linked to adaptation to climate change within each organisation. This is not a clearly defined group. Some members, such as project coordinators, may not be acknowledged by others as decision makers, nor do the project coordinators generally credit their role as a decision making one. That is, project coordinators do not occupy a position within the organisation that is traditionally recognised as being a decision making position; these decision making roles are usually assigned to elected members, board members or even management committee members. As such these project coordinators equally do not, generally, see their roles as decision makers and at best recognise their position as an advisory role. Targeted people were mostly NRM Board members and officers, local government councillors and officers, management committee/steering group members, executive officers and senior managers in government agencies or NGOs. As a result of this, sampling was non-probability and purposive, targeting individuals best placed to understand the governing processes with constant comparison throughout the fieldwork timeframe (Denzin & Lincoln 2000; Denzin & Lincoln 2009; Glaser & Strauss 1967, pp. 101-115). The sampling frame is therefore inadequate, being loosely defined and variable and the sampling unit was individuals mostly acting on behalf of their organisations. Between three and four informants from each organisation were targeted for interviews. Additional 'others' included consultants, researchers,

practitioners and miscellaneous. A full list of types of interviewees is presented in Appendix 3. A summary of interviewee's categories is presented below in Table 3.3.

As the focus of this research centered around adaptation to climate change, selection of types of interviewees was limited to those working in this area. This included those working in NRM, local government and state government. People from other sectors such as traditional owners, economic development, social services, industry and education were excluded to enable the research to be both more focused and manageable. Inclusion of a wider range of sectors would have broadened the discussion making it less likely to develop a strong appreciation of MLG. However, further research including these sectors could be beneficial.

Interview questions were developed and designed to solicit responses to the key research questions. Questions were developed as 'guide questions' (Patton 2002, p. 343); that is, interviews were not strictly semi-structured. The interviews were, therefore, seen more as 'guided discussions' where discussion on specific questions was conducted to draw out the fuller understanding of the specific governing processes relevant to that interviewee. It was not possible to cover the diversities of each person's and organisation's roles, so the interaction was needed to gain a fuller picture of more specific areas of their responsibility. So, in most cases, any adaptation to climate change activities they performed constituted only one component of their complete role. The range of questions was designed to cover the full extent of options and it was unlikely that all questions would be relevant to any single person. Interview questions were thus designed to cover the expected range, depth, and breadth of experiences from across all the organisations, especially given that the key organisations operate at different scales. Certain sets of questions were more relevant to some people and organisations. The questions were provided to all interviewees, along with other background material, before the interviews with sufficient time for them to read as they wished. The main interview questions are presented in Table 3.2 with a full list in Appendix 2.

Table 3.2 Questions used to guide key informant interviews

	Key interview questions
1.	What does climate change/climate change adaptation look like for you, in your country/area?
2.	What do you do within your organisation to address climate change and support climate change adaptation?
3.	What is your role in relation to decision making around climate change adaptation within your organisation?
4.	What policies, plans and strategies do you have or refer to in addressing climate change?
5.	What does governance mean to you?
6.	How does your organisation manage its climate change governance arrangements?
7.	Does your organisation adapt its governance arrangements and if so how and in response to what drivers?
8.	Who else makes climate change adaptation decisions in your organisation?
9.	How are these decisions made? - what is the mechanism for making these decisions?
10.	Who else make decisions around climate change adaptation in the region?
11.	How do they make these decisions?
12.	Do other organisations make different decisions to your organisation's decisions?
13.	Who decides who makes what decisions?
14.	Are the right organisations doing the right things and making the right decisions for their place and role?
15.	What would help organisations be more effectively coordinated?
16.	Who should do this?
17.	What would it take to increase coordination between organisations?
18.	What informs your decision making around climate change adaptation?
19.	Do you make or not make decisions based on who else might be making similar decisions?
20.	How would you describe the capacity of your organisation to change their governance arrangements in relation to climate change adaptation developments?
21.	Would a framework for enhancing coordination of decision making be of value to you and your organisation?
22.	What might such a framework look like?
23.	Who should drive/create or be responsible for it?
24.	Within the context of adaptive management and continuous improvement, how can the governance arrangements between your partners be enhanced and strengthened?
25.	Any other comments?
26.	Any questions.?

A key principle underpinning the core subject, i.e., the content and the processes of the research, namely, the governance arrangements, is that of adaptiveness. This is inherently seen as change, that is adaptation is about change especially in response to emerging and evolving understanding and knowledge. Hence, operations and implementation need to function in an evolving and emerging paradigm and there is a need to shift from actions resulting from assessments made within steady states to

those conceived in dynamic and changing contexts. This is seen as especially relevant when dealing with the uncertainty surround climate change (Folke et al. 2005; Ison, Blackmore & Iaquinto 2013).

This has ripple effects into the fieldwork and the analysis. So, the guide questions used during interviews did not so much evolve but rather the discussions on the questions were developed through the fieldwork. So, there is an evolving understanding that moves closer to a more refined appreciation of the collective position, i.e., actions based on the shared understanding and interpreted through the individual's interpretation of the situation.

Most interviewees were generally targeted through assessment against several specific requirements or criteria. These included holding a position which had some involvement and/or responsibility for addressing some part of their organisation's adaptation to climate change activities either directly or indirectly and/or being involved in the decision-making processes of the organisation or the climate change project. In one case, a nested hierarchy across three levels within an organisation was followed where three interviewees were part of a direct line of reporting. Other cases also picked up limited parts of equivalent direct reporting lines.

While in most cases key positions within any organisation were targeted for interviewing, organisations were also able to nominate staff members for interviews. One organisation chose two officers for interviewing, though the reason for these nominations was not immediately apparent as their roles were not directly involved in adaptation to climate change. Other staff within this organisation participated as targeted interviewees.

Six (P3 RAP, P6 PCCC, P8 Government, P33 Government, P35 RAP, P40 LG RAP) of the selected interviewees had recently changed their position or left the organisation at the time they were interviewed. That is, within the research period, they had recently held key positions related mostly to the Regional Adaptation Planning processes. However, most of these individuals were still working in the climate change or related sectors and it was felt they would still have valuable insights to contribute to the research. It was also anticipated that having left the organisation they may have felt less bound to subscribe to the organisation's positions when responding to the questions, while still respecting the integrity of any confidentiality. This may manifest

as inconsistency with organisational attitudes, positions, and policies. Indeed, this was confirmed in several interviews where interviewees freely, either voiced opinions clearly not formally aligned with their (previous) organisation's positions or their unwillingness to comment citing confidentiality. At their request, two of these interviewees were interviewed following approval from their original organisation. Only three interviewees requested the tape recorders be switched off.

Face-to-face interviews were most commonly used. Only two participants opted for phone interviews, as one was interstate and the other had limited time. It is acknowledged that phone interviews may influence the quality of the interview (Irvine, Drew & Sainsbury 2013); in these cases, both interviewees were known to the researcher, and this facilitated more open discussions. Despite this, several off the record points were made by both interviewees.

In accordance with the ethics approval, interviewees were provided with all relevant information prior to the interview and were requested to sign the consent forms. All interviewees were reminded of their right to withdraw from the project at any time and that their information would be de-identified and anonymised. If specific quotes, which could possibly identify the participant, were to be used, the interviewee would be approached to provide additional approval for use of any quotes. In addition, the audio-recorders could be switched off if the interviewee wanted to say something 'off the record'. This did occur on a small number of occasions. All participants were offered access to relevant parts of the draft thesis, when appropriate.

Interviews were recorded with two digital tape recorders (one as back up), each file being coded and stored on the University computer system. Backup copies were also stored on external hard drives and secured at the researcher's residence. Most interviews occupied the anticipated hour, but a number went on for up to two hours.

Transcription of interviews commenced with direct typing from listening to interviews with earphones. Given poor typing skills this proved a very time-consuming exercise. Hence, alternative methods were explored and resulted in the use of voice recognition software (Dragon Naturally Speaking Professional Version 15). In this case, interview recordings were replayed, at a reduced speed, and every word repeated into the microphone linked to the software. The digital text appeared almost instantaneously in a MS Word compatible file. Repeated replays allowed for refinement of text. Final

word processing completed the verbatim transcript. This process allowed for simultaneous formatting, for example, identifying, in the text, who was talking at a specific time. While this method reduced the transcription time by approximately 50%, overall, it was still time consuming. Commercial transcribers were used for some of the transcription to speed up the process.

Interviews were grouped according to broad categories which best described the overall membership of that group (Table 3.3). These categories are not unique, in that some interviewees fitted into two or more groups, for example one community interviewee was also a member of the local council. While discussions with these participants cover all their roles, they were only counted as one interview. Their allocation here is based primarily on the key role they assumed for the interview. It is also important to recognise that interviewees within one category occupied different positions within that category; for example, within local government some interviewees were project officers, others were managers and others elected members. A full list of different types of interviewees is presented in Appendix 3.

Table 3.3 Interviewee categories with number of interviewees

Category	Number of interviewees
Community Group	7
Local Government	7
Regional Adaptation Plan	2
Researchers (national)	3
Consultants	3
Regional NRM Board	9
State Government	6
Other	5
TOTAL	42

An even distribution of interviewees across the four levels of organisations was sought in an attempt to obtain a balance of perspectives from each level. In the end, across the four levels, the final number of interviews was: community (7), local (5), regional

(11), state (10) and other (4). A further three were classified as operating at the national level. The total number of interviewees was forty-two and determined by the limited number of potential interviewees fitting the positions where they would have the relevant knowledge and experience required to respond to the research questions.

Transcripts were returned to interviewees for clarification of words and points, and accuracy of the transcription (Mero-Jaffe 2011). Interviewees were directed to correct but not otherwise change the meaning of what they said in the interview. At this point they were given the opportunity to reflect on their comments and make any additional comments if they wished.

3.4. Participant observation

Participant observation is a qualitative research method most used in anthropology to gain a deeper more comprehensive understanding of how the community operates. In this case the community comprises different organisations (DeWalt & DeWalt 2011; Jorgensen 1989; Spradley 1980). Participant observation is, from a positivistic point of view, 'a special form of observation, a unique method of collecting data, but not otherwise useful for the ultimate scientific goal of explanatory theorizing' (Jorgensen 1989, p. 7). From a humanistic perspective, Jorgensen argues (pg 8-9), participant observation, a method for human studies, has a diversity of characteristics: it is artful, requires a wide variety of skills and making judgements, being creative and its logic is nonlinear. Jorgensen identifies (pg 13- 23) seven features of participant observation:

1. a special interest in human interaction as seen from the inside
2. located in the everyday life situation
3. a form of theory and theorising stressing interpretation and understanding
4. a logic and process of inquiry that is open-ended, flexible, and opportunistic, requiring constant redefinition of the problem
5. an in-depth, qualitative case study approach
6. the performance of a participant role that involves building and maintaining relationships
7. the use of direct observation.

Dewalt and Dewalt (2011, p. 1) define participant observation as a 'method in which a researcher takes part in the daily activities, rituals, interaction, and events of a group as one of the means of learning the explicit and tacit aspects of their routines and their culture'. They see it as a data collection and analysis tool (pg 10). In summary they Dewalt and Dewalt identify seven elements of participant observation (p5):

1. living in the context
2. learning and using the local language
3. actively participating in a wide range of daily activities
4. using everyday conversations as an interview technique
5. informally observing during leisure activities
6. recording observation in field notes
7. using both tacit and explicit information.

Participant observation is thus seen as consistent with the approach taken with the interviews, i.e., semi-structured, guided discussions by being open-ended, flexible, responsive, and reflexive; the two methods combining well to build a better understanding of the phenomenon of governance. Participant observation has been used in climate change research by (Berkes & Jolly 2002; Pearce et al. 2009; Wolf & Moser 2011).

Spradley (1980, p. 58) identifies four 'types of participation' varying in degree of involvement; from 'passive participation' where the researcher '...is present at the scene of action but does not participate or interact with other people to any great extent.' (p. 59), to 'moderate participation...when the ethnographer seeks to maintain a balance between being an insider and an outsider, between participation and observation.', (p. 60) to 'active participation where the '...active participant seeks to *do* what other people are doing... to more fully learn the cultural rules for behaviour.', to 'complete participation when the researchers 'study a situation in which they are already ordinary participants' (p. 61). Participation which fell into the first two types was more common with some cases where the latter two were more appropriate. Organisations were targeted so that all four types of participation were covered. For example, the GWLAP was chosen because of long term participation in that organisation prior to the research.

The use of participant observation in this research targeted who was making what decisions and how these decisions were being made, which included the basis for the decisions, what information decision makers relied on and where they obtained that information.

'Decision making theory can be informed by first discovering the cultural rules for decision making in a particular organisation' (Spradley 1980, p. 15). In this case MLG is seen by the researcher as the guiding/informing 'cultural rules' which steer the governing processes between and within each participating organisation within the hierarchy. The organisations' role as a result of negotiated authority to take on the responsibility for making certain decisions and the application of the principle of subsidiarity are part of the cultural rules within any MLG process.

All four key organisations (Goolwa to Wellington Local Action Planning Association (GWLAP), Alexandrina Council (AC), Resilient Hills and Coasts Regional Adaptation Planning steering committee (RH&C), and the Department of Environment, Water and Natural Resources (DEWNR)) were presented with an opportunity to host the researcher in some way. This hosting was seen by the researcher and on some occasions, members of the governing body, as an opportunity for the organisations to provide a space for the researcher to become part of the organisation, while retaining an external perspective, to gain a better understanding of how the organisation governed its adaptation to climate change. This was based on the intent, at least, that the organisation could potentially benefit from having the researcher within their organisation. All four organisations approached supported the approach to some extent. Discussions with AC occurred over an extended period of time and in the end were not sufficiently concluded to enable any observation to occur during the field work period. AC, as the host of the RH&C RAP, had a disproportionate influence on the process and observation of this process provided for some compensation for the lack of more direct observations. Negotiations differed in all cases, and this influenced how the participant observation played out over the fieldwork and informed where and how the observation occurred. Negotiations with each organisation required several common steps, including identifying with whom to discuss the options and parameters of participant observation, understanding who needed to approve the participant observation and the process for gaining this approval and what the organisation may want from the process. Negotiations included the researcher's offer of undertaking a

small project or activity, pro bono, over a 12-month period. There were also varying degrees of participation across the organisations.

The range of participant observation arrangements negotiated, discussed below, presents a spectrum from a fuller expression (complete participation) of the method to no participation at all. This spectrum provides the full range of degrees of involvement and, therefore, an opportunity to compare their various strengths and weaknesses.

Given the use of several methods to source and analyse information, this participant observation spectrum of arrangements did not compromise the data, rather it presented a greater diversity of sources and therefore opportunities to explore the value of the different approaches and options for working with the different levels. Organisations further up the hierarchy level tended to be less open to hosting the researcher, an indication that additional effort may be needed in negotiating such options.

Therefore, based on this method, it was not possible to make direct comparisons of governance arrangements, but it did provide some possible insights into potential relationships between the organisations' culture, the openness of their governance arrangements and their willingness to engage with the research in this capacity. This may also have some potential implications for their realisation of some elements of multilevel governance in a more open way. This is perhaps more interesting given the least interested organisations were government agencies. Further discussion of this occurs in Chapter 8.

In organisation A (DEWNR) the participant observation was essentially restricted to attending and observing a single meeting, which was not open to the public, but which included participants from a range of other organisations. This meeting brought together representatives from all twelve Regional Adaptation Planning processes, respective DEWNR staff (i.e., DEWNR representatives, including NRM Board staff, to each RAP process) and members of the PCCC. Held near the end of the RAP planning process across the state, the meeting was designed to draw together lessons learnt, from all the regions, about the RAP process and to flag the next steps. This provided an opportunity to explore the relationship between the collective RAP organisations and DEWNR as a whole, including some indication of how the state/DEWNR was thinking about the process of synthesis. That is, how the agency was going to draw

out the state-wide common elements from the twelve diverse plans and bring them together into the 'state response'. Active participation at this meeting was restricted to conversations with individuals during coffee breaks.

Throughout the research period (2015-2017) several other independent public opportunities arose which were not organised participant observation events, but they did provide opportunities to interact with a wider group of people locally, nationally, and internationally. These included conferences (ESG Canberra (2015), Lund (2017), Beijing (2016), NCCARF Melbourne (2018), NCCARF Adelaide (2017)) workshops and public consultation meetings.

For example, in early 2016, I also attended some public meetings as part of the State's public consultation process during the development of the SA Climate Change Strategy. This was useful as it presented an opportunity to gain some insights into Government directions and processes of engagement.

Organisation B (RH&C) allowed attendance at regular meetings, associated workshops and presentations in addition to some email communications. By the time the participant observation was finally negotiated, some publicly accessible events had already occurred. Attendance was limited to observation only.

Organisation C (GWLAP) allowed continued participation as a member of the executive of its governing body. This included full access to current and past material, which was mostly acquired during previous periods since 1999 and before the commencement of the research, where I was involved as a member of the governing board. This included access to internal reports, minutes of meetings and finances. In this case I had opportunities to contribute to debates and decision making. Care was taken not to directly influence any decisions which may have been construed as leading or directing decisions specifically linked to adaptation to climate change. Nevertheless, contributions were made on topics that related to the research.

A form of participant observation with a fourth organisation (Natural Resources South Australian Murray Darling Basin (NR SAMDB)) occurred (for example PO 5, 8, 9, 10, 17, see Appendix 5), though this was based on observing publicly accessible meetings and events. In this case formal permission was not needed because the meetings were open to the public and anybody could attend, though the organisation was fully

informed of my purpose in attending these meetings and of my presence at the meetings. As part of ensuring awareness of the research, a presentation on the research was made to the organisation's governing body. It should be noted that these 'Regional NRM Boards' are essentially part of the DEWNR but have Ministerially appointed Board members. The Board has a service agreement with DEWNR to deliver the NRM Board's Regional (NRM) Plan. The 'Board', essentially now comprising only the Board members, no longer has any staff of its own as these are employed by DEWNR to deliver the Plan outcomes. This is a relatively recent change to the Boards, which, prior to their 'integration' were accepted by the broader community, and the Boards themselves, as being community-based organisations. The integration process merged the Department of Environment and Natural Resources (DENR) with the administration of the NRM Boards to form the new Department of Environment Water and Natural Resource (DEWNR) (Government of South Australia 2010). The staff of each regional NRM Board subsequently became DEWNR staff and the regions were rebranded as 'Natural Resources ...' with the region name at the end. Several interviewees were and are part of NR SAMDB.

Notes were taken at all meetings and events, treated as data, and used in the coding and analysis. Notes made generally targeted the decision-making processes and related topics.

While not specifically part of the participant observation, attendance at several forums and conferences, both locally and internationally, provided valuable opportunities to discuss several issues with international experts in this field and gain useful insights into the research. Of particular value were attendance at the Earth Systems Governance conference in Canberra (2015) and Lund (2017) and the 33rd International Geographical Congress (2016) in Beijing. See Appendix 5.

3.5. Autoethnography

Autoethnography was also used in this study as it provides deeper insight into the organisation practice and personal behaviours (Ellis, Adams & Bochner 2011; Ellis & Bochner 2000). The application of this method recognises that personal experience prior to undertaking the research plays a significant role in interpreting and analysing

the literature and the empirical evidence. I draw on over twenty years of practical work in community based and regional NRM. Knowledge incorporated into this research includes the diversity of approaches and strategies used across Australia, the legislation, institutional arrangements and local to national programmes, and personnel who circulated around the sector. Instances of relevance are presented in green text boxes throughout the rest of the thesis.

Several codes denoting types of evidence are used throughout the results chapters. These include:

- (P# Po# abbreviation) e.g., (P12 Po1 NRM) denoting Interviewee 12, position of quote in transcript and sector interviewee belongs to. Mostly used after quotes from interviews
- (PO# Organisation) Participant observation activity, e.g., (PO8 Government) participant observation active 8 with state government. See Appendix 5 for list of PO activities.

3.6. Triangulation

As discussed above, three sources of information have been used to increase the credibility of the findings. Triangulation 'seeks convergence and corroboration through the use of different data sources and methods' (Bowen 2009, p. 28). Patton (2002, p. 555) identifies four types of triangulation: methods triangulation, triangulation of sources, analyst triangulation, and theory/perspective triangulation. The first, second and fourth of these are used, to varying degrees, throughout the thesis. In addition to the use of the different methods, each method has been linked, reflexively and iteratively, so as to feed into and be informed by the others. This supports verification, reduces bias of the findings, and supports assessment of the relevance and importance, or otherwise, of some information. For example, one interviewee (Interviewee P12) presented a strong preference for a certain perspective on governance, but this was not substantiated by any other sources of evidence. While utilising multiple sources of evidence is more resource intensive (Yin 2009, p. 117), it allowed for the greater in-depth exploration of the topic, deemed necessary to solicit

a more generalised understanding beyond individual or single organisations' governing processes.

3.7. Organisations involved

Figure 1.1 above presents a generic hierarchy of organisations involved, in one way or another, in adaptation to climate change in South Australia. There are many pathways through the hierarchy, each incorporating its own unique set of relationships and collaborations based on the specific circumstance and context of all participating partners. One organisation working on one level in the hierarchy can interact with different organisations in different levels in different ways. Each pathway will tell a different story, but based on the overarching context, for example, operating within the South Australian context, their narratives will either converge around the themes or be variations of the themes.

The pathway chosen for this research is illustrated in Figure 1.1. It influences the methods in terms of who was initially approached for either interviews or participant observation negotiations. The chosen pathway is quite direct and sound, meaning that some clear relationships relating to several issues or actions already exist and were considered to be operating reasonably well. That is, the organisations are currently collaborating, in some form, with the other organisations along the path. The nature of these collaborations varies in strength and depth and is more opportunistic than determined.

This vertical pathway reinforces the focus on the vertical hierarchical nature of this project. It is acknowledged, however, that within the context of multilevel governance, horizontal connections are also considered important, but these are only partially included in this project because of the emphasis on 'multilevel' governance as opposed to, for example, decentralisation or polycentric governance. It is also important to recall that the hierarchy chosen here is neither discrete nor uniquely defined and is also time dependent on several accounts, including evolving policies, planning processes and stages, organisational culture and personnel involved in each organisation. There are also overlaps and gaps in the pathway, and the whole hierarchy is fluid and dynamic. This research therefore represents a snapshot of the

period from 2007 to 2017 with a focus on 2012 -2017. It should also be noted that there can be a relatively high turnover of officers, for various reasons, and this impacts on interviews and the participant observation.

There were some perceived gaps in the governing process so other organisations were included in the research to cover these gaps. They are specifically focussed on the lack of implementation of the Regional Adaptation Plans (RAP), that is the RAP processes studied during the period of field work 2015-2017 focused almost entirely on the planning component manifest by the development of the Plan itself. For example, until halfway through the fieldwork it was not clear that there would be any implementation of the Resilient Hills and Coasts Regional Adaptation Plan, so several officers from a completed Regional Adaptation Plan (Resilient South) that had already taken a few steps into implementation were included in the interviews.

The use of case studies is an accepted qualitative research method (Creswell 2007; Simons 2014; Yin 2009). Yin (2018, p. 15) defines a case study as '*an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.*' This makes it a valuable approach to understanding how governance works in practice in the RAP planning process within the context of normal business.

3.8. Analysis

3.8.1. Thematic analysis

Following Braun and Clarke (2006) thematic analysis is used as the principal analysis method given it is seen as a method in its own right and can be applied across a range of theoretical and epistemological approaches (p.78). This provides greater flexibility in its application. The research used an adapted process based on that of Braun and Clarke (2006); this adaptation included the building of the themes through analysis i.e., consolidation of early, more obvious themes and creating more subtle them that emerged through the analysis. This was supported by the iterative nature of thematic analysis (Braun, Clarke & Terry 2014).

The analysis was undertaken through the theoretical framework of MLG, and this informed the themes selected and the interpretation and assigning of the data to the themes.

3.8.2. Coding

Coding was performed using MAXQDA Analytics Pro 18 based on assessment of what was seen to be making some comment and/or contribution in responding to the research questions. Any themes identified that commented on points made in the literature were also coded.

Initial codes were identified through exploration of the application and understanding of MLG within the research domain. Codes were refined and added to during the coding process. The main codes are presented in Table 3.4 below with a full list presented in Appendix 4.

Table 3.4 Main codes generated in MAXQDA

Primary level	Secondary Level	Tertiary Level
1. Adaptation Governance RAP		
2. Adaptation	2.1 Adaptation pathways	
3. Engagement	3.1. Concept Climate Change Adaptation	
	3.2. Networks	
	3.3. Partnerships	
	3.4. Awareness	
4. Governance	4.1. Process	
	4.2. Authority	
	4.3. Adapt govnn frame	
	4.4. MLG	
	4.5. Decision making	
5. Plans and Strategies	5.1. Plan implementation	
	5.2. Uncertainty	
	5.3. Legislation	
	5.4. Policy and implementation	
	5.5. State Plans	
	5.6. RAPs	
6. Communication		
7. Resources		
8. Coordination & integration		
9. Institutional arrangements	9.1. Informal groups	
	9.2. Power	9.2.1. Subsidiarity
		9.2.2. Politics
	9.3. Regions	
	9.4. Committees	
10. Roles	10.1. Organisations	10.1.1 Government
		10.1.2 Community
		10.1.3 Admin
		10.1.4 PCCC role
	10.2. Individuals	10.2.1 Shifting staff
		10.2.2 Representation
		10.2.3 Senior influencers
		10.2.4 Consultants
		10.2.5 Project Officers
11 Climate Change impacts		
12 Miscellaneous		

3.8.3. Analysis and interpretation

Coded segments were reviewed with respect to what they could mean in relation to the codes and how they may contribute to developing an understanding of what factors contributed to governance of adaptation to climate change and how this might support developing a response to the research questions. For example, a segment of text from a transcript that says something about adaptive governance would be integrated to draw out some insight into what was understood by adaptive governance or how it might operate. This was viewed through the lens of MLG and the question of how this might inform its interpretation and how MLG was being applied in the region. These segments, presented as quotes from interviews and text boxes highlighting personal experiences, are explored for their meaning.

The interpretation of these results was done through a lens of MLG and the research questions and substantiated in the results chapters (4 to 7) with verbatim quotes. These were then used in the development of recommendations for future actions in Chapter 8.

The analytical approach taken focuses on three main evaluative concepts: governance, process and institutions as initially these were considered the priority concepts in understanding the application of MLG. Other concepts such as accountability (Bache et al. 2015; Harlow & Rawlings 2007), transparency (Papadopoulos 2010), legitimacy (who had a mandate to lead?) (Suškevičs 2012) and power (Alcantara & Morden 2019) were less visible at the beginning of this research. In the final analysis, albeit still below the surface in most expressions, power emerges as the primary driving force behind what gets done by whom and who make what decisions. It was also necessary to continuously fine-tune the focus of the research to make it manageable.

3.9. Conclusion

This chapter has presented the research methods used, including key informant interview, participant observation, a case study, autoethnography and the data analysis. This was supported by extensive document and literature review.

Triangulation was used to provide additional rigour to the data. The thematic analysis of the data generated a refined appreciation of contemporary practice that is built upon the opinions of the research participants. This understanding is presented in the following four chapters and includes extensive quotes to bring the voices of the participants to the fore.

Chapter 4: Regional Adaptation Planning: A case study of planning to address adaptation to climate change

4.1. Introduction to results chapters

These next four chapters (Chapter 4 to Chapter 7) (see thesis map Figure 1.4.) presents the results of the fieldwork; data collection was through interviews, participant observation and document reviews. These are supported by examples drawn from autoethnography experiences (green text boxes).

Chapter 4 presents a case study of Regional Adaptation Planning (RAP), the central activity supported by a range of organisations during the research period. In some ways the RAP process can be considered an example of multilevel governance, though there is limited supporting evidence and documentation. This case study therefore draws out potential elements of MLG as they may relate to RAP processes.

The subsequent three chapters (Chapters 5, 6 and 7) present the main results grouped into three areas: governance, enabling processes and institutional arrangements. Though separated out for convenience, the chapters are all interconnected and are best read this way.

Material presented aims to provide sufficient evidence to substantiate claims and to gain a realistic picture of the context and the activities. The material presented represents a 'snapshot' of the time of the research. Chapter 8 covers the analysis of the results as they pertain to addressing the research questions.

4.1.1. Introduction

This chapter presents a case study of Regional (Climate Change) Adaptation Planning (RAP); a policy developed by the South Australian Government under the Climate Change Adaptation Framework (South Australian Government 2012) (hereafter the

Framework). This exploration proceeds through the lens of MLG, i.e., if and to what extent can the development and implementation of RAPs be interpreted as an example of MLG, given MLG language and theory are not explicit in the Regional Adaptation Planning processes.

This case study draws mostly on two (of twelve) RAP processes: the South Australian Murray Darling Basin (SAMDB) RAP and the Resilient Hills and Coasts (RH&C) RAP. With the SAMDB I was working in the region and was a member of the Steering Committee. The RH&C RAP process had just started at the beginning of my research, and I received approval to observe Steering Committee meetings, though not encouraged to comment during the meetings. I had access to minutes, agendas, and other documents and was able to talk with Steering Committee members outside meeting times.

I interviewed officers of a third RAP (Resilient South) which was into the implementation stage. This enabled exploration of possible lessons for the two RAPs analysed. The foundation thinking and policy context are discussed. This is followed by a generic description of the planning process. RAP implementation and future directions close this chapter. In this context 'planning' refers to the processes within the project cycle i.e., plan – act - monitor - review as opposed to development planning processes.

4.2. Policy context

The delegation of developing and implementing various plans to regional-level institutions is standard practice across South Australia. This has traditionally occurred across several sectors from land development planning (South Australian Government 2017) to education, health (Fuller, Bentley & Shotton 2001; Government of South Australia 2021) and more relevant here, natural resource management. This regionalisation, discussed in Chapter 2, is also supported, and perpetuated by the federal Australian Government through the development in 2003 (Senate 2006) of the fifty-six Regional NRM Boards across the country.

4.2.1. South Australian Government

The current policy context has grown out of preceding initiatives over the past 35 years. This path dependency guides and constrains contemporary policy development. Early climate change documents, for example, make general reference to the importance of leadership and innovation, topics developed recently into major themes in addressing climate change (see e.g. Government of South Australia 2015f).

While the term MLG is seldom used explicitly in SA, elements of MLG could be implicit in several documents - the Climate Change Act 2007 (Government of South Australia 2007) illustrates this. There are several references which might be construed as some suggestion of MLG features, including '*consistency with national and international schemes*' (p 3), '*facilitate business and community consultation*' (p 3), and recognition of '*bodies and persons*' (p 3), implying acknowledgement of different levels having different interests and therefore benefiting from different roles (South Australian Government 2007b). While minimalist, these could be cited as evidence of MLG. They also potentially suggest some reluctance, illustrated by the absence of explicit reference to the use of MLG. The reasons for not using MLG are unclear but may express concerns around accountability, especially in relation to delegation of authority (power) and resources.

In attempting to interpret policies and actions through the MLG lens it is relevant to explore what roles organisations assume within the hierarchy. Table 4.1 demonstrates South Australian Government roles which could be considered to have some relevance to a multilevel governance system. In addition, government's role includes:

1. setting policy (including legislation and regulations)
2. providing leadership – promoting the SA as a centre for innovation (Schneider 2006, p. 8)
3. managing information
4. monitoring
5. auditing and review
6. providing seed funding
7. supporting direct research.

Table 4.1 South Australian Government roles

	Government Roles in a MLG approach	Reference
1	'...strong leads in policy formulation and coordination, research, information provision and community awareness'	Government of South Australia 1989, p. v
2	planning, management, information services, subsidies and engaging with national and international bodies	South Australian Government 1989
3	an 'active interest' in national and international initiatives	South Australia Climate Change Committee 1990, p. v; South Australian Government 1989, p. 16
4	recognising ' <i>...the greenhouse effect. it's essentially a people problem, that can only be addressed by society at large.</i> '	Government of South Australia 1989, p. v
5	establishing an Interdepartmental Climate Change Committee to prepare a strategy ' <i>to develop liaison procedures with non-government organisations and interest in regard to climate change.</i> '	South Australia Climate Change Committee 1990
6	using the first IPCC Working Group Scientific Assessment of Climate Change, to inform the 'implications' report by the Climate Change Committee.	IPCC 1990
7	the Climate Change Committee identifies the need to ' <i>co-ordinate its response with those being developed nationally and internationally to ensure their effectiveness and relevance</i> ' highlighting ' <i>the importance of the principles of equity and social justice as policy imperatives, and 'full and frank consultation with the public and comprehensive community education will need to be undertaken.</i> '	South Australia Climate Change Committee 1991a, p. 35
8	The Greenhouse Strategy and summary identifies a role for local government. ' <i>The strength and value of community action should not be underestimated</i> '. Further, ' <i>the goal of stabilising the world's climate will require commitment at all levels and over a long period. Success is possible.</i> ' The Strategy suggests a ' <i>central point for policy advice, program delivery and coordination</i> ' to be located within the Department of Premier and Cabinet and for the continuation of the Climate Change Committee. The SA Climate Change Committee is in part the forerunner of the Premier's Climate Change Council.	South Australia Climate Change Committee 1991a; South Australia Climate Change Committee 1991b
9	Other foundational documents by Crooks (1987) and Davies (1994), supported future thinking and action around climate change impacts.	Crooks 1987; Davies 1994

Figure 4.1 illustrates the key policy documents including those specifically relevant to RAPs prepared by the South Australian Government. A policy gap exists between the mid-1990s to early 2000s during a state Liberal Government.

This period has relevance to South Australia. By December 2002, the Third IPCC Assessment was nearly two years old and significant work had been done across Australia, represented by shifts in language, concepts, and priorities. For example, there was greater certainty that climate change was occurring, and human activities were major contributors. In 2002 Premier Mike Rann (Labor) was elected and invited Stephen Schneider to be the Thinker in Residence. *'The challenge is to bring people along - creating the alliances necessary to bring the sustainability and climate change agendas into force'* (Schneider 2006, p. 5).

Premier Mike Rann was appointed the first Climate Change Minister in Australia (Conservation Council of South Australia 2009; Schneider 2006) and in 2006 passed the first legislation in Australia aimed at cutting greenhouse gas emissions (Department of Environment Water and Natural Resources 2017; Government of South Australia 2007). He also became co-chair of the International Climate Group's States and Regions Alliance.

Two reports informed SA policy development: McInnes et al. (2002) and Suppiah et al. (2006). The latter recommended greater collective work on communications and reinforced the demand for tools for decision making under uncertainty (p. 57; see Figure 4.1). Schneider (2006, p. 15) recognised the importance of *'acting in the face of uncertainty'* and marked a new approach which gave rise to the RAP policy. Schneider considers *'... good governance ... a dynamic balance across pluralistic values'* sitting in the centre of a triangle with sustainability, equity and return on investment at the apices. Such positions provide evidence for placing the economy at the centre of government policy.

The Greenhouse Act commits State Government to *'work with business and the community to develop and implement strategies to reduce greenhouse emissions and adapt to climate change'* (Department of Environment Water and Natural Resources 2017, p. 1). In 2007 the State Government released *Tackling Climate Change 2007-2020* (Department of the Premier and Cabinet 2007), which aimed to provide State-level leadership, recognising a coordinated approach is required and contingent upon

partnerships (p. 13). This second State Greenhouse Strategy consolidates three 'avenues' (p. i): 'reducing', 'adapting' and 'innovating'. *Tackling Climate Change* further develops SA's international and national roles, the need for coordination between recognised stakeholders, and takes the position that everybody needs to be involved (p. 8). While they seek to 'encourage' and 'work with' other stakeholders, these policies are often weak on how this might be achieved in practice. *Tackling Climate Change* strengthens the links with the State Strategic Plan and the Government's Energy Efficiency Action Plan.

These policies generate concerns about legitimacy through language use and generalisations through not being clear about planned actions and 'government action'. The Government takes responsibility for a fraction of the actions, expecting non-government actors in the state to spontaneously self-organise and undertake the rest. This is analogous with regional NRM Plans being 'a plan for the region' but the NRM Board only writing business plans for actions for which it has resources. In practice and despite consultation, the community has not fully agreed and does not self-organise because there are no clear comprehensive mechanisms and platforms for supporting the actions. Is this approach just political spin that we need to learn to accommodate or is this another example of agnotology (Proctor 2008)?

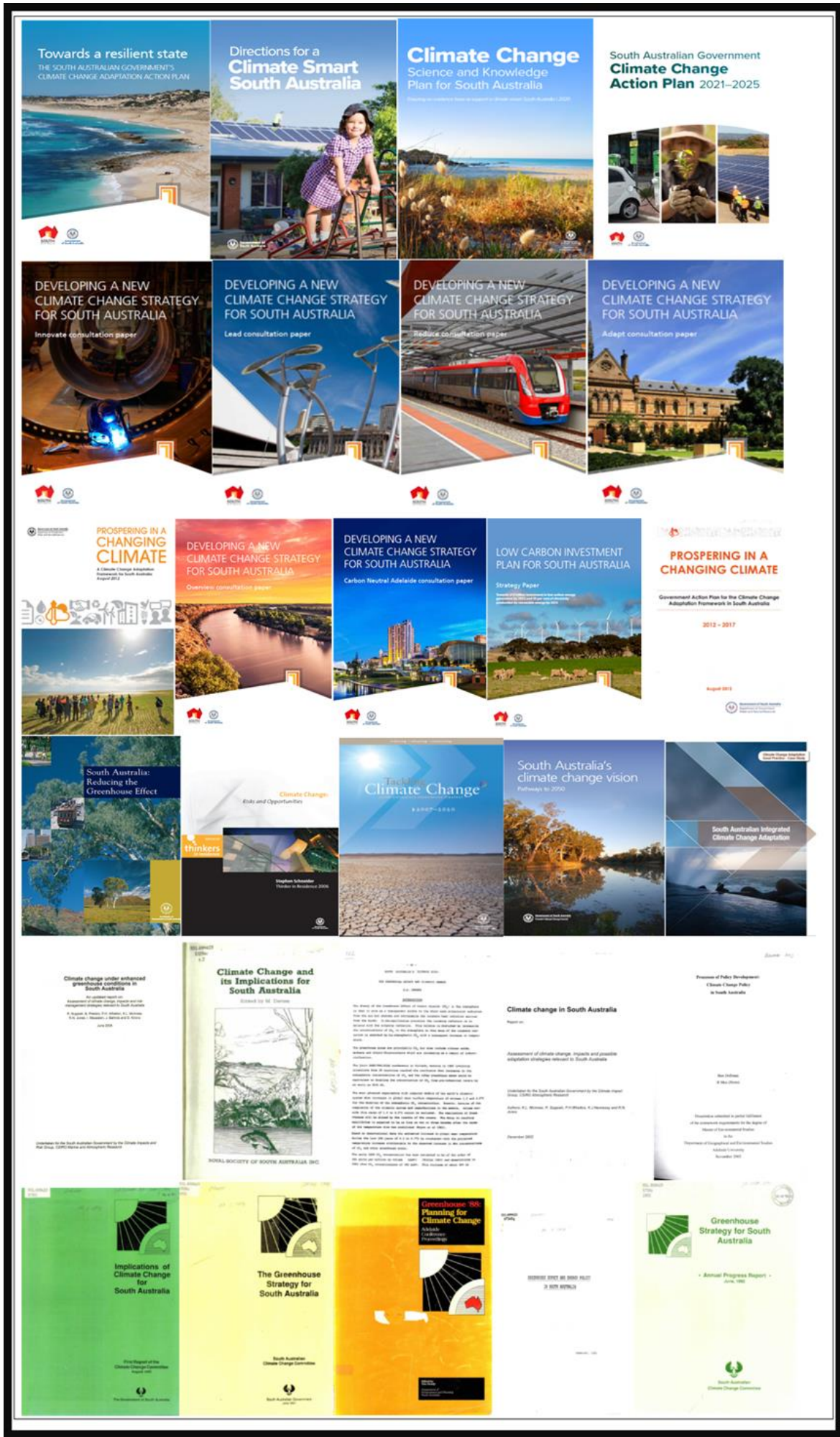


Figure 4.1 Document Cover Collage

Regionalisation, a policy extended by Government, specifically within NRM, has been discussed in Chapter 2. Discussions on regionalisation here are developed through the lens of the RAPs.

Regional Adaptation Planning (RAP) was developed mostly through *Prospering in a Changing Climate. A Climate Change Adaptation Framework for South Australia* (the Framework) (South Australian Government 2012). The Framework lays out a basic process, using the local government guidelines (Balston 2012; LGASA nd1) for the development of RAPs. The RAP process is based on adaptive capacity, recognising ‘*Effective engagement with the community in the region is critical to the success*’ (South Australian Government 2012, pp. 28 -29). Regional Steering Committees are the key drivers for local community engagement, with the State Government responsible for broad awareness raising. This allocation of roles implicitly highlights the needs for coordination and integration of activities.

The Framework provides some key foundations for RAPs to deliver significant outcomes. It tries to balance direction with prescription, recognising each region will be unique in how it develops their plan and what they produce. These include:

- ‘*Better integration of ... flexible decision-making processes will improve our adaptive capacity.*’ p.9
- ‘*Need to do things differently and work together in new ways and form partnerships across jurisdictional boundaries and between different groups of stakeholders...*’ p.9
- ‘*It is essential to be explicit about the roles and responsibilities of individuals, communities, and institutions*’ p.9.
- ‘*Adaptation ... needs to be integrated into national, state, regional, sectoral, and local planning, and operational processes*’ p.10.

The State Government provided minimal resources and support to encourage participation and essentially left the regions to implement the policy. Based on past experience (P8 Government) the State Government had confidence that the regions

would pick up the policy because *'it's a significant initiative that they don't want to be excluded from.'* (P12 Po1 NRM).

Related policy positions (see Table 3.1 above and Appendix 6) have been developed, though they are not directly related to RAPs. These include *Carbon Neutral Adelaide* (Government of South Australia 2015b, 2016a, 2016b), *South Australia low carbon economy* (Government of South Australia 2015g, 2015h), and *Water sensitive urban design* (Government of South Australia 2013b, 2014). These and other policies provide a broader context for adaptation to climate change, but the connections between all these policies are poorly developed.

The Framework indicates the Government would aggregate the RAP outcomes into a state response (South Australian Government 2012, p. 59). This response was released in 2018 as *'Towards a resilient state'* (South Australia Government 2018b). This is covered in section 4.6 below.

Since the completion of the fieldwork (2017) and with a new state government – the Liberals were elected in March 2018, several new climate change policies have been released (Table 3.1). These documents, discussed in Chapter 8, incorporate relevant elements, adopting a broad whole-of-state approach but not supporting the RAP approach.

Additional policies focus on reforming the regional NRM arrangements. For example, Landscape Boards replace NRM Boards and community is *'placed at the centre'*. Climate change is seldom mentioned. Of key interest in these policies is the adoption of the principle of *'decentralisation of decision making and empowerment of communities,'* initially presented in a pre-election Liberal policy document (Liberal Party South Australia n.d.). However, there is little additional information on what this might mean in practice.

4.2.2. Sector agreements

Sector agreements facilitate collaborations between sectors and government. They are enabled through Section 16 of the *Climate Change Act 2007* (South Australian Government 2007a). The Act allows the Minister to *'...enter into agreements with a particular person or entity or industry or business group on a voluntary basis for the*

purpose of recognising, promoting, or facilitating strategies to meet any target set under this Act. Sector agreements aim to *'engage with industries and community organisations'* (South Australian Government 2012, p. 59) and inter alia *'...to reduce greenhouse emissions and adapt to climate change'* (South Australian Government 2020).

Several sector agreements were signed to develop RAPs, e.g., Eyre Peninsula and SAMDB and *'define how the partners will work together to plan and implement adaptation action'* (South Australian Government 2012, p. 22). The Local Government Association of South Australia (LGASA) also signed a sector agreement focussing on the RAP's Science to Solutions project (Government of South Australia 2013a). In 2017 the RH&C signed a sector agreement which lays out a range of post-planning actions for all parties (Resilient Hills and Coasts 2017). This extension to the RAP can be used to monitor and evaluate the effectiveness of any implementation. A new Sector Agreement was signed in February 2021 (Resilient Hills and Coasts 2021). Sector agreements have public validity and potentially look good for the respective parties. The extent to which they can be used as leverage for resources or recognition is unknown.

4.2.3. The Premier's Climate Change Council

The Premier's Climate Change Council, established in 2008 by the *Climate Change Act 2007*, Division 2, Section 9 – 13 (South Australian Government 2007a, pp. 9-11) and supported by *Tackling Climate Change*, has a function to *'... provide independent advice to the Minister about matters associated with reducing greenhouse gas emissions and adapting to climate change'* (South Australian Government 2007a, p. 10). While it primarily responds to requests for advice, the PCCC can provide unsolicited advice to the Minister. Formal PCCC advice must be presented to both Houses of Parliament with comments from the Minister. The PCCC has produced annual reports (for example: Premier's Climate Change Council 2017, 2019; Premier's Climate Change Council 2020) which meet its regulatory obligation and support Section 7 and Section 21 reports prepared under the Act.

In 2013 the PCCC developed *South Australia's climate change vision, Pathways to 2050* (Premier's Climate Change Council 2013) providing recommendations for

working towards 2050. There are few new contributions to a MLG approach and limited discussion on any form of governance arrangements. However, it does recognise that *'all levels of government need to work collaboratively with businesses and the community to develop effective solutions'* (p. 22) and. *'... expect(s) government at all levels to play a strong partnering role...'* (p. 27) with the need to *'Provide leadership at a national and international level...'* (p. 28) This provides another example of policy being developed and not followed through in terms of implementation and reporting to stakeholders. Neither this nor the *Tackling Climate Change Strategy* discuss Regional Adaptation Planning.

The PCCC's Vision further recognises that *'governments need to lead...to exploit opportunities to innovate and adapt, just as the community needs to use its voice and consumer power to drive change'* (Premier's Climate Change Council 2013, p. 7). The Vision places leadership responsibility with the Department of Premier and Cabinet so climate change considerations are integrated into all government decision making.

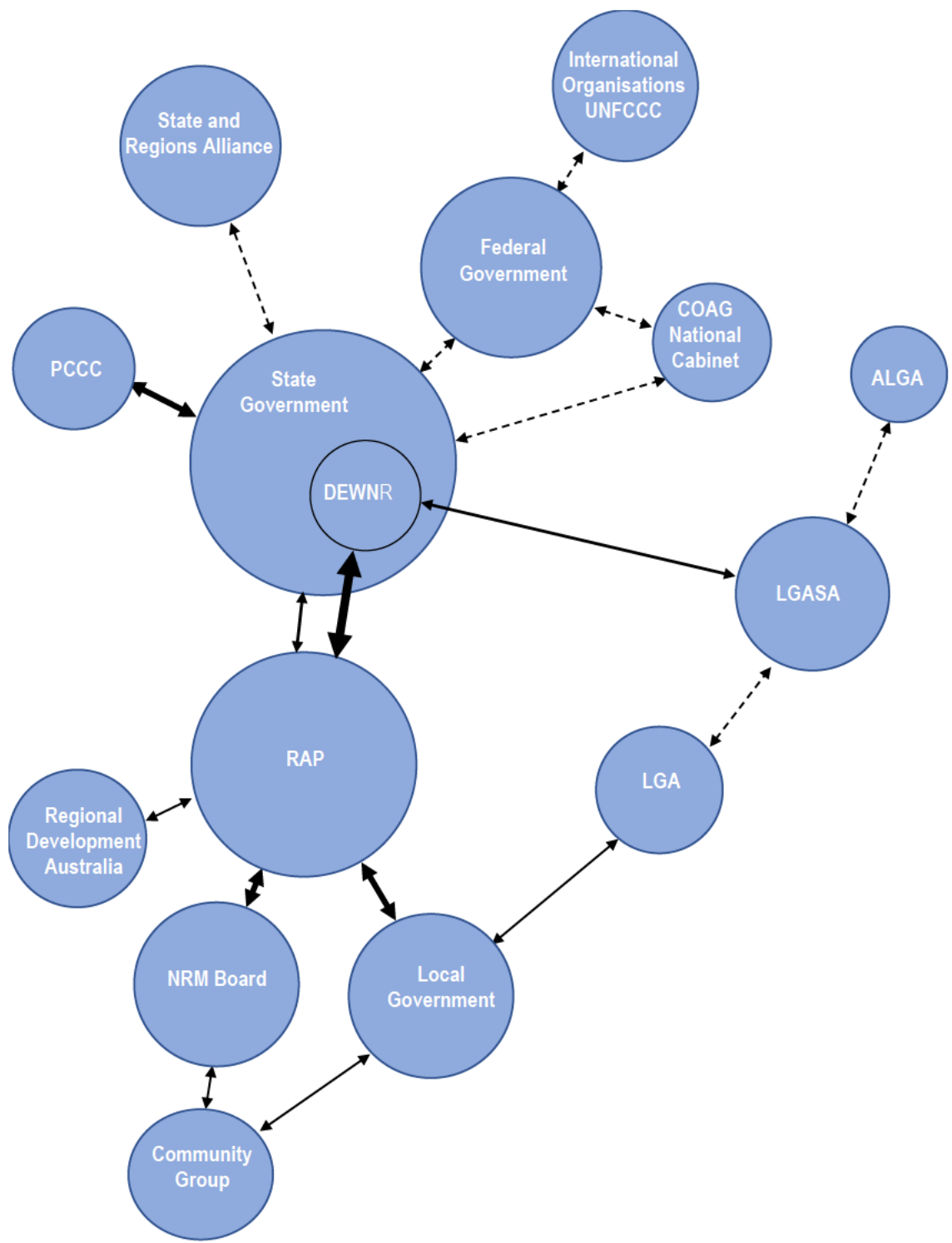
The PCCC supported the development of the *Prospering in a Changing Climate Framework* which laid the foundation for the RAP processes.

...the work the (Premier's) Climate Change Council did was to draft up and establish the South Australian adaptation framework. Now that's a really important piece of work in setting (the steering committees) up, so (RAP) became the model that's embedded in that framework and, that model is applied across 12 regions (P7 Po6 NRM).

The PCCC facilitated the Regional Adaptation Discussion Forum in May 2016 on RAP planning and implementation, to discuss future priorities and for networking (See 4.4 below). This forum brought together representatives from the RAPs, agency staff and others. Only a few such meetings were held, and this questions who is best placed to organise these meetings. The PCCC has also supported the development of *Directions for a Climate Smart South Australia* (Government of South Australia 2020e) and the *Blue Carbon Strategy for South Australian 2020- 2025* (Government of South Australia 2020a).

The PCCC has provided some key public policies but otherwise remains inaccessible to the public in terms of understanding its activities. For example, it is difficult to verify the outcomes of actions reported in the Annual Reports (Premier's Climate Change Council 2019, 2020) as briefings are not available and seldom reported. The PCCC potentially provides a platform for advocacy or at least an avenue of inquiry.

Figure 4.2 presents a schematic of the governance arrangements relevant to the climate change adaptation RAPs in South Australia. The size of the circles represents the relative importance of the organisation in terms of their roles. The arrows' thickness represents the strength of the connections and while suggesting equity in direction, this is not necessarily the case e.g., the direction from DEWNR to the RAPs is stronger than the reverse.



Source: Adapted from Nalau, Lawrence & Burton 2019

Note: DEWNR – Department of Environment, Water and Natural Resources, RAP – Regional Adaptation Plan, PCCC – Premiers Climate Change Council, LGA – Local government Association, LGASA - Local Government Association of South Australia, ALGA - Australian Local Government Association, COAG – Council of Australian Governments, UNFCCC – United Nations Framework Convention on Climate Change.

Figure 4.2 Governance arrangements in South Australia

4.2.4. Local Government Association of South Australia

The Local Government Association of South Australia (LGASA) has been a major driver of addressing climate change adaptation and has worked with the State Government since 2008 (LGASA 2018). This impetus was generated following the 1983 Ash Wednesday bushfires when seventy-five people died in one of Australia's most severe fires. Subsequent concerns about insurance generated action and resulted in the development of the Mutual Liability Scheme (MLS) (Brown 2015 pers comms) which provides local government members a fully integrated risk, claims and legal service for managing civil liabilities. The MLS stimulated interest in addressing the impacts of climate change. The LGASA developed a Climate Change Strategy 2008-2012 to guide its actions and it was reviewed in 2013 (LGASA 2013a). The MLS Climate Adaptation Program (2009-2012) was a key part of this strategy. The LGASA's Science to Solutions programme was '*... part of a wider collaborative effort to develop strategies and tools to provide targeted support for improved climate change adaptation planning and decision-making*' and established under a partnership with the Department of Environment, Water and Natural Resources (DEWNR). It provided substantial support to local councils.

DEWNR contracted the LGASA to develop guidelines (Balston 2012; LGASA nd1) and these were used by councils and others for the RAP processes. The LGASA also produced a guide for councils for their own Climate Action Plans. A study by the LGASA (2014, 2014a) highlighted values and beliefs as being critical barriers for further adaptation action.

This work places LGASA at the centre of the RAP processes, directly through the guidelines and indirectly through the councils. This relationship presents an additional pathway between state, regional and local level organisations.

The RH&C RAP comprises the five councils of the Southern and Hills local government areas (LGA) plus Adelaide Hills Council, which is part of the Metropolitan Adelaide LGA. The SAMDB RAP incorporates the Murray Mallee LGA with nine councils plus Mount Barker and Alexandrina Council. These sometime complex structures present further opportunities for the manifestation of elements of a MLG system within the existing LGA but also across LGAs (see Figure 1.2 above).

The LGASA produced a summary of the RAP process (LGASA 2018) and presented eleven case studies show-casing the range of activities. While these are illustrative, not all RAPs included all these activities.

Local councils and the LGASA have played significant roles in supporting and developing RAPs. These roles have varied in effectiveness resulting in a diversity of RAPs, providing for opportunities for learning and sharing lessons.

4.2.5. Natural Resource Management Boards

The regional Natural Resource Management Boards have equalled local councils in terms of their role in supporting the RAP processes and as with the councils their roles have varied. They have hosted some RAP processes (e.g., SAMDB) and have therefore influenced the process and outcomes. The NRM Boards are responsible for developing regional NRM Plans, which have a high degree of overlap with the RAPs. The NRM planning process usually includes a high degree of community consultation and lays down a process for project implementation. A specific asset for the SAMDB Plan (SAMDB NRM 2014) is 'atmosphere' and this includes their climate change adaptation projects. The RH&C RAP, along with six other RAPs, was supported by the Adelaide Mount Lofty Ranges NRM Board.

These planning processes vary. In the RH&C case Kangaroo Island (KI) NRM, and consequently KI Council, provided the example (P13, Resilient Hills and Coasts 2016b, p. 75). KI NRM had already integrated their IVA into their regional NRM planning (see 4.3.3.5 below) and while they participated in the RAP process, they kept the KI component separate and focused on non-NRM priorities; this is reflected in the structure and the contents of the RAP. This variation provides additional opportunities to explore the diversity within the RAP process.

4.2.6. Local Government - Alexandrina Council

Alexandrina Council participated in both RAPs and is used here as a representative of local governments' role in the RAP processes. Other councils involved in the RH&C RAP include the City of Victor Harbor, the District Council of Yankalilla, Kangaroo

Island Council and Mt Barker District Council. Numerous councils were involved in the SAMDB RAP process (Siebentritt et al. 2014).

Alexandrina Council, with significant natural resources including the River Murray, the Lower Lakes, the Murray Mouth, and some coastline, has a strong focus on socio-ecological issues; the River and Lakes have significant tourist and lifestyle investments. The Millennium Drought (late 1990s – 2011) (Murray–Darling Basin Authority 2016) had a significant impact on local communities and businesses. The Council subsequently developed an Environment Action Plan (Alexandrina Council 2014), which contains a chapter on proposed actions to address climate change, including participating in the RAP process. This environmental plan also includes the development and implementation of a Council-specific Climate Change Adaptation Plan. This provided the justification and incentive to participate in the RAP processes.

The SAMDB RAP used the NRM boundaries (Siebentritt et al. 2014) resulting in a larger overlap with Alexandrina Council than with the RH&C RAP boundary. This and the fact that the SAMBD RAP started in 2013 before the RH&C RAP meant that Alexandrina Council allocated more resources to the SAMDB RAP process. And while the Council hosted the RH&C RAP Co-ordinator, the RH&C RAP took a position of 'taking regard' for the SAMDB RAP (P22 RAP, P40 LG) and not focussing on the SAMBD issues. Alexandrina Council, like all the other councils under the RH&C RAP, was to develop its own Climate Change Action Plan and this would draw on both RAPs as required.

In December 2019 Alexandrina Council supported a climate emergency declaration to provide a clear '*...mandate to place climate change at the forefront of local action*' (Alexandrina Council 2019). This declaration saw the establishment of a Section 41 Climate Emergency Advisory Committee of Council. Importantly this declaration also supports the allocation of resources and staffing to lever additional grants and develop and implement projects and programs.

Alexandrina Council also participated in a RH&C RAP lead pilot project assessing governance of climate change adaptation. A report has been submitted to Alexandrina Council and while in other councils their reports are available (Climate Planning and Seed Consulting Services 2019), the Alexandrina Council report is yet to be made publicly available as it is still, at the time of writing, under consideration by Council.

Limiting access to such material constrains interpretation and limits the ability to review council practices.

4.2.7. The Goolwa to Wellington Local Action Planning Association

The Goolwa to Wellington Local Action Planning Association (GWLAP) is an independent, incorporated community group with primary interests in environmental restoration and protection and sustainable agriculture. Created in 1998, it was supported by the River Murray Catchment Water Management Board and the Murray Darling Basin Commission, both of which had an interest in supporting regional communities to work on their priorities (Climate Planning and Seed Consulting Services 2019; Goolwa to Wellington Local Action Plan 2013; Whittle 1999). GWLAP is governed by a Board of community members. The GWLAP Board sees itself as strategic, leaving operational activities to the staff. The Board has received governance training focussing on meeting procedures and officer bearers' roles. A range of decisions are made by the General Manager and specific project officers.

The LAP has a strategic plan (Goolwa to Wellington Local Action Plan 2013) with five goals, one of which is to '*manage the impacts of climate change*'. Strategies to achieve this goal include raising awareness within the organisation, developing bio-links between project areas, reviewing the LAP's operations, and reducing and offsetting emissions. The LAP also recognises, though does not adequately report, that many of its on-ground projects make contributions to addressing climate change but it is also affected by climate change, requiring some adjustment to management practices.

4.2.8. National context

The Australian Government has developed several policies which provide some guidance for the development of regional adaptation plans. These include the National Climate Change Adaptation Framework (Australian Government 2007) which supports regional actions and recognises the benefits of national coordination and collaboration. The Adapting to Climate Change in Australia – A Position Paper (Australian Government 2010) sets out the government's vision for adapting to the

impacts of climate change and proposes practical steps to realise this vision. The National Resilience and Adaptation Strategy (Australian Government 2015) builds on the 2007 Framework and places further actions in a national and Asia-Pacific context. Government roles and responsibilities (Council of Australian Governments 2012) were agreed as part of the Framework development.

Other reports support the RAP processes. Smith *et al* (2008), exploring adaptation within local government, provide several case studies addressing regional barriers to adaptation. They further identify that:

...for adaptation to be successful, collaboration will have to become the new standard model for governance Yet the major stumbling blocks to adaptation will only be circumvented through partnerships and good-faith 'give-and take' among relevant organisations. Ultimately, such collaboration represents a 'win-win' for all involved as it increases the efficiency of governance by leveraging knowledge, talent, and resources in pursuit of common interests (Smith et al. 2008, p. 3).

The Murray River, the Lower Lakes and the Murray Mouth all fall within the jurisdiction of the Murray Darling Basin Authority, an independent statutory agency with membership of six governments. These include the Australian federal Government, the Queensland, New South Wales, Victoria and South Australia state governments and the Australian Capital Territory. The MDBA has paid little attention to climate change and has not been involved in the RAPs even though they own the barrages; any decisions or actions would involve them (see Box 4.2 below). The barrages are key structure which regulate the water levels and freshwater/saltwater divide in the Lower Lakes and Murray Mouth region in South Australia.

4.3. Plan development

4.3.1. Regional planning

A key consideration in the development of the RAPs was path-dependency (Bardsley, Palazzo & Pütz 2018; Barnett et al. 2015), informing final decisions on priority areas

for action. Many of the actions were considered because they were consistent with implementing organisations' current regional practices; re-tooling to undertake new actions could potentially lose previous investment in the development of the existing operational machinery, capacity and expertise and require significant additional resources and time, not generally available. This 'lock in' into current investment limits options of future innovation (Gupta 2014) and perpetuates 'business as usual', which can be argued to have resulted in the current situation in the first place. Grube (2014) provides some contemporary examples of lock-in path dependency by Australian political leaders in the context of climate change. While it appears that this is part of the way things work, at least in Australia, it also seems that these limitations restrict and narrow options for making real impacts on positive climate change outcomes.

4.3.1.1. State Planning regions vs regional NRM boundaries

As discussed in Chapter 2, regionalisation, particularly of NRM has had a strong influence on resource management. The RAP process builds on this regional approach and there was broad support for this approach:

...what needed to happen was so community-specific, that the only way you could do it was in terms of different regions thinking through their own adaptation needs....so, it didn't hurt that at a regional level they've done some good thinking and they are well set up to pull the government people into the same room (P0 Po10 Other).

I think it makes a lot of sense to have this regional approach which ultimately comes together into a state approach (P29 Po3 LG).

However, regional planning boundaries were used (despite internal advice against this (P8 Government) as a means of broadening out the participation and nudging local government and other sectors and agencies to be more involved.

Climate change has always been seen as an environmental problem and so we set it up as a local government problem, that was part of the signalling about it's time to move on... (P8 pg 6 Government).

The choice of planning boundaries also impacted on future implementation of the RAPs as the 'structure', - the Steering Committee was informal, lacked accountability and community legitimacy and was ephemeral. Once the RAPs were completed, each participating organisation was going to develop their own local Climate Action Plan. There was limited discussion about what would happen with the Steering Committees and, despite the plans commenting on monitoring and review, there was limited thinking about how this would happen or who would do it.

So, (RAP)'s a creature that sits in between all of those bodies, and it's not owned particularly strongly by one entity as its be-all and end-all, ... It's a manifesto for those stakeholders. They all would like it to be informative, and to point in the right directions. But none of them is committed to really delivering its every word, because it sits in between the responsibilities of all of them (P12 Po14 NRM).

It may not matter which boundaries are used if work across the boundaries is important. This is about building relationships, trust, and respect as is often promoted when restructuring occurs, seemingly every three to four years. However, developing some organisational consistency and stability is important in promoting some sustainability of approaches. Focusing effort on developing adaptive capacity is likely to generate better processes than continual restructuring. Perhaps 'when in doubt, do another plan', can be supported by 'when in doubt, restructure'.

4.3.1.2. Regional level infrastructures

The choice of using planning boundaries is compounded by the fact the only formal institutions at the regional level are the NRM Boards; with planning boundaries there was no organisation, office, staff, financial and administrative arrangements, and no governance systems. The use of the NRM Board as host or auspicing body (Justice Connect 2018) would have made administrative sense. In most cases the alternative was hosting by a participating local government, and this risked potential conflict of interest or preferential benefits.

...you're more likely to get action around implementation if the plan is developed for a specific decision maker, in their specific decision-

making process. The problem with the regional scale is that there is no implementer. There is no official decision-maker, so developing plans at the regional scale doesn't make sense. Understanding the nature of the problem at the regional scale, might be useful to highlight cross-jurisdictional issues, but the plans need to be developed at the scale at which people have a mandate and agency to act (P16 Po3 Researcher).

The absence of cross-sectoral regional processes presented additional challenges to the RAP processes. An effective adaptive system could simplify the processes and make them more effective and efficient. In addition, development of adaptive capacity could be transferable to future challenges.

4.3.2. The planning context - South Australian Government

Several adaptation planning processes were in place when the RAP policy was developed: each having different plans and timelines. State-level plans included the State Strategic Plan, the Climate Change Strategy, energy and environmental plans, and development and economic plans. At a regional level, the regional NRM plans were dominant with a range of sub-plans. Local councils had strategic plans and environmental plans. Local community groups had their own plans as well, such as the GWLAP Plan.

Substantial emphasis is placed on plans across a wide range of sectors. Plans are often seen as solutions to many problems which generates the saying 'when in doubt make another plan'. Less emphasis is placed on the planning process. This is at odds with another precept originally expressed by Eisenhower (1957, p. 235): '*I tell this story to illustrate the truth of the statement I heard long ago in the Army: Plans are worthless, but planning is everything.*' And more recently by Ryan (2015): '*Plans are nothing, planning is everything.*' This priority on the outputs as opposed to the processes of engagement and collaboration consolidates the retention of control by central government as discussed below.

Alignment, consistency and being 'not inconsistent' with the planning processes impacted on the RAP process and the actual RAPs themselves. Many RAP partners

were simultaneously involved in other planning processes e.g., SAMDB was undertaking parts of the Regional NRM Planning. The stage that such partners were in those processes provided opportunities to integrate the two processes. This was further influenced by which organisation was leading or hosting the RAP, e.g., the SAMBD NRM Board was hosting the RAP and was therefore able to align the RAP and their own NRM Planning to the extent that the RAP was mostly an extension of their NRM Plan. This integration was also influenced by the capacity of the project officers facilitating both process.

...the Regional Adaptation Plan sits under the Strategic NRM Plan. So, the RAP is currently being built into the Regional Action Plan... The Adaptation Plan probably was done more external than it was internal... that may be why the RAP hasn't got as much ownership. I'm hoping with the Regional Action Plans, we'll be able to bring that Adaptation Plan with it (P21 Po13 NRM).

While the State acknowledged the diversity of the regions and anticipated a range of RAPs, it was probably not willing to consider that a region may not want or need a RAP as per LGASA guidelines as they had already commenced an equivalent process within another planning process thus producing some overlap. A homegrown adaptation plan could possibly have been amended to be more of a linking document where it provided connections and linkages between the RAP and the local adaptation plan (P23 LG, P13 NRM).

Other plans provided for RAPs and the RAP policy gave the authority to implement that part of those plans.

...the review of the (NRM) plan, set up an atmosphere program which had a component to develop an adaptation plan so that's where the first sort of strategic approach came from... (P3 Po3 NRM).

So, we incorporated that into our environmental action plan, that council should participate in regional adaptation planning, and that we should then move on to council-specific adaptation planning. We were really aware of that kind of state - regional existing framework (P40 Po4 LG).

The RAPs provided for an intermediary, linking and interpreting role between local action plans and the state plan, though this was unlikely to be the sole purpose, otherwise a different process may have been more efficient and effective. This nested planning of local, regional, and state, facilitates development of several elements of an MLG system.

...there was always an understanding ... that the adaptation plan was a regional focus, and we shouldn't get side-tracked into local priorities ... that each of the councils would then go on to develop a local action plan and that each of those councils is responsible for localising, as well as participating in the regional priorities (P22 Po 1 LG).

The nested nature of the organisations supported the approach required by the State Government.

So, we're a group of councils which are part of a local government subregion, called the Southern and Hills Local Government Association. And so, we've worked together with that group to form this Resilient Hills and Coast Adaptation Plan. And that's a requirement of the State Government, that each region has got to come together with a plan (P34 Po2 LG).

Deeper consideration of the implications of the RAP policy in both the regional and state context might have mitigated some of the challenges of the processes. This questions the ultimate intent of the policy and the anticipated outcomes. Greater integration across the various levels might be supported by taking an MLG approach which potentially offers a framework for resolving some of the conflicts (Marks 1993).

4.3.2.1. Australian Government Climate-ready Regional NRM Plans

Most regional NRM plans did not include adaptation to climate change. To address this the Commonwealth Government funded the Regional Natural Resource Management (NRM) Planning for Climate Change Fund Stream 1 and Stream 2 project. The impact of these programmes is influenced by the State's policy setting which determines the role of NRM plans. Better linkages and collaboration between

researchers and planners are critical in supporting these programmes (Clear Horizon 2016).

This project was running in parallel with some RAP processes but was not integrated except maybe at the local planning level. The project included AdaptNRM, which provided a lens for reviewing regional NRM plans so they could better reflect adaptation actions.

...maybe because of the climate change ready plan and they weren't aware that there were these other initiatives about to kick off or maybe they did. I don't know (P13 Po2 NRM).

So, the SA Climate Adaptation Plans, the process for their development was underway before the federal funding came through for all NRM Regions to produce climate-ready (regional NRM) plans. So, in fact, we already had an Adaptation Plan (P20 Po1 NRM).

AdaptNRM was a CSIRO project designed to develop some tools for supporting NRM adapt to climate change (CSIRO 2014) to explore deeper and facilitate integration across the planning processes (Rissik et al. 2014). In some cases, the timing did not overlap well; the SAMDB NRM were developing their sub-regional plans and their RAP was underway before the Commonwealth funds came through (P20 NRM).

This provides a further example of several overlapping initiatives driven by different agencies over different time periods and for different objectives. This resulted in many officers being over committed and not being able to do justice to the various programs.

4.3.3. Planning processes

4.3.3.1. LGASA role and Guidelines

LGASA's role was providing support through developing the guidelines and maintaining the policy environment at the state level. This support was heavy focussed on local government elements and interests. Support for any specific RAP was mostly indirect via the local government area managers. In the case of RH&C this was the Southern and Hills LGA.

The Guidelines (Balston 2012) were designed to provide some internationally acceptable methodology, and a good scientific basis by using available data for each region. The use of the Guidelines was not mandatory. Consistency across the RAPs was initially desirable so DEWNR could compare the regions, and the Guidelines were written to provide some rationale for writing consistent tender documents (P4 p 4).

...so, at a governance level, the State Government could have written the tender documents for all the regions and said you can only use this guideline and process, and then everyone would have had a more consistent approach... (P4 Po10 Consultant).

The Guidelines were clearly needed but did not dismiss confusion about how to develop the RAP with available resources and support. There was a strong 'learning by doing' component.

What's going on? How is it being done? How is it being implemented? And then I eventually met (PO). They had a meeting to talk about that initial stage, and (PO) and I had great concerns because they were all over the place. They didn't know what they were doing (P24 Po7 LG).

Most RAP project officers were employed part-time presenting challenges with capacity to progress the plans. There was a degree of sharing of experiences and documents between the RAP processes, mostly from early adopters to those who were just beginning. This supported an evolution of the process.

Some of it was borrowing from Eyre Peninsula where they provided their publications, - I think we've got to be very grateful for people like Northern and York who had actually done the hard yards before. It was just easier for us to follow the models there (P3 Po5 NRM).

It was not always plain sailing.

...it's been an advantage and a disadvantage coming to this cold. The main disadvantage is you start from scratch, you're literally reinventing the wheel ... When I first read that LGA framework, I didn't understand it, the language in there, and now I can't even believe

sometimes that I speak in that language, I think there's just a lost opportunity in regularly thrashing it out with the regions and the State ... If I was to describe the whole scene, it would be 'osmosis' because it happens, it's like inventing it as you go along (P22 Po15 RAP).

As discussed above, the LGASA reviewed and summarised the whole RAP process (LGASA 2018) and this illustrated selected elements of the processes and showcased some of the projects undertaken by various RAPs. This assisted ongoing implementation of the RAPs.

4.3.3.2. Steering Committee membership and hosting arrangements

RAP management committees (henceforth steering committees) were set up for each of the twelve regions, each having their own combinations of member organisations. The composition of the RH&C steering committee evolved to be dominated by local government, and this was retained with the understanding that other stakeholder groups would be engaged during implementation (PO 7, 13, 15, 18, Appendix 5). The local government-dominated steering committee decided to restrict membership to only local government members.

...the state adaptation framework, while it brings the three regional stakeholders together, sees differences in responsibilities taken by those stakeholders. In some regions NRM's driving it, in some regions, RDAs driving it, in some regions local governments are driving it. You would have thought that local government, as the custodian of communities, would have been in the best position to have the broadest overview, ... too many local governments are still stuck in the rates, rubbish space (P7 Po 14 PCCC).

The steering committees presented some challenges for project coordinators seconded from members' organisations, often the host organisation, especially if they had other roles.

I considered I was working for the Steering Committee because they would make decisions. However, being that it was delivered through the lead agency (NRM) you do see colourings of NRM come through (P3 Po2 NRM).

The RAP and the steering committee provided a mechanism to develop new partnerships between organisations that did not often collaborate.

...the (steering committee) is a transient group. It's just for the project. So, it started probably two years ago doing the knowledge audit. So, that's the first time those groups ...those councils, DEWNR et cetera, have worked together and at this stage there is no commitment to continue beyond 30 June 2017 (P22 Po1 LG).

State Government as the initiator of the policy also had a key role on the steering committees where, depending on the region and the natural resource issues, several agencies' representatives might have participated. Most RAPs also had access to a dedicated Departmental liaison officer to facilitate the process. Maintaining networks across RAPs was also a challenge.

...there have been a few State and LGA organised gatherings of regional people. ... You've just got to keep up those relationships, but ... I think a lot of it comes down to who you know, ... I think that's where State Government missed an opportunity around the broader basic communication around climate change and adaptation, the State could be leading that because those messages, creating a common understanding is the same, it doesn't matter what region you're in (P22 Po12 RAP).

While there was some connection between state and region this was more of a hands-off approach, rather than a negotiated arrangement based on agreed allocations of roles and responsibilities. The connection between regions and local government was better given the closer participation of local government in the processes. However, this did not normally extend to communities, who were often poorly involved and left with little awareness of the process.

The host selection was voluntary and changed on several occasions. For example, the RH&C's original host was Regional Development Australia (RDA), and Alexandrina Council then took over (P22 RAP). The arrangement was influenced by the availability of oversight of the project, the interest of the new host and logistics such as availability of office space and resources. The host organisation had additional expenses, additional opportunities to steer the process, and benefited from being better connected and having increased access to personnel and expertise. The SAMDB RAP had a stronger NRM approach, with the NRM Board hosting, and RH&C had a stronger local government perspective with the domination of the steering committee by local government representatives.

...we have been a facilitator of regional adaptation planning. ... our region was kind of floundering, and so we stepped in. So, we kind of played our leadership/ facilitation role in bringing that group together... the lead organisation previously wasn't committed to the project (P40 P2 LG).

Regional hosting of project coordinators also generated a lot of ownership for the RAP process (P35 Po15 LG) and benefited the hosts, who were better resourced and more committed organisations, generating returns on their investment.

4.3.3.3. Funding

Funding for the RAP development, and implementation, had a significant impact on the process. Initial seed funding was made available from DEWNR; further resourcing was available in the form of government project officer time to support and liaise between the RAP and State Government. This government project officer and other agency officers provided LG policy and technical advice.

Additional funding was provided by members of the steering committees. Which organisations paid what amounts varied across the RAPs. In most cases initially these RAPs were not budgeted projects so discretionary funds were accessed from a range of other projects. Not all steering committee members made contributions.

And those regional groups are slightly unnatural. They have no obvious source of resourcing. Its resourcing had to be created independently. So, once Federal Government funds and grants dry up, you sat there knocking on people's doors (P0 Po13 Other).

As discussed above, the Natural Disaster Resilience Program also provided some funding. Ensuring funds for implementation is critical (P3 NRM, P23 LG).

4.3.3.4. Stakeholder engagement

The key players in the RAPs were heavily involved through the steering committees. Some minor agency and industry interests were less involved but were invited to participate. Of the four levels in this research one significant omission in the two RAPs of interest is the community. The SAMDB had a broad community engagement component and built it into their Regional Action Planning processes (P21 Po10 NRM). In contrast, the RH&C RAP provided a good example of poor and limited community engagement. This can be traced back to the composition of the steering committee as discussed above and poor communications.

Effective community engagement has been one of the major objectives across many sectors and all levels. It is disappointing to see that inadequate and unprofessional practice persist in these processes. This, with poor communications has created ‘... ‘deficit’ approaches towards knowledge production and acquisition (which has) led to a dis-empowered and dysfunctional form of environmental governance...’ (Barr & Woodley 2019).

Other RAPs were much more effective and often this was because of leaders placing a high value on community participation.

We had a really effective group, only 35 people, but engaged all the way through. When you've got a reason and machinery to have that group together it functions really, really well and you get some good intellectual, broad big picture thinking but the moment your job is done, you've got no reason to have them together anymore and you actually lose them (P7 Po6 NRM).

Beyond the extent of engagement, which was mostly on the consultation end of the IPA2 spectrum, the methods are often unsuccessfully executed generating limited results.

...we spent hundreds of thousands, and we got some stakeholders involved, if we sat ten people around a table for an afternoon, would we have got anything different? So, we missed opportunities in the IVA because a lot of local knowledge coming up wasn't adequately captured... We were broken up into groups, with questions, and some people had a lot to share, and you couldn't get that all down, we just actually need more discussion ... a three-hour workshop and tick the box, I don't think it gets you there... (P13 P11 NRM).

Cole (2015), drawing on Ostrom (2003), suggests that building trust develops and reinforces norms of reciprocity which may lead to greater levels of cooperation and higher levels of relationship capital. This requires more than the usual token consultation processes used for developing RAP and other plans.

4.3.3.5. Integrated Vulnerability Assessments

Integrated Vulnerability Assessments (IVA) were undertaken within the RAP process to support decisions on allocation of resources to the most vulnerable assets (LGA South Australia et al. nd3, p. 9). IVAs were completed for the RH&C (Resilient Hills and Coasts 2016a) (with a separate one for Kangaroo Island completed before the RAP was commenced (Resilient Hills and Coasts 2014) and the SAMDB RAP (Siebentritt et al. 2014).

...the NRM plan for (NRM Region) had a milestone of an IVA... The envisioning was about NRM but... (consultants) used that as the first step of values mapping of the IVA...and then continued to run a RAP IVA workshop ... This adaptation plan had become wrapped up with the NRM plan... (P13 Po2 RAP NRM).

IVAs used the LGASA methods of collecting data about exposure, sensitivity, impact, and adaptive capacity (Allen Consulting Group 2005), allocating a score to each, and

calculating an overall score for vulnerability (Balston 2012, p. 35). However, IVAs have broader origins and objectives having come out of the IPCC and being driven by scientists only interested in impacts and not decision making and governance (P16 Po4 Researcher).

The Eyre Peninsula RAP IVA was seen more as focusing on risk than opportunities, and while potentially useful in the early stages was later of less value in supporting future actions (Moretti, Siebentritt & Spoehr 2015). Substantial investment went into developing the IVAs but for questionable returns with respect to the IVAs contribution to supporting the RAP and their implementation.

4.3.3.6. Consultants

Consultants played a significant role in the development of RAPs. This included the formulation of the Guidelines (Balston 2012), the RAPs themselves (Resilient Hills and Coasts 2016b; Siebentritt et al. 2014) and follow-up activities (Climate Planning and Seed Consulting Services 2019). Consultants were needed as none of the regions had the expertise in house to undertake the process. One consortium, Seed Consulting and URPS, undertook ten of the eleven RAPs (Table 4.2.). There were few alternatives and Seed Consulting Service, having won the first tender, gained experience, and with URPS successively won more tenders, developing more experience to service the clients. In association with CSIRO, they also developed the adaptation pathways approach.

RAP coordinators interpreted the guidelines in different ways and, with the assistance of previous RAPs, wrote different terms of reference (TORs) for the consultants (P4 Po2 Consultant) who reinterpreted the TORs based on their experience, including an understanding of what the clients wanted and needed. Consultants often have better knowledge of the context and contents of tender documents and the expectation of back donors, in this case the State Government. They were able to negotiate contracts beyond the original scope, continuously improving the RAP process. The adaptation pathways approach may have been such a development.

Table 4.2 RAP Consultants

RAP	Year	Consultant	Adaptation pathways
Yorke and Mid North	2013	Unknown	No
Barossa	2014	Seed	No
Eyre Peninsula	2014	Seed, URPS, CSIRO	Yes
Resilient South	2014	URPS, Seed	Yes
SAMDB	2014	Seed, URPS	No
Limestone Coast	2015	URPS, Seed	Yes
AdaptWest	2016	URPS, Seed, AECOM	Yes
Far North and Outback	2016	Seed, URPS	Yes
Resilient East	2016	URPS, Seed	Yes
Resilient Hills and Coasts	2016	Seed, URPS	Yes
North Adelaide	2016	Seed, URPS	Yes

Note: The year represents the completion dates of the RAPs. Consulting companies are Seed Consulting, URPS – (Urban and Regional Planning Solutions), CSIRO – Commonwealth Scientific and Industrial Research Organisation and AECOM - Architecture Engineering Construction Operations and Management. RAPs that used the adaptation pathways approach are also listed.

Some consultants are also more proactive and identified funding opportunities, supporting clients' applications (P28 Po1 Consultant), and even co-designing the project from an early stage. Through their experience consultants develop wide and strong networks beyond those of most officers. This enables them to access additional knowledge and personnel in other organisations, thereby playing a boundary spanning role.

So, I used (consultant) as the contextual bouncing board because they have that bigger picture... the most important thing they brought to the contract was probably the unacknowledged, ... that linking and that contextual information ... I guess it really is value adding (P22 Po8 RAP).

This goes beyond being a good consultant toward influencing the overall process; the nature of RAPs has been influenced e.g., by the inclusions of the adaptation pathways approach developed during the EPICCA RAP. The RAPs have become more sophisticated over the whole process (P33 Po10 Government).

The consultants' role can extend beyond the standard service provision.

...our agency has a valuable role to play as a boundary organisation ... (organisations) are highly constrained in doing what they have to do ... you try and give them the capacity to start to tackle that, but then at the same time we need to be almost a change agent, working with the lower levels and the higher levels to change the context so that these guys can do what they have to do. So, we have to understand those changes ... and work with the higher levels of government to start to get those changes to happen and then work with the lower levels to put pressure on the higher levels. It's politics, but it's power and spheres of influence and control and those dimensions have really not been discussed and not really being engaged with... (P16 Po6 Researcher).

Research consultants support organisations at different levels, facilitating the creation of the context within which other organisations at other levels that they are negotiating with operate. This enables them to make the relevant decisions for their level. This is part of the negotiations in the multilevel governance structure (and applies to PCG as well).

This aligns with the notion that the best regions work through their national governments which structure themselves so as to enable this facilitation. That is, part of the role of higher levels of government is to establish procedures that facilitate lower levels developing the awareness of what they can negotiate (Piattoni 2009). The consultants take on the role of boundary organisations; they link the domains on each side of them, raising awareness of what each side is willing to agree to (Kirchhoff, Esselman & Brown 2015). This relies on the consultant having a good understanding of the key players and political skills to lay the foundations for the negotiation (Fawcett et al. 2018; Gustafsson & Lidskog 2018; Hoppe & Wesselink 2014; Hoppe, Wesselink & Cairns 2012; Moloney, Bosomworth & Coffey 2018).

Consultants here behave as actors in actor-centred MLG (Marks 1996; Piattoni 2009) where different types of consultants (actors), moving freely across traditional levels and spheres of authority link different levels of government and encourage work from the ground up (Fawcett & Marsh 2017, p. 60).

The use of consultants supports ‘...the transformation of climate information so that it becomes more usable: targeted to specific users, sensitive to context, more responsive to decision-maker needs in terms of timeliness and incorporating new research findings, and iterative in its delivery,’ (Keele 2019, p. 10). Furthermore, Keele (2019, p. 9) notes that ‘publicly funded climate science agencies are increasingly encouraged to behave as consulting firms do’.

Having the same consulting consortium for the RAPs had risks. Not only is there a possibility of there being ‘a copy and paste’ from one contract to another (P22 Po9 RAP), but there is also the potential constraining of perspectives (P33 Po 11 Gov), limiting innovation and creativity especially with a new process. It may not be possible to know what might have been missed by not engaging alternative consultant teams.

In the case of developing the RAPs, the consultants inherently assessed the RAP policy. ‘I suppose we interpret what the policy is but also say, ‘where are their limitations?’’ (P28 Po9 Cons). This included exploration of the most appropriate way of implementing the policy, even if there was pushback from some steering committees on what suited them best and, where appropriate, adding value to the outcomes. For example, the AP was generated out of exploring alternative ways of engaging landholders rather than going directly into the IVA (P7 PCCC).

Some of the above may provide some justification for the opinion that, because of their role, consultants could be considered as a layer of governance in a multilevel governance system (P28 Po13 Consultant).

4.3.3.7. Adaptation pathways

An adaptation pathways (AP) approach was developed during the EPICCA RAP process. Initiated by some innovative thinkers and drawing on work from the Netherlands (Haasnoot et al. 2013; Haasnoot et al. 2012), adaptation pathways are a participatory decision support tool that ‘recognises that there are often many possible ways to respond to climate change and that a combination of actions, some of which are taken now and some that may be taken in the future, could present the best way to respond’ (Siebentritt & Stafford-Smith 2016, p. 3). Adaptation pathways have been used in a multilevel governance setting (Campos et al. 2018). A key element of the AP

approach is that *'the diagram illustrates the range of adaptation options and how these can be sequenced through time'* (Figure 4.2). That is some decisions need to be made immediately and others can be delayed until certain criteria are met, or thresholds reached. Implicit is the necessity of continuously reviewing the AP, at least at each decision point, to track the conditions of the parameters used for triggering when decisions might be made.

RAPs using the AP approach are listed in Table 4.3 above.

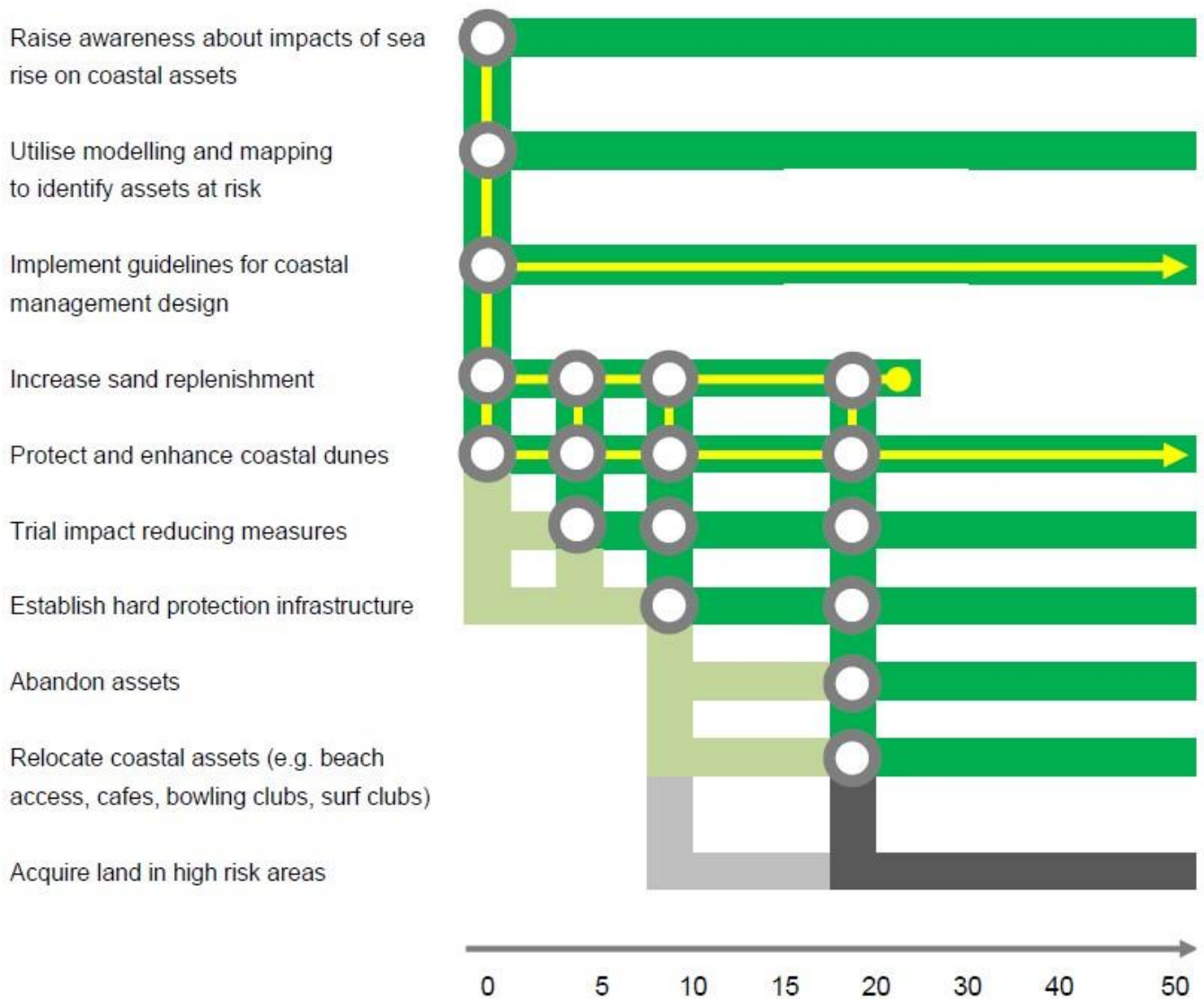
I think our plan was really important in a state, national context, ... there is a lot of evolution to occur in adaptation planning. The reason I say that is because having worked out the methodology of applied adaptation pathways, we've developed a tool that's understandable at the layman level and effective in messaging and framing decision making and moving outcomes into a timeframe (P7 Po5 RAP).

The adaptation pathways approach uses a decision tree as illustrated in Figure 4.3.

The first five preferred options are available from the start: the third, fourth and fifth being the preferred options chosen. The circles are the decision points at which point decisions to pursue that option or to choose another option are made. In this case the pathway includes priority implementation of guidelines for coastal management and moves between the sand replenishment and dune protect based on assessment of the condition of the resources at year 5 and year 10. The option of sand replenishment expires after 20 years but protection and enhancement are ongoing. Preparation for the next two options is to commence from year 5 for later decisions. Asset abandonment and relocation is not considered until year 10 when preparation is made for possible decisions in year 20. Acquisition of high-risk land is not a preferred option. Review of the pathway occurs when there a change in the condition or context, e.g., an extreme event. More detailed description of the pathway process is provided in Appendix 6 and in (Siebentritt & Stafford-Smith 2016).

Adaptation Pathway

Adaptation options



Source: Resilient Hills and Coasts: Climate Change Adaptation Plan for the Adelaide Hills, Fleurieu Peninsula and Kangaroo Island Region, 2016b, p.65. See Appendix 7 for additional explanation.

Figure 4.3 An example of an adaptation pathway decision tree

The fieldwork for this research was completed before any significant application of the adaptation pathways approach had been implemented. There is no indication that any application of the pathways approach has been utilised since. The State Government did not follow this approach and then there was a change in government in 2018 and subsequent lack of endorsement of the RAP processes. So, it seems that further implementation will not be widespread. As minutes from a more recent (11 March 2021) RH&C Steering Committee meeting suggest, implementation of some actions identified in the RAP are being undertaken e.g., energy saving from replacement of lights with LEDs and attendance at WSUD training (identified in the Regional Action Plan 2020-2025). While valuable actions in their own right, neither were identified in any of the Adaptation Pathways diagrams suggesting the diagrams are not being used. This is an area for future research.

Because we've obviously got pathways maps, I'm pretty confident saying this is the only state in the world to do pathways. How will it be implemented in a whole of state scale? I think we've got stalling in SA because there is fear about what are we doing next? And how much it's going to cost us. The pathway provides a perfect way to have a rational discussion and some things might cost us a lot of money, but we don't need to spend it now, maybe we need to build capacity now (P28 Po 3 Consultant).

The State Government's implicit endorsement of the AP approach is not reflected in any corresponding approach in the State response (Government of South Australia 2018c) and questions remain around who will implement, monitor, and review any application of the adaptation pathways.

This adaptation pathways approach differs from the work of Wise et al. (2014, p. 325) which explores '*pathways thinking*' in the sustainable development domain to consider the implications of path dependency, interactions between adaptation plans, vested interests and global change, and situations where values, interests, or institutions constrain societal responses to change.' Their analytical framing, reflecting the diversity of contexts, includes a multilevel governance frame which '*...emphasises how the cross-scale and systemic nature of climate impacts requires understanding and creating multilevel institutions and organisations that promote vertical and*

horizontal integration' (Wise et al. 2014, p. 330). They call for a broader conceptualisation of adaptation pathways which could open up policy processes through participatory deliberation and negotiation.

The adaptation pathways represent one decision making framework that is at least included in the plans. The extent to which it has been used is unclear. Other frameworks exist (Harding, Hendriks & Faruqi 2009; Hardisty 2010, 2020) but there is little evidence that they are systematically used either. This represents a limitation in the governance of adaptation to climate change and future implementation would benefit from future applications of any framework.

4.3.3.8. Project coordinators' roles

Project coordinators have played significant roles in supporting the development of the RAPs through facilitating and coordinating contracting consultants to prepare the RAPs and service the steering committee. They were instrumental in facilitating and actually making decisions on behalf of the steering committee (P22 RAP). Their role included interpreting state policy into the regional contexts and, using the RAP guidelines, translating members' interests into agreed actions for the regional partners.

These were mostly new positions so there was little organisational history to handover on commencement (P13 Po 3 NRM, P35 Po 2). Where there were previous officers there was little knowledge transfer and handover and this applied to agency staff as well.

I came in when some had been done, others were progressing. So, my understanding was, it was quite open in terms of what governance is going to work for what region. Given the resources, given who is an influencer, but making sure that all of those key parties, the NRM, local government, RDA, and state government, were all at the table involved (P33 Po8 Government).

Box 4.1 below presents a brief snapshot of RAP processes and illustrates the diversity of the process and outcomes of the planning processes.

Box 4.1 Summary of two RAPs

Building resilience to a changing climate a climate change adaptation plan for the South Australian Murray-Darling Basin (SAMDB RAP) includes the South Australian Murray-Darling Basin region and recognises that while the community is resilient, climate change will result in long-term shifts requiring an adaptive and sustainable management. A three-stage process was followed for the RAP development: mapping vision, values, and decisions; integrated vulnerability assessment; and identification and prioritisation of adaptation action. The Steering Committee had broader representation from regional partners. The SAMDB RAP identified eight key action areas, of which five are extensions of existing NRM Board business. The RAP identifies the barrages across the Lower Lakes as infrastructure that will require some addressing soon (i.e., in the next 30 to 40 years) given their life expectancy and the impact of rising sea level (see Box. 4.2). Managing the future of the barrages is seen as the most transformative adaptation of the RAP. This RAP did not use the adaptation pathways approach. The SAMDB RAP was completed in 2014 (SAMDB NRM 2014a) utilising the guidelines and process developed by the LGASA and aligning with the regional NRM planning processes. Implementation of the RAP has primarily been undertaken through integration into the Regional Action Plans of the regional NRM plan. There is no known Coordinator or Steering Committee.

The Resilient Hills and Coasts Regional Adaptation Plan (RH&C RAP) covers the Fleurieu Peninsula, Adelaide Hills, and Kangaroo Island region. It recognises that despite global action to reduce emissions regional adaptation will still be required to address the impacts of climate change. The RAP provides for a coordinated and collaborative response and identifies priorities for actions. The RAP takes an intermediate emission scenario (despite tracking on a high emissions scenario) for determining actions. The planning process included the same three steps as the SAMDB RAP. The Plan has a separate part for Kangaroo Island as their NRM related issues are dealt with in their regional NRM Plan. The Plan uses the Adaptation Pathways approach to support its decision making. The Steering Committee is made up of Local Government personnel and Government representatives. Consultation on the Plan included workshops and focus groups, and a public consultation process inviting comments on the draft plan. The Plan was released in 2016. Implementation of the Plan has been ongoing, the Steering Committee still meets, and a renewed Sector Agreement has been signed in 2021.

4.4. Implementation

The RAP planning process was arguably flawed from the start as it was not conceived of within the context of the broader project cycle as evidenced by the lack of post-

planning leadership and follow-up. There was some expectation that the regions, post-planning, would then unassisted, implement the plans (P8 Government). This lack of foresight is reflected in delays, significant reduction in actions and disproportionate impacts of unforeseen opportunities.

They finished (planning) 18 months ago; they've just released their implementation plan which goes 2015 to 2019, like it's just a reality check that it's taken them this long... (P22 Po12 RAP).

The dispersion of focus away from the RAP to local action plans, given no ongoing mechanism for implementation, was always likely to impact on the extent and effectiveness of implementation; plans would be left on the shelf.

4.4.1. Plans that sit on the shelf

RAPs were not plans that were driven by the communities or even by the organisations that facilitated the processes. That is not to say there was limited interest in the topic or plan, but left on their own, few regions would have taken up the process. The risk and cost of such a top-down approach can be limited ownership and therefore reduced implementation and contribution to desired outcomes.

We've actually got a climate adaptation plan, just no one ever looks at it. It doesn't actually mean anything (P29 Po1 LG).

...the nature of these plans is soft enough that it doesn't compel anyone to do anything. Because we're talking about a process that was funded to just generate those plans. There's no ongoing funding to review these plans, have accountability mechanisms for these plans, implement these plans, employ the project officers who do them (P12 Po15 NRM).

...some of these plans get put on bookcases that are high and no one can get to them again. I've seen that in the NRM, in the adaptation planning spaces as well, how we move to the next stage (P7 Po6 NRM).

Lack of resourcing is often cited as a reason for limited action, but this is not an uncommon situation and begs the questions on exploring more strategic ways of implementing these plans.

We got to a point where there had been an agreement to roll out an implementation phase and we had only really just embarked on that before it was considered that the money had dried up a bit and it should be left to the various sectors to implement (P3 Po7 NRM).

Some commonality across the regions supports generalisation at state level and this has potential implications for the application of MLG.

...the way I think about the plans are there's these foundational things around climate change like engagement and embedding the governance, ... those core things would be similar, if not the same across all the regions (P22 Po6 RAP, PO).

4.4.2. Regional actions for regional actors

While the RAPs were developed at the regional level there were few capable organisations to take on regional implementation. This was reinforced by the development of local action plans within local governments. The intent was that each RAP partner would develop and implement their own local action plans leaving little coordinated regional implementation.

The RH&C Steering Committee did produce a very basic (two pages) Regional Action Plan (Resilient Hills and Coasts 2020). The first page deals with general principles and the second page includes a table of priorities and then short-term and longer-term opportunities against four strategic priorities. A number of actions identified in this Plan e.g., funding a Regional Coordinator, do not appear in the original RAP. There is no reference to the Adaptation Pathways approach.

Several RH&C RAP members participated in a pilot study assessment of climate change adaptation governance within local government. These assessments provide an indication of how well councils are incorporating climate change adaptation governance into their corporate operations and documentation (Climate Planning and

Seed Consulting Services 2019). This pilot produced assessments for Mount Barker Council and Alexandrina Council. Kangaroo Island and Victor Harbor Council followed with their own assessments. The Alexandrina Council assessment provided a high score for their strategic planning (Climate Planning and Edge Environment 2020) and Council established the Climate Emergency Advisory Committee but did not support a motion to fund an Officer in a context where the lack of resources was clearly hindering a range of other related programs.

However, one regional project was identified in the SAMDB RAP - the management of the barrages (as illustrated in Box 4.2 below):

...what is the plan for the barrages and who is around for the plan in the barrages and where is the trigger point for the sea-level rise? At what point do you go, 'OK now we need to - how do you do your adaptation pathways for the barrages?' And then, ... and where do you bring it to there? - so we have, ... so for governance- if you want to talk about a governance process, we have a Murray- Darling Basin Coordinating Committee and that sits within this agency. So, SAMDB sit around that table, licensing people sit round the table, the science people sit round the table, the river operators sit round the table and the policy people from my area sit round that table. So literally it's a coordinating committee of people within DEWNR and in the region that sit around and going what are the things happening and all the rest of it. So, you know, so the operators will bring a spreadsheet going, 'Well how are things going?' (37:46) Murray mouth is this, salinity in Lake Albert is this. You know there's amber light here, there's a green light here and blah, blah, blah. So, we have sort of like you know sort of a - we know what's happening there. Then beyond that there is a State Water Policy Forum. So, the State Water Policy Forum is all the chief executives who have an interest including SA Water that sit round that table who would deal with big higher-level state-wide water issues. And then from there, if there is an issue that has to be dealt with, it will go to Cabinet (P37 Po9 Government).

Box 4.2 Managing the Barrages

The Coorong and Lower Lakes is an internationally recognised Ramsar site and a key asset in the low-lying areas around the Murray Mouth. This area is susceptible to climate change-induced sea-level rise and increased storm surges which threaten ecosystems and infrastructure including the barrages.

The future operation and location of the barrages is one of the most transformational adaptation actions identified in the SAMDB RAP. Managing the barrages requires significant consideration of alternative options and how to sequence adaptation decisions. Importantly, action is not required immediately because sea levels are expected to rise slowly over the coming century. The immediate priority is to commence engagement to increase community awareness and to promote informed debate about the future operations and location of the barrages (Siebentritt et al. 2014, p. 7).

Multiple levels of government are represented: local, region, the state, the Murray Darling Basin Authority (MDBA) and the federal government.

Installed in 1940 to separate the freshwater in the Lower Lakes from the seawater in the Coorong and the Murray Mouth and to regulate water levels, the barrages are part of the locks system that regulates the River Murray across six jurisdictions. Cross-jurisdictional interests and procedures make the management of the barrages a complicated process. A multilevel hierarchy is prominent with the MDBA owning the infrastructure; SA Water manages the site, the State Government manages the water, Alexandrina Council is the local authority and there are substantial interests in irrigation, tourism, and waterfront living. The local community also has a strong connection to the region. The barrages and locks have had significant impacts on Indigenous cultural heritage and connection to country (Birckhead et al. 2011).

The presence of the barrages is also a significant scientific issue with differing opinion about the freshwater/saltwater nature of the Lower Lakes (Gell 2019; Tibby, Haynes & Muller 2020).

During the Millennium drought lake levels fell considerably and substantial work was undertaken in the area in an attempt to retain the freshwater in the lakes and river channel and to restore the environment.

During the RAP process the barrages were identified as the most significant issue in water management; failure of the barrages would result in damaging incursions of salt water. Management options are limited as the maximum height they can be raised is 0.5m, and rebuilding or relocation would entail a major engineering and social project which would take years to plan and implement. The barrages are also getting to the end of their design life, so some action is required in the next decade or two.

Given the importance of the infrastructure and the near end of life management limitations, immediate actions are needed to commence laying the foundations for future options. The size and significance of the infrastructure means it is likely to take decades to gain community approval, engineer the structure, resource (who will pay what) and then construct the barrages. This project lends itself nicely to an application of the adaptation pathway approaches but this was not done in the RAP process. Taking a multilevel governance approach to this issue could provide substantial support in addressing the complex issues around the barrages.

4.4.3. Who has carriage of implementation, monitoring and evaluation, and review?

Implementation tends to be an assumed next step following completion of most plans especially given identification of lead agencies against key actions (Resilient Hills and Coasts 2020) and implementation plans (LGASA 2018, p. 7). Similarly, despite token commenting on RAP monitoring, evaluation and review, there was limited thinking about how this would happen.

...there'll be huge challenges in implementation, sometimes insurmountable.... and there's normally either no budget, or very little budget. And the question is always, where do you even start? And then, there are questions of how you bring other players to the table to put up money and resources for implementation. ...implementation has been a question mark all along. And that's just accepted. It wasn't part of the original funding (P12 Po14 NRM).

So, not a lot (of thinking about reviewing the RAP). Ideally, yes. But how that fits in, I'm still not entirely sure. But the restriction that will always come with the Adaptation Plan will be if we've got funding to concentrate someone's time to do that. So, we've just tried to put together a bit of a progress report of 'Here are all the projects that we're doing that are contributing to the Regional Adaptation Plan' (P21 Po 4 NRM).

Implementation is normally the responsibility of a nominated project officer. If no personnel are allocated it is unlikely to be actioned. When the SAMBD RAP funding for the project coordinator position was discontinued and implementation stalled for several years (P3 RAP).

In some cases, implementation requires some innovative thinking, interpreting existing budgets in more creative ways and using resources for multiple purposes (P23 LG). Implementation then becomes opportunistic. The participation in a governance assessment project (Climate Planning and Seed Consulting Services 2019) could be considered such a project and substantiated based on 'reviewing and improving' governance arrangements (Resilient Hills and Coasts 2016b, p. 99).

The RAPs are a collection of a diverse range of actions which are best carried by specific partners within whose domain those actions best fit. Given the diversity of organisational arrangements, not all actions are carried out at regional level. Organisational specific action plans, e.g., council action plans, would be expected to articulate who is doing what. However, there is no evidence that the action plans would be developed in consultation with all other organisations and that there would be any aggregation of the actions to ensure completion.

...that climate change adaptation plan for this region has a number of recommendations, some of which my (NRM) region can actually pick up and deal with some of which requires other agencies to embed within the regions, regional development, local government ... others are controlled at a state level and the decisions made at a state level. If I want to get bigger, broader scale change and the barrages is one, ... that's where I'd have to use the links in DEWNR to actually get those changes (P26 Po4 Government).

Monitoring and evaluation (M&E) are inherently embedded in adaptive management, adaptive governance, and adaptation to climate change. Adaptation is by definition about exploring what has changed, assessing that change with respect to preferred options, addressing those changes to move toward the preferred outcomes. M&E are therefore critical for meaningful action.

Monitoring and evaluation of the RAP process and the RAP implementation continues the tradition of weak monitoring and poor evaluation commonly found in NRM in South Australia. This is largely because M&E are not valued, and therefore not resourced. There is also a sense that monitoring is time consuming and expensive, data difficult to manage and interpret, and evaluations are not a well understood process. This is despite M&E being one of the enabling processes to ensure effective project management. M&E are poorly addressed in both RH&C and the SAMDB RAPs and as usual left to the last sections. This perpetuates the reduced attention and suggests M&E is not important.

4.5. The State response and the future

The State Government synthesised the RAPs into a state-level Action Plan, *Towards a resilient state: The South Australian Government's Climate Change Adaptation Action Plan* (South Australia Government 2018b). This Action Plan, released in 2018 after the fieldwork undertaken for this thesis, presents 15 action areas with 65 actions and follows the standard bureaucratic approach of a glossy publicity style document, with nice photos and infographics but little substance. Many of the actions fall into the common categories of more plans and strategies, investigations, considerations, and continuation of existing actions, and some from other initiatives and processes, such as implementing the MDB Plan. This approach is consistent with low accountability and minimal reporting.

Positive elements in the response include the four enabling processes: the monitoring, evaluation and reporting action area and capacity building, communication, and engagement actions (discussed in Chapter 6). It also identifies the need for holding regular, twice a year, adaptation forums for sharing learnings, networking, and discussing climate change adaptation (Action 37 pg 28), a need identified at the forum for RAP project officers (PO11, Appendix 5).

The Action Plan highlights the 'bottom up' approach taken by the RAP processes as 'a key success' (pg37). Given the empirical evidence presented, claiming this to be the case does not necessarily make it the reality. The line between rhetoric and spin can be thin. This type of approach reduces trust, confidence, and integrity, and contributes little to the outcomes needed to make the significant changes required. This maintenance of the status quo through these types of mechanisms is partly why MLG is not promoted.

These types of documents are often low on details relating to resourcing and implementation. It is of interest to note that given the early intent in broadening out the sectors and agencies involved by nominating planning regions for the RAP, the Environment Department takes a lead for most of the actions. The 'to be prepared' implementation plan may provide these additional details. However, with the change of government a new direction may be taken and a lot of this will be left incomplete.

The process leading to the development of the state response was unclear, down to how the variance in choice of projected scenarios would be accommodated. Given the whole RAP and this state response process was a new process with recognition of 'learning by doing', better communications and engagement may have been valuable in managing expectations.

At the end of this year [2016] these 12 regional plans will feed up into a state action plan. I don't know how the state is going to compare apples with apples, because some regions have gone with a higher risk, high emission scenario. Some regions have taken the intermediate scenario and it's a 2070 (scenario), so the variances are widespread across the temporal scale. So, the state and regions could have been more collaborative with the State working with this data, so we are going with the CSIRO or Goyder, and we're going with this scenario and 2070, intermediate. When you come to do your local plans, you will either ramp up or ramp down. When you start a new program, you learn by doing, you need to invent it as you go... (P22 Po7 RAP).

The partners' expectations of what would come out of the State Action Plan process was informed by the extent of engagement and participation between the State and the steering committees or their project officers. There was during this period a relatively high degree of turnover of staff in the Climate Change Unit and it appeared there was a lack of clarity on how it was all going to fit together (PO 5). The RAPs were progressively completed from 2013 to late 2016 and the government published the State Action Plan in early 2018.

The State Action Plan was for the State and at best provided some indications of how the regions might implement their plans through reflecting on the State-nominated actions. In any case how actions progressed at State level was always going to be uncertain, being based on political imperatives. The State Government had its own agenda.

I think there is a very strong expectation that the State Government's response to the RAPs, will clearly set out roles and responsibilities, ... for the different levels of government, and organisations because

there are things in our regional action plans that we can't actually deliver. It has to be delivered at a State Government level. So, what we are wanting from them is direction about, 'The State Government will do this,' which then frees us up to focus on X. It wasn't clear for me ... that we're going to get that. ... because there was no resourcing in the budget (P40 Po9 LG).

There is one significant difference between most of the RAPs and the State Action Plan and that is the diversion from the application of the adaptation pathways decision-making process. While the government supports the regions' adoption of adaptation pathways (Action 37 pg. 28), it does not adopt the same approach. Adaptation pathways as presented in RAPs provide a solid decision process which could be seen by government as being fixed and inflexible.

The State response provides limited support for the RAPs and steering committees. The risk of this is that given the RAP's focus on local action plans and responsibilities, and developing partnerships where expedient, the regional approach will become more independent, reducing the need for State intervention and therefore any collaborative development. Like most relationships, the regions need regular servicing and support, and this is a role for the State Government.

The longevity of the RAPs was probably always going to depend on the incumbent government staying in power. With limited resources to support any further developments and probably minimal implementation of many of the actions, least of all any evaluation and review of the plans, the RAPs are likely to become historic documents. The legacy of these plans may be in any new partnerships, new ways of looking at and undertaking adaptation to climate change actions and finally raising awareness of climate change and recognising that actions are possible.

The State Action Plan provided an opportunity to link the regions, in a nested way, to the State-level strategies. This could have been demonstrated by illustrating how, where appropriate, the regional actions could be aggregated up to the State Actions. This would have strengthened the relationship and clarified roles and responsibilities. Building multilevel governance arrangements through these types of projects could provide an important means of consolidating collaborative and adaptive processes and

generating better outcomes. Building the project on MLG principles and thinking would have resulted in a different outcome.

What becomes important is how the systems are developed and supported to evolve into the future.

This is the first time it's been done anywhere in the world, so it's worked in the sense that we got it together enough to do that, which is actually a huge step. There's a big gap between a council level doing it in its own little space, and the state having its lovely big strategic goals here at the top, and actually getting all those stakeholders to talk to each other and the state and develop a plan. ... there's the opportunity to build on that, and perhaps build some more consistency because this process will have to be reviewed. It'll be another ten years. They'll all go through the process again, and the cycle will occur, and we'll learn from what we did wrong the first time. The state will see, okay, whoever went off and did their own thing a bit too much, so we need to tighten the rules on this. I think it's been a very good first pass process. We've all learned a lot in the process (P4 Po4 Consultant).

In 2018 the Liberal Party regained government in South Australia and produced several documents (Government of South Australia 2019b, 2020c; South Australia Government 2018a) incorporating decentralisation of decision making as a priority policy. These policies are discussed further below. The government also developed some new climate change policies which include ongoing support for Regional Climate Partnerships (basically rebranded RAPs) (Government of South Australia 2020b, 2020f). How this collaboration develops, and manifests will be seen in the future.

4.6. Conclusion

So, lessons we can learn for this case study include:

The RAP processes were not developed within any budgetary framework. Essentially the policy was a directive from the State, and the regional steering committees needed

to scramble to acquire necessary resources, including applying for federal grants, to augment the State's seed funding and cover the costs. There is therefore a need to contextualise financing of the RAP, i.e., financial, and human resources, and the budgetary processes of relevant organisations to ensure the resources are there to plan and implement – planning with no resources for implementation is questionable.

Each participating organisation has their own planning and governance processes, and these do not generally align with similar organisations at their level. This makes collaboration across boundaries challenging especially when there are common resources such as rivers and coast lines. This applied to the RAP processes and contributed to a 'go it alone' attitude, an independence or even localism. Incorporating the RAP into organisations' overarching planning context and cycle (within the context of the project cycle) would have facilitated acceptance by the whole organisation and supported implementation. Better alignment of the RAP process may have facilitated better sharing and collaboration.

All organisations have their own policy environments which are influenced by, *inter alia*, what type of organisation they are and their mandates. The RAPs needed to have stronger connections into existing policies and cultures of each organisation. What gaps could, should or does the RAP fill? This includes the state policy context, preferably with bipartisan endorsement to limit the risk of complete retraction if a new party is elected.

Most, if not all, of the enabling processes are practiced in most organisations to some degree. There is often a discrepancy between what is claimed and what is actually done and how it is done. Attendance at public consultation workshops says little about how meaningful, effective, and engaging the process was. The enabling processes tend to be project specific and on the inform or consult ends of the IAP2 spectrum (IAP2 2018) and need to develop toward the collaborate and empower end (Serrao-Neumann et al. 2015). These processes need to be strengthened to enhance their integrity, to operate at optimum capacity and validity, and to increase authenticity.

A base level of networking is maintained to enable actions to be completed. These are often only what is necessary and focussed on the practicalities with little room for creativity and innovation. Networks need to be extended in spread and connectivity. They need to be exploratory and open to facilitate serendipity and alternative approaches. Like most relationships they need to be serviced and maintained.

Existing partnerships are functional and pragmatic to do what is necessary. They are seen as a means to an end and not a valued part of practice and, as with the enabling processes, poorly resourced. Partnerships and other forms of relationships need to be developed beyond the practical and need to be advanced with all partners in the hierarchy even if they are just a watch and act and/or watching brief. They need to be comprehensive and appropriate and go beyond the immediate neighbours.

All participating organisations have their own responsibilities to their members and constituents. They also have obligations to their project partners. It is the responsibility of each organisation and/or level to ensure that their relationships in their networks are optimal, within the confines of agreed roles. It is not the sole responsibility of a particular level to direct the networks. In this sense every organisation is a leader at least with respect to some issues, elements, or components of the processes. Each organisation should have its own processes to ensure the functionality of the networks of which they are part.

Current roles tend to be poorly articulated and performed. This is often due to the roles being badly conceptualised and described and, in some cases, only intuitively carried out. Many organisations tend not to understand their role within the context of the roles of other organisations and therefore where the operational boundaries lie. Roles need to be clearly articulated and, where appropriate, renegotiated. The application of the principle of subsidiarity - who is best placed to take on what roles - needs to be stronger and more transparent.

For several reasons including factors beyond the different characteristics of the twelve regions, the RAPs show a high degree of diversity in approach and outcome. This is partially due to development of the processes supported by the consulting groups and greater awareness of the whole process. The extent to which lessons were learnt from preceding RAP processes is limited and based on direct project officer contact. There has been no obvious broader sharing of experiences between RAP processes and throughout the hierarchy. Inadequate policy development at the beginning of the planning meant the final State-level synthesis of the RAPs was bureaucratic and political.

Given the absence of any organisational capacity at the regional level the use of planning regions for the RAPs makes little sense. Standardising the host and lead organisations would have generated greater consistency across the RAPs and still enabled new partnerships to develop. Ideally a more cross-sectional, integrated, and collaborative model of regional governance would generate better outcomes.

Based on the evidence obtained from the fieldwork and document analysis, the basic elements of a MLG system are clearly expressed albeit weakly. They all need to be named, strengthened, consolidated, and institutionalised. Transformational change is required to develop a basic MLG system.

In 2021 the State Government rebranded the RAP processes into regional Climate Partnerships. As above (policy context pg.12 above), they have also developed climate change directions and an action plan. Future research could explore how the new RAPs have been taken up by the new approach.

Chapter 5: Governance and Governing in Uncertainty

'What I do say is that no man is good enough to govern another man, without that other's consent.' Abraham Lincoln, Illinois:
1854 (Lincoln, Basler & Association 1955)

5.1. Introduction

Governance is the central concept and focus of this research. As discussed in previous chapters, there are a diversity of understandings of governance and what it means to govern. This chapter aims to capture the understanding of governance possessed by research participants, particularly with reference to MLG. MLG is not a common concept in South Australia; so, understanding what governance means in this context may provide some insight into the subconscious rationale underpinning contemporary practice. There is limited direct evidence of the application of MLG, but several foundational practices could develop into a more mature manifestation of MLG if sufficiently promoted and facilitated.

I discuss governance in general to lay the foundation for further discussion, drawing on subthemes that emerged from the data. I then discuss MLG to the extent it was mentioned by respondents and participants and consider multiple levels of governance which have broader acknowledgement, at least implicitly, as well as the notion of subsidiarity. I finally discuss decision-making processes and conclude with a preliminary synthesis of the topics discussed. This chapter presents material generated through the interviews, participant observations and document reviews, as discussed in Chapter 3. Reference is made to the literature discussed in Chapter Two and the case study of RAP. Additional literature and documentation relevant to the findings are also presented here. This material provides the empirical evidence for the interpretation and analysis in Chapter Eight.

Given the nature of the comments made in the next three/four chapters defensible/adequate/ commensurate evidence is provided to justify the comments.

5.2. Governance

Governance has a limited and narrow expression in many organisations in South Australia. This expression is often reduced to administrative and financial arrangements, funding sources, hosting provisions, and reporting and communications. More comprehensive considerations may cover roles and responsibilities and decision-making processes. These arrangements are often described in constitutions, or in terms of reference in informal organisations such as RAP Steering Committees. In some cases, strategic plans and policy documents are cited as governance instruments. Despite this there is minimal discourse around governance, and poor governance practices are common.

In its purest form, governance is the systems, structures, delegations, and operations, ... everyone's got to have a level of governance and decision making authority; there are different approaches, some's collaborative, some's directive (P26 Po5 NRM Manager).

Governance is the way individuals or organisations relate to one another, communicate, and make decisions. There could be governance in, within or between individuals. There is governance between organisations. It's formal or informal. Ultimately, it's how individuals and organisations come together to make decisions (P36 Po13 Consultant).

...governance is generally a framework or a process for decision making. So, it's a set of parameters.... that generally two parties or more agree (are) going to govern a process. So, the rules by which you play. ... arrangements between a state and the region in developing the RAP (P35 Po18 RAP Officer).

That's a tricky question. I guess it's the structures that formalise decision making relationships and mechanisms within and between organisations (P40 Po8 LG).

Other explanations include 'good policies and processes', 'maximum accountability', 'responsibility of Board members' (P1 Community group), 'decision making and what decisions get made at what levels' (P13 NRM).

These statements cover differing levels and their roles, accountability, ethical operations and relations to policy or plans. Many of these features align with MLG characteristics identified from Daniel and Kay (2017) but do not include decentralisation, multiscalar and multilevel, hierarchies and adapting. References to the role of individuals in governance are interesting. Details on construction and function of structures and systems (processes) are not included. A common element is the articulation of governance as 'relationships between organisations', which could be recognition of differences between organisations resulting in different governance roles. These different roles could be hierarchical, as in between state government and regional or local government. Comments on relationships between organisations suggests that some components of governance are external to any single organisation. That is, governance of some processes may not be the sole responsibility of any one organisation. This could be construed as sharing some of the responsibility for governance practices across programmes and projects.

Participants focus governance on organisational structures such as levels of authority and accountability, appropriate management structures, contracts, and employment and who makes all these decisions.

Firstly, everyone gets caught up on the structure of governance, boards, steering committees, working groups. Form follows function. What do you want your governance to do gives you the structure you need. Governance is the way of making good decisions based on applied evidence. Agencies have a governance structure; the executive is about making sure the chief executive knows what's going on. Executives are supported by subgroups, Those subcommittees are not responsible for making decisions. They're responsible for making recommendations to achieve a strategic

direction. The chief executive is the only person in the organisation that is empowered to make a decision. Everything else is sub-delegated. Governance is about the delegation system you put in place; everybody has a governance role. You have the governance structures that you need. You can have 59 kinds of technical working groups, as long as they don't think, at that level, that they're empowered to decide. They're empowered to make a recommendation... (P25 Po18 -19 Government).

Form and function are central to governance. The function is what needs to be done, and how to achieve the governing outcomes desired. In most cases, it is the forms or structures that are referred to when people speak of governance.

Based on the above, institutions do not have a decision making role but have an advisory role, providing information to decision makers. Governance then has two components: one of decision making and one of information provision. These are not mutually exclusive, recognising most people make decisions at their level of operations which includes provision of information to others. These roles are more explicit in MLG where, for example, someone at a regional level might make 'regional decisions', but also provide advice to state-level decision makers.

The people who make decisions, or at least influence the decisions are often not those people ordinarily expected to be making the decisions. Understanding who is actually making decisions can be important in understand what decisions are made and why. Sometimes this results in the wrong people making the wrong decisions. Indeed, the real decision makers are not always those who are expected to be the decision makers (see Box 5.1).

Box 5.1 The Real Decision Makers

In discussions with many people over the years the question of who makes the decisions often arose. The results were predictable: the elected members, the management committee, the CEO. All of these are fine. But are they the only people who do, and who need to, make decisions?

I have seen boards and committees make decisions and be swayed to make alternative decisions, based on information provided to them. So, who decides what information gets presented? Advisors, CEOs, and project officers all play key roles in supporting the decision-making process to varying extents.

In addition, everybody makes some types of decisions (or choices) within their operations level or context and their delegations. The question is who is making what decisions? Are the right people making the appropriate decisions? How does subsidiarity influence answering these questions?

It does not really matter who makes the decisions as long as the partners agree, and the concerns of those who do not agree are addressed. It's about how all the decision-making processes line up to ensure smooth operation and progress towards the desired outcomes and goals agreed to by the participating partners. A diversity of processes is likely to exist.

Governance is also seen as having practical, managerial elements including setting limits on what decisions can be made and communications and engagement. These last two are dealt with in detail below in Chapter 6.

So, things like identifying issues, rating issues, identifying actions, (we) saw that as part of the governance of that project (P35 Po10 RAP).

...more at a governance level, it would really be...bringing that information in... that is, the opportunity for bringing up relevant information exchange... (P9 Po160 Community Group).

...our Board meetings are more about a community gathering, some people get into the detail, and some don't. The philosophy of this Board is very much bringing everybody along and talking to each

other... it's not a Board I'm used to. I'm used to getting on with business. So, I think that's part of the chairing, but when you come to the content stuff, we're pulling back on reports that go to the Board for decision ... part of the weaning process will be that I'll still give them information, but it'll all be for consent only (P26 Po12-13 NRM).

The institutional arrangements during the fieldwork enabled different governance approaches to be explored, not always in an open and transparent way. In one case, differing approaches were taken by different organisations around the same processes. An NRM board and DEWNR had different strategic objectives but did not fully disclose this to minimise potential tensions. This raised issues of roles and control over decisions. Post-integration, service-level agreements (SLA) between these two organisations resulted in competing and conflicting views on how and on what the NRM Board should be making decisions. This was clear during observations of NRM Board meetings (Berri, Adelaide, Goolwa dates). It was neither clear nor accepted by the Board that, because of the SLA, the Board only employed an executive officer, all other staff were employed by the State Government. Part of this conflict originates in the Board being 'community based', where it, *inter alia*, employed and managed all the staff, and not wanting to let go of that foundational principle. This tension was reinforced by the fact that the NRM Regional Manager reports to the Department, whereas the Board reports to the Minister.

Setting up these organisational arrangements is not necessarily straightforward or simple. There are challenges in developing a common understanding of governance, including acknowledgement of the issues' complexity and the capacity to deal with this complexity in uncertain and changing times.

It's a really hard ask to know what the governance frameworks are to actually address climate change when you've still got a whole bunch of the community that don't see it as an issue (P26 Po10 NRM).

...governance arrangements are effectively a complex adaptive system (P36 Po17 Consultant).

There are clearly limited common understandings and capacities of governance and governing and these need to be explored in depth and addressed so appropriate

systems can be designed and put in place as part of standard praxis. Contested understandings and capacities include how to operate in complex and uncertain times, common definitions of governance, and an appreciation of what these might mean for organisational structures and practices such as decision-making processes. The role of governance in the exercise of power, a feature seldom addressed by organisations and research participants, was not completely omitted from discussions during this research.

...governance determines power and influence, and sphere of influence and control (P19 Po19 LG).

5.2.1. Government and governance

Federal and state government is seen as the main governing institution and tends to centralise practice as a means of maintaining control. Government is also not homogenous varying with the chain of command. It evolves and changes in response to political drivers.

I think government's often looking at what is the best way to get governance done, so goes through waves of whether Cabinet should have taskforces or whether they should do everything in the Cabinet table (P31 Po2 Government).

... if you look at who are the paid decision makers in the land. Well, it's Parliament. They're passing laws. They're made up of elected officials. And the bureaucracy is really about making sure that the government policies of the day are turned into action (P25 Po4 Government).

Government operates through a range of structures, committees and working groups. This chain of command is embedded in government mentality. That is, the South Australian Government projects power and control to demonstrate relevance and legitimacy. This does not ignore the significant role that personalities within government play in driving agendas. New leaders often distance themselves from the previous leader by doing things differently, or bigger (P8). This risks a loss of

momentum, restricting further development of impacted programmes and is analogous in effect to restructuring as described in relation to the 'integration'.

...government's governing in the interests of something bigger, or more strategic. Nobody wanted to spend 50 years fixing Lake Albert. That's the time frame we're talking about (P25 Po10 Government).

The SA Government has set up several groups to support their governance (See Chapter 7.4.2).

The Government lacks capacity in not only policy development 'based on good science' but also the implications and implementation of policies, a weakness that transfers into their governance practice.

You get a lot of interactions, or partnerships, at the operational project level. I think the gap is there's a group of fairly senior people that are not well-bedded in the science and the implications of the policy. So, you've got a policy setting that's almost divorced from the implementation. And they're really good policy thinkers and policy strategists, but not really good policy implementers. And so, I would suggest that the South Australian Government probably hasn't done meaningful policy for ten years on adaptation (P25 Po4 Government).

This raises the question of who is best placed to implement specific policies and what interpretations may be required by government or other organisations at regional or local levels. There is a potential gap that could be addressed by a more functional MLG arrangement. Delegation of development of adaptation plans (RAP) to regions may not be prescribed just because it may be better to do so but could also be politically expedient as State Government does not have the resources and capacity to do so themselves. This goes back to negotiation about who takes on what roles.

We have a very strong drive through community involvement in our major decisions. Which means you have a broad base of opinion, to try and work up a policy that fits. And what that eventually does is, it stops government governing. And whilst I'm an advocate for community engagement, decisions must be made. And we have an appointed government that's elected by the citizens to make decisions

on their behalf. And sometimes, governments have to govern. There's a philosophy that is, debate and decide. And I think government is endless debate at the moment (P25 Po4 Government).

Ultimately this all falls back on government and their leadership roles. They are best placed and expected to lead the engagement and negotiations, in participatory and empowering ways to share control, power and responsibility, though they seldom do this. This does not end with a policy of delegation and then stepping back, even though this has been proven to work (P8 Government). More effective results are achieved by more formal and structured ongoing facilitation. This is often provided by project coordinators or officers.

5.2.2. Organisational governance: civic and corporate governance

Organisations govern, not people. People in organisations make decisions and support governing processes and systems, and some individuals are able to influence the systems' outcomes. Even prime ministers and presidents do not govern on their own; they rely on many other people and strategies. Understanding how organisations operate enhances the understanding of governing processes.

Organisations have internal hierarchies, e.g., decision makers and staff, each having their own governance responsibilities. This division reinforces the roles of decision maker and information providers building interdependency between the two moieties. Engaging with members of these two groups requires different strategies, including how they talk with and relate to each other and how they engage with other levels. Most organisations are not homogenous and clear-cut structures and the processes that occur within are not consistent across the organisation. Box 5.2 below illustrates the existing diversity of approaches in organisations. Aligning interactions between organisations can be challenging if there is diversity within them. One way of ameliorating these challenges can be by matching personnel from different levels with their counterparts in other organisations (see Box 5.3 below).

Box 5.2 Variations Within and Between

In researching the governance arrangements, I had originally assumed that organisations were quite homogenous, i.e., consistent with their governing processes. Any variations would be between different organisations. What I did not expect, but found, was that not only was there diversity within individual organisations but that the diversity of processes was just as great within the organisation as it was between different organisations. This seemed more visible in some local governments and probably, on reflection, is present in most organisations, including state government agencies. This partially results from the range of sub-organisational structures and their roles in governance, such as the distinction between civic and corporate governance arrangements.

This raises potential questions around some form of multilevel governance operating *within* organisations such as local government. This may be more an expression of polycentric governance, at least in some levels of government agencies.

Box 5.3 Matching Levels

I was working for a regional NRM board where the Chair was also the mayor of the local council and a local pastoralist. Through these roles he was well connected to other regions, councils, and state government agencies.

When he had important meetings with these organisations he always 'matched' the team that he took to the meetings. He, as chair, could then engage with the other chairs, the CEOs could relate to the other CEOs, and the Managers could talk about how to get things done. This way he covered off on all the levels and this facilitated any negotiations and transference of lessons into the NRM Board.

Local government and other institutions operate with several distinct but related governing processes. Navigating between these sub-systems becomes an essential part of operating within the whole governance systems.

...with adaptive governance frameworks in the local government context, there are very distinct points of difference between the civic governance, in the elected member body, and the corporate governance which is very much administration. In interaction with the elected member body on policy advice, strategy, getting decisions for resourcing, I work to the executive to get formal decision making. The CEO's accountabilities are all to the elected members. So, he's constantly making sure his performance criteria are met, managing down, but you have to engage firmly with the elected member body. So, both civic and corporate governance are really important. If you're a project officer in the field, you wouldn't necessarily give a (expletive) about civic governance, many don't, except to ensure you have the pathways to get the resources you need to keep operating (P19 Po20 LG).

I see it (the committee) as an essential function of the body of the (organisation), it's more a ratification function, without the (the committee) it would fall to bits, because it needs that community saying, 'Yep, what you are doing is a good job, we are going to support you in every way.' So, (general manager) has an authority to bounce ideas off (P5 Po8 Community Group).

The application of some governance tools can require multiple levels of application, even if final responsibility resides with the head of the organisation.

I can imagine various governance tools that might help redress that; if every decision of government had to pass through a climate change lens and the person who was in charge was the Premier and their budgets depended on it, in theory I can imagine how such a system might work. How that would happen in practice, I don't know, people might just roll their eyes and say you've never worked in government;

these people have been building fiefdoms over decades, they are not easily dislodged... (P11 Po8 Elected Member).

Exploration of local government as a microcosm makes the systems and structures more easily visible and understandable. Zoom out and these relationships become less obvious and relevant. Simultaneously other relationships emerge into greater significance. The internal relationships recede, and inter-organisational relationships take on greater prominence. This illustrates how the essential characteristics of MLG principles, practice and structures surface and strengthen providing an opportunity to resolve governance processes. Understanding how the systems operate requires using the right lens to get the relevant resolution to focus on particular parts of the systems. The connecting threads between the layers are the means of interaction and require a degree of consistency to enable access to all connected layers.

5.2.3. Regional governance

As discussed in Chapter 4, the regional level of governance, with respect to RAPs, was poorly defined but unencumbered by legislation and formal statutory responsibilities. While this leaves regional governance open for a plurality of manifestations it does present some challenges, including ensuring an adequate level of consistency across the state. Regional boundaries change, and this can impact on governance approaches, e.g., SAMDB and ALMR (RH&C re KI) and more recently (2019) the new Landscape Boards (South Australian Government 2018).

The regional administrative boundaries used for the RAP's were adopted by the Prospering in a Changing Climate policy (South Australian Government 2012). This required (re)defining new governance arrangements as each RAP had differing contexts and generating differing roles for different partners. These roles evolved and developed over the planning process. This was the first time many of these partners had worked collaboratively on a single process. However, it was unclear who would implement the RAPs as there is no implementer at that level (P16 Researcher).

The ephemeral nature of the regional approach has also generated insecurities and uncertainty with a loss of coordination and consolidation. Cooperation occurred where everyone was going in the same direction, and this changed with time and differences

in regional drivers. The autonomy of the regions allowed some discretion regarding their governance arrangements.

...is it the role of the NRM Regions to decide what that governance model looks like? I guess it depends a bit on whether you're a top-down or a bottom-up sort of a person (P20 Po8 NRM).

One of the key reasons for developing the regional levels is that it recognised that this allows for appropriate representation of landscape characteristics.

...at the regional governance level where we can make the most difference to landscape and environmental and industry because the farming industry sits in the landscape, natural resources is as much about farming as it is about anything else... (P7 Po4 RAP).

This raises the concept of matching governance arrangements with the land use and the ecosystem (Ostrom 2007) (and P7). The southern Eyre Peninsula, for example, a low rainfall region with hot summer temperatures, is ideal for cropping and grazing. Uniform land management (cropping) by individual farmers in this region aggregates to a landscape level and this informs social structures and functions, including the functioning of regional institutions. Whether the level of discussion went down to defining regional characteristics and then using this to define the boundaries of the RAPs is unknown; it is more likely that the planning regions were based on the current map of local government boundaries.

5.2.4. Adaptive governance

Adaptive governance is not a common topic when governance is conceptualised more as institutional arrangements than processes which need to evolve and adapt to emerging contexts. Interestingly adaptive management is common in NRM, though spoken about more than practised. This limited practice links back to poor implementation of the full project cycle (plan - act - monitor – review...). We may be good at planning, mediocre at acting, but we are very weak on the monitoring and review steps.

If we talk about adaptive governance, that's around being less linear and fixed in your approach and constantly reviewing, ... are governance arrangements right for the types of questions you're needing to answer and that is about growing knowledge, our understanding is changing, what's right today might not be right tomorrow Theoretically our planning was informed by adaptive governance thinking, but what constrains things is how much time anyone's got, to think about anything... The resilience approach is strong on adaptive governance and making sure the different knowledge types inform the thinking and that you have the feedback loops (P13 Po10-11 NRM).

Resilience planning in regional NRM has strengthened 'planning-by-doing' (Mitchell et al. 2014), i.e., adaptive planning and adaptive management, but is not translated well into adaptive governance. Institutional changes have resulted in changes in governance arrangements but mostly changes in relationships and administration rather than innovative creative approaches designed to enhance governance capacity (Chaffin, Gosnell & Cosens 2014).

Who is responsible for leading adaptive governance? As with other practices the state is identified as a key leader.

I really do strongly see this state role ... is part of adaptive governance, to have that strong framework ... to be able to feed in the knowledge and ultimately frame policy and regulation that actually guides that space at the bottom where we make all the decisions, without them imposing decisions (P7 Po10 RAP).

The application, or lack of adaptive governance has implications for what capacities need developing by different organisations to demonstrate effective governance and proactively evolve and respond to emerging contexts.

...in futures thinking you've got to break the lock into the current of the past, and then understand how it might change, and the consequence of that. That is a dimension of governance. Is your organisation able to do that? Has it got the knowledge, the willingness, the values, the

freedom to do it? That's really governance. If your organisation needs to change, has it got a process to do that? And we call that adaptation governance, which is different from adaptive governance (P17 Po3 Researcher).

Knowledge governance. the evolutionary learning has four steps, or principles.... One is around concepts; the second level is context. So, you put the concept into a context. Then, you elaborate on the concept in the context and then you have a reflective community, which is context-specific, which is doing the learning. So, being reflective about your practice is one of the principles of interdisciplinary science..... it will take on different meanings, through that, it can become a boundary object, which is good and bad. It means people can talk to each other, and rally around something, but it means they can talk past each other by thinking they mean the same thing when they don't (P17 Po9 Researcher).

These quotes augment practical understandings of governance by looking forward, being fully aware of current contexts, visualising future contexts and learning for change and transformation (Hertz, Mancilla Garcia & Schlüter 2019).

There are also constrained notions of learning. Many organisations do not want to be 'making mistakes.'

...with climate change, we need to have the ability to make decisions locally. We need to have support, not to deliberately make wrong decisions, but inevitably wrong decisions will be made, and we can best learn from them... (P32 Po19 NRM).

In addressing the constrained governance, limited governance training is undertaken, reduced in one case to annual sessions covering administrative and institutional aspects of governance. There is then a quantum leap to more rigorous training provided by, for example, the Australian Institute of Company Directors. Collectively these provide some basis for an adequate understanding of governance, but it is often the governance praxis that is basic.

...(organisation) has got lots of governance arrangements. We do our governance training on a regular basis, and we have it in terms of financial management and staff management and occupational health and safety and all those sorts of things, but governance in terms of our strategic objectives is something we do less... (P2 Po4 Community group).

5.2.5. Government restructuring - changes and transformations?

In 2010, the Department of Environment and Heritage (DEH) was 'integrated' with the NRM division of Department of Water, Land and Biodiversity Conservation (DWLBC) (South Australian Government 2010). *Inter alia*, this meant the NRM boards were subsumed into the Department of Environment and Natural Resources (DENR) and all NRM staff became government employees. The NRM Boards themselves, i.e., the governing component, were retained (each having 10-12 ministerially appointed members) and had oversight of the implementation of the regional plans through a service-level agreement (SLA) with DENR. This restructuring had significant and longer-term impacts on staff and governing arrangements. DENR was subsequently restructured to DEWNR* by adding water to the portfolio (note: * DEWNR is used here as the fieldwork occurred under this arrangement).

Its (integration) had a big influence on that understanding of different roles and responsibilities and... power's not the right word, but ... decision making capacity ...that has had quite a big impact on understanding of who decides what... (P20 Po9 NRM).

...(integration) had multiple impacts on the organisation... And we've been having to do that for a few years because we haven't had a clear line of sight... I always find having that governance, that planning hierarchy, extremely important to be able to line it all up (P21 Po12 NRM).

It is not necessarily the restructuring that is the challenge but that it happens regularly, and the way it is done. The restructurings often result in confusion, dislocations, new relationships, and uncertainty, offering limited constructive changes or 'upgrades.'

...(in) a review of the governance. It was one of the top five priorities – get the KPIs sorted between DEWNR and the Board. I've been saying this for months and it's one of those things the Board is just struggling with (P32 Po13 Government).

The Board reports to the minister, not DEWNR. DEWNR contracts to the Board and this is where this power dynamic is frustrating DEWNR because they think they know best. They are the experts. Why should they let a bunch of country bumpkins tell them how to spend the money? (P32 Po19 Government).

...the second phase was the development of the adaptation plan itself for which the group secured further funding from DEWNR, Safecom and each party, and then the governance arrangements changed at that point and no longer auspices by (organisation) but moved to the local council (P22 Po3 RAP).

These restructures and realignments (of boundaries and relationships with other agencies) is common in NRM in South Australia. Similar readjustments take place at the federal level especially with respect to funding programmes (Head 2009). These adjustments are not only driven by changes in government - climate change action can be mapped against incumbent governments – but also shifts in leaders within the same party, changes to senior bureaucrats and other key positions such as regional managers of NRM Boards.

The outcomes and impacts are part of a continually changing operational context, different internal and external organisational arrangements, new relationships, and partnerships, often with differing values, priorities, and new processes. Differential rates of change mean some levels and some personnel become more like boundary operators (Bednarek et al. 2018) attempting to reconcile the new changes with features which have remained the same, such as community groups. This is particularly relevant when working with indigenous communities. Given the discourse on governance arrangements and practices is slow to respond, the relevance and importance of adopting an adaptive governance approach becomes even more critical.

5.2.6. Agreements

Agreements can be interpreted as part of or contributing to the 'rules of operation' and defining the relationships between participating organisations and how they conduct their respective businesses.

...there was an agreement between the four councils, and it included the roles and responsibilities of each of the councils, and conflict resolution and funding, and work schedules. There was also the establishment of this program management committee which had representatives at the management level from each of the councils, and the project coordinator as the chair of that committee, and a project lead. So, basically someone for the project coordinator to report to as one person rather than four managers. There's also roles and responsibilities for the members of the program management committee basically saying the committee could make decisions about the project to develop the regional adaptation plan within the scope of the project, and that included funding and objectives of the project (P35 Po9 LG).

...we have a heads of agreement document, which is signed off at CEO level. And that kind of sets up the governance for the project.... But anything that's outside of that needs to go back to our individual councils. ... There are all sorts of things that we can just make decisions about in there (P23 Po12 LG).

Sector agreements as described in Chapter 4 are voluntary and non-binding. They provide a statement of intent and show of good faith. These are further acknowledged as governance instruments.

But in terms of creating a governance structure that stuck, that was the real value of the sector agreement for (Region), ... This forced us to work together. It nominated who was going to work together, what we were going to work on, created the governance and the outcomes that we needed... (P0 Po10 Other, previously Government Officer).

5.2.7. Coordinator role

Coordinators are key players in many projects and often delegated responsibilities beyond their roles. This extends to providing advice to decision makers and actually making decisions at some level. In many RAPs the only employee to support the process was the coordinator, so a lot of authority was delegated to them, including working towards consensus wherever possible. Most Steering Committee members represented their host organisation and were guided by their organisation's policies and their managers; they therefore had less responsibility than most coordinators. RAP project coordinators therefore played important roles in the governance of the RAPs.

I think the coordinator role ... it's quite critical. It will be interesting to see what happens now we don't have a coordinator. We've got good governance around the project management; a coordinator role was important in the planning and engagement phase. The risk now is that the project falls victim to competing priorities. Everybody is overly busy and if you don't have a dedicated resource (coordinator) it becomes one of many things and then it's at risk (P19 Po12 LG).

Coordinators require skills in operating along a fine line between 'decision makers' and advisors and leading or following. As many of these institutions have poor governance practices (P24) the coordinators are often called upon to implement strategies to facilitate decision making (P22). In some cases, the project coordinators also chair the meetings. These coordinators are generally critical in driving project development and implementation, and when they leave or get reassigned the project shuts down (P3). There can be a downside to this as coordinators can be 'blockers' and steer processes in specific directions. The Local Action Planning associations were developed with a coordination body across the LAPs. The CARE Team (see Box 5.4) was designed to share experience and develop partnerships but did not always function as intended. Box 5.4 below presents an example of where the intent is there, but it fails in implementation.

Box 5.4 The CARE Team

When I first started working as a LAP Officer, I became aware of an internal group of LAP Officers called the CARE Team. This Team originated from the development of the Local Action Planning approach during the early 1990's – CARE stood for Community Action for the Rural Environment. In speaking with one of the other LAP Officers I asked about the CARE Team; what it was and what it did. The response was not encouraging; 'Don't worry about the CARE Team,' she said, 'nobody cares, and it is not a team'. I granted her opinion and left her to it!

Later I caught up with one of the neighbouring LAP Officers to explore opportunities of collaboration and coordination. He said the LAPs don't work together and showed no interest in discussing it further.

Many constructive initiatives dissipate because of a lack of communication, engagement, resourcing, and adaptive capacity. In time these initiatives are forgotten and then reinvented wearing new clothes.

5.3. Multilevel Governance in South Australia

Consistent with the limited literature on MLG in South Australia there was minimal response from interviewees. However, there was recognition of 'multiple levels of governance' (see below) mostly by state-level participants. Multiple levels of governance are more a representation of the three constituted levels of government in Australia: federal, state, and local rather than some broader integrated interpretation of MLG. There is some consideration of the regional level being a governance level (see Chapter 7.4).

A document review identified no reference to MLG in South Australia. However, there has been an interesting recent development by the current (2020) State Government illustrated through the new Landscape Act (South Australia Government 2019), and related policy documents (South Australia Government 2018). This is the inclusion of 'decentralisation of decision making' (South Australia Government 2019, 2020a, 2020b) responding to 'the problem' of 'a gradual centralisation of staffing, resourcing and decision making (eroding) public confidence...' (Liberal Party South Australia, no date).

The only participants to discuss MLG were national researchers presenting some appreciation of the application of MLG in South Australia. However, co-ordination of decision making across levels was acknowledged as common practice by several interviewees (see Chapter 6). This suggested there may be value in taking a wider lens to exploring potential elements of MLG.

...multilevel governance is being developed to achieve the ideal of decentralisation of decision-making; local people know local issues best, and if part of a decision-making process, with real formal roles and responsibilities, agency, and mandate, you should get the best outcomes in terms of decision-making. It's that devolution of influence and power to the local. Local doesn't operate independently, where you have larger scale, strategic types of decisions that cut across different local contexts, then you need other decision-makers mandated to do that at slightly higher levels. So, multilevel governance enables different levels of activity to be coordinated by different decision-makers with different roles and responsibilities and levels of power. Ideally you get conversations happening across those levels; flows of power, information and money have to happen across those levels and that's multilevel governance (P16 Po 1 Researcher).

It has to happen collaboratively... all the key players come from the main pillars of society: community, research, business, and government. They all have a role in negotiating roles and responsibilities. Roles are also varied depending on context and problem definition. So, this is the whole adaptive governance thing.... the decision about whose roles and responsibilities they are comes out of a good process of multilevel governance (P16 Po 2 Researcher).

MLG embraces decentralisation, participation, subsidiarity, negotiated and formal (clear) roles, devolution of authority, coordination, levels of power, and adaptive approaches; many of the characteristics identified by Daniell and Kay (2017). These features are found in organisations involved in adaptation to climate change, but they tend to operate in isolation and under the radar. That is practitioners, while aware that

they are undertaking these (governing) processes, do not articulate this in a cohesive and integrated way that generates synergies and better outcomes. This leaves a sense of discoordination and that more needs to be done to enhance governance practice.

There are some basic elements, and prerequisites, that are either missing or underdeveloped.

'I don't think they've got the roles and responsibilities clearly identified and appropriately allocated for actors within multilevel governance arrangements. So, people have been put into certain roles, around strategic decision making, strategic planning, and investment decision-making. But they haven't been able to define the problem properly (P16 Po 1 Researcher).

Roles are often only described through personnel job descriptions, conceived of during recruitment. Roles are considered in isolation and not within broader contexts of others' roles within an organisation in a way that illustrates operational connections. This extends to the roles of organisations which often develop from a series of path dependencies and not in relation to each other. That is, organisations continue with past practices. This lack of contextualisation results in gaps and overlaps across sectors.

This lack of clarity applies equally to defining 'the governance problem' – that is, we don't clearly define what governance is or should be (Mogensen 2013), especially within the preferred 'decision context'.

We need a better diagnosis of the problem, So, we need to actually spend time trying to diagnose that, through a multilevel, multi-stakeholder process, and we are not doing that well either (P16 Po 8 Researcher).

There are several examples where MLG could be implied, though not developed to enable implementation and they often have weaknesses (OECD 2019, p. 6).

The codeword the Commonwealth uses is the whole COAG they talk a lot about the connections between Commonwealth, State, and

local government levels and then there's a regional scale of governance (P18 Po 1 Researcher).

So, there is limited debate about MLG, and about governance in general.

The transaction costs of these conversations are high. People glaze over when they hear the word governance. They don't understand it; different people use it differently... and because we've got people from different backgrounds, and different problem definitions, you would need a long process of building a shared understanding of governance and multilevel governance. Often, it's because we don't have the people representing the different levels of decision-making (P16 Po 2 Researcher).

People do talk about the need or failures of coordination amongst levels. We certainly need a lot more thinking about that. A major issue with multilevel governance here is that it is not that it doesn't happen or shouldn't happen but that it happens very grindingly slow (P18 Po 2 Researcher).

Why don't we talk about multilevel governments? ... It (MLG) is a challenge not just for us, but internationally. It can drive a huge amount of good will and help you to clearly identify who has responsibility (for) what, so you're not duplicating and having gaps (P33 P11 Government).

What's stopping everybody lining the ducks up in a row? It's some of the information, knowledge, the motivation, and the capacity to change (P32 P12 NRM).

Part of this discussion is making sure the right people, in the right level are making the decisions they are best suited to make and how are these decisions delegated to the appropriate level. Who makes what decisions seems to be determined by those chosen to make the decisions (see Box 5.5).

Box 5. 5 Who's Making What Decisions?

Interviewer: So, this goes back to that phrase you said to me nearly two years ago around the people who are making the decisions are not the right people to be making those decisions. That's stuck with me, and I keep on coming back to it; who are the right decision makers and how is that negotiated? In terms of multilevel governance, it's a continuously negotiated process, where those various levels talk with each other, people on the ground talk to the people in the middle who talk to with the people above them. So, for me it goes back to, which level is best placed to make what decisions? Which people should be making what decisions and who decides who makes what decisions?

Interviewee: I think that is right.

Explicit discussions around MLG in South Australia are non-existent. As discussed, many MLG characteristics are fundamental to current practices across most sectors. Independently they are necessary but not sufficient to constitute a more complete MLG system. Why this is important is dealt with in Chapter 8.

Do I think it's working well? I do, because most of those decisions or things people do tend to settle at the level that they need to happen (P31 P6 Government).

What is presented here, then, illustrates the foundational activities currently being practiced in South Australia which have the potential to mature into a more conscious and comprehensive MLG system. The results illustrate current thinking and governance practice in what is clearly an evolving and developing field.

So, it's the people on the ground who know what works. They are going to learn first about climate change. They are going to be able to test options. And they need to be enabled by those above them in the hierarchy. I think there are patterns of behaviour, unwritten, implicit rules of multilevel governance, that determine how people respond to a new challenge (P17 Po11 Researcher).

Current practices still have value but maintain the status quo. There are clearly opportunities to enhance current thinking such as the emergence of decentralisation in the current Landscapes approach. This will be discussed in Chapter 8 'Discussion'.

A better understanding of multilevel governance, and interactions between these systems of governance would help with the discourses. Most people, operationally, don't need to know that multilevel governance exists.... We talk about decision context, the level you operate at. It is the result of all of these other levels who interact with you and provide you with information within which you can operate. In your decision context, you have freedom, you have agency (P17 Po 8 Researcher).

Institutions are a tiny subset of the connections that happen in a multilevel governance system. In a static world, that's fine. When you start perturbing systems, you're pulling strings, some you know, and others you don't. It's all those hidden connections, like changed legislation means bad for the environment; consulting the community means they want more access, ... multilevel governance is the answer to that problem. Should we all be talking multilevel governance? One of the narratives is that this is too theoretical, and we need practical examples of how to do it. So, talking just makes it more theoretical. Learning and governance and who needs to learn what, that's the language I use to describe governance, multilevel governance, change in governance (P17 Po 11 Researcher).

This last point is addressed by the empirical focus to Daniell and Kay's book (2017).

It's interesting you are looking at multi-layers of governance. A question is, 'are consultants a layer of that governance?' In SA they've started to become a layer of governance. We are becoming advisors. People ring us for advice. We are connectors, we know people. I tend to know a lot more people across local and state government, who needs to speak to whom, than many others (P28 Po 13 Consultant).

5.4. Multiple levels of governance and/or government

The issue of multiple levels of government was raised by several participants. Multiple levels of government and governance are differentiated from multilevel governance by, *inter alia*, the limited connections between levels and the ways they work together.

Several MLG elements are expressed in multiple levels of government. However, their translation into practice is limited and limiting (P18), e.g., superficial engagement reducing trust. With the absence of other critical elements of MLG, current manifestations of multiple levels of governance do not warrant justifiable application of the neologism MLG.

...it's chaos because there are multiple levels of government. You've got many levels of government (where) the greyness, (the) points of separation between roles and responsibilities, is problematic (P19 Po5 NRM).

I feel like we've got multi-agency or multi-factorial decision making happening at every level (P31 p10 Government).

The separation of multiple levels of government and MLG is justified on the empirical evidence. This separation is not universal, some instances of multiple levels of governance may be expressions of MLG. The assumption that multiple levels of government necessarily constitute MLG is rejected.

Bednar and Henstra (2018, p. 147) and Bednar (2018, p. 18) equate multiple levels of government with multilevel governance. However, Henstra (2017, p. 378), in discussing adaptation governance, highlights similar challenges to those found here, suggesting that 'authority and resources are fragmented among numerous public agencies, (and) multiple levels of government'.

Acceptance of multiple levels of government originates from the three tiers of government, which are not necessarily independent (P15 Po14 LG) (O'Donnell et al. 2016). Regional entities (e.g., NRM Boards, RDAs, RAPs), considered by some as an additional tier of governance, are included in future discussions. Multiple levels of government are presented as each level having their own domains, contexts, and some degree of control over financial resources. Multiple levels of governance, and

more specifically multiple levels of decision making and coordination, may be more of a directive than collaborative and voluntary; driven from the top down rather than negotiated.

5.4.1. Organisational independence

What's missing in multiple levels of government but is part of MLG is 'the whole beside the parts' (attributed to Aristotle, see Martin 2019). MLG is an emerging system; multiple levels of government are primarily institutional, operational, transactional, opportunistic, and administrative - there is no cohesive systemic whole. Multiple levels work together because they must.

Multiple levels of governance are a function of the siloed culture organisations develop and are influenced by organisations' approaches to work, e.g., top-down or bottom-up or both.

...a lot of the (NRM) Board's work is ground up and a lot of the DEWNR is top down... (P26 Po 1 NRM).

...climate adaptation needs to happen at different levels. Some things might be best addressed top-down, and there are some things which are really about getting local communities together and saying how you're managing this. I don't think you can have a one-size-fits-all (P20 Po7 NRM).

Multiple levels of government can strengthen hierarchies and their power structures, separate functions, reinforce silos, increase competitiveness, duplication, and reduce broader stakeholder participation and communication flows especially from the bottom-up.

...one of the key pathologies is where these systems are hierarchical, they need to change upwards, (but) the information flows don't facilitate that. The people on the ground know what works. But all the people above them in the hierarchy want to know is that they achieved the output. Did they spend the money? Did the fences go in? They're only interested in accountability not in how the systems works and

changes, what should or could be done, how and why. So, there's a whole lot of learning that needs to go up, and we don't have systems for that (P17 Po 9 Researcher).

...obviously, nobody's in a vacuum. So, everybody works with other agencies. The question is how do you know that they're doing enough of it? (P12 Po8 NRM).

Different levels of organisations use different systems and subsystems in different ways (Taleb 2020, p.41). Overarching consistency of governance requires an understanding, acknowledgement, and mindfulness of the systems of all the organisations within the hierarchy and network. Organisations develop a wide diversity of operations that often conflict and are counter-productive.

So, the people writing the legislation need to engage with the tree planter. And the tree planter needs to be aware of the legislation. They can't break the rules, or they won't get the money, again. If there was to be a natural categorisation of different sorts of questions that are best suited to different groups, layers in the hierarchy might not be the right access to do that (P17 Po 10 Researcher).

...the guys putting up drift fences or the break walls, they've got a lot of hands-on knowledge that you can only get from having rebuilt something three times. They can see a clear pathway to doing it better, but they don't have the opportunity to feed that up to the higher levels of engineers. Because there's this hierarchy and a terrible culture where the engineers don't talk to the parks and gardens guys, and they don't talk to the environment guys. And so, the engineers are drawing up all these things with absolutely no or little input from (officer) who could have some really meaningful things to offer (P14 Po10 Community group).

They're seen as a third tier of government that is separate from the state government, and independent, but it's not. It's not independent at all. It is entirely controlled by the state government, and so, state

government can create the local government as it sees fit (P15 Po14 LG).

...there's autonomy within each region to develop their own plan, but the influence of governance processes from the top down weren't strong enough. The regions were all vehemently wanting to be independent and focusing on what was important to them and engage the consultant they liked (P4 Po4 Consultant).

Current practices of separation of organisations, accompanied by institutional myopia and parochialism, divide communities and society, reduce collaborations, and dilute outcomes. This results in a loss of shared learning and adaptation, strengthens protectionism, and narrows successes. The pervasive nature of climate change, impacting across scales and levels, provides multiple opportunities to be reflexive and creative in learning lessons for others and from past experiences, including disasters and pandemics. These opportunities are lost in the current paradigm where organisations distance themselves and engage one on one.

5.4.2. Organisational roles

Organisational roles are constrained in multiple levels of government contexts but still require clear definitions. MLG facilitates continuous negotiations of roles promoting a common understanding.

Every organisation has different roles, ... federal government setting national policy, states setting state policy, NRM Boards looking at regional areas, councils managing their assets and (community group) with a focus on ground works with community ... There should be some sort of cascading down from federal to state, to regional (P2 Po5 Community group).

...state government really needs to know what it's responsible for and this relates to every level ... so, federal, state, local and organisational, individuals need to understand their risks from climate change (P33 Po15 Government).

Now we've done the (RAPs), what's next and how do we start implementing and what is the role of local government? What's role of NRM boards, of State Government, of the Commonwealth Government in delivering on it? (P37 Po11 Government).

Role development and change have several drivers. External requirements (e.g., funding) may push some organisations into reviewing their roles to address the needs of their partners. Role definition of public institutions is not entirely based on their own interests and needs. They also need to convey the practical outcomes of their roles in terms that are relevant to their partners. Failure to do so may result in unrealistic expectations emerging.

So, we're relying on the State Government to (bring the RAPs together) in their response, but if they don't, the regions will have to come together and say, 'This, State Government, is what we need you to do' (P40 Po10 LG).

Currently organisational roles can evolve and develop rapidly. However, changes based on unique positions and circumstance can be ephemeral. They can lack consolidation and institutionalisation; changed roles do not necessarily translate into changed long-term practices. This impacts on processes of building relationships between organisations.

Associated with any role is the responsibility to act in a manner that is consistent with that role. The State Government, having established the RAP policy and framework, has a responsibility to follow up and follow through promoting good governance. Sometimes participation does not imply commitment by the right people at the appropriate level.

I think there was a phase missing from the planning and that is a very deep dialogue where it says, 'X agency' says, 'This is what's come out of the regional planning process. Your agency is identified as lead to do X, Y and Z. Let's really talk about that.' In the sense of not committing dollars but to say, 'Do you understand why that's come through? Do you endorse that?' ... And the intent is that by

participating in the process you have ownership of that. Many players do, but are they at the right level? (P36 Po14 Consultant).

Part of participating in processes is supporting (re)defining organisations' roles with respect to other participating organisations.

...the LGA had a big influence in driving this (RAP process), but the council is one very small part, and unless you're going to get the RDA, the NRM boards, the health department, the police department at these stakeholder meetings... there are going to be big gaps, so bring them all to the same level, at the same time, and then you have a process that has its own governance system (P4 Po9 Consultant).

The separation of roles results in the loss of organisation-wide collaborations. In the absence of organisation-wide networks, individuals develop their own networks which they need to fulfil their roles. But not everybody can or does speak to everybody and not every organisation can or should engage with every other organisation. Functional, nested systems need to be set up across and within all levels and sectors to facilitate this. The lack of resources, time, and funds are often cited as barriers to these systems, but those are the key reasons why these systems are needed. For example, a steering committee to oversee the development and management of wetland management plans in the South Australian Murray Darling Basin, instead of promoting collaboration reinforced government control by controlling the committee. Government run committees can control who has access to what information and this limits community's access to resources (see Box 5.6).

Box 5. 6 More Meetings... Secret Wetland Business

Effective, continuous communication practices are critical in facilitating genuine partnerships but are often missing. One way to find out what was happening was to attend as many meetings as possible.

In the NRM sector, notes and minutes of meetings are minimal, often presented as redundant administrative necessities. They are not seen as tools for sharing information and building relationships. There is also a tendency for a 'each person for themselves' type mentality.

To get around this the CARE Team (See Box 5.4 above) nominated representatives to attend meetings and to report back.

One such series of meetings of The Wetlands Working Group supported the planning and implementation of projects re-establishing natural hydrological regimes of wetting and drying in wetlands. These wetlands were historically ephemeral with annual flooding and drying. The installation of the locks and weirs turned the River Murray into a series of lakes and the ecosystems were then subject to permanent flooding or droughts.

A CARE Team rep was appointed and attended meetings, providing salient points back to the Team. It became apparent that what was being fed back was heavily redacted. I requested copies of the agendas and minutes and person concerned had to get permission from the government chair. This was initially denied. I pointed out that she was supposedly representing our interests, and this was difficult if we did not know what was being discussed. It took several months of to-ing and fro-ing to get most, but not all, of the minutes.

To address this issue and to limit future deficiencies, I drafted 'roles and responsibilities of representatives' guidelines. I presented these to the CARE Team for comment and feedback with the aim of seeking final endorsement. After six months these were still not approved, and it became clear that they never would be.

The government command and control position and the protectionist self-interest of the LAPs prevailed, maintaining the status quo. Change can be difficult!

Current organisational roles are both a function of separation and a driver of separation. A multiple levels of government perspective rationalises the partnerships by enhancing silos, entrenching independence, and self-interest. Organisations therefore look to their own, seeking mechanisms which reinforce this and set up structures and procedures to match this. Their interactions with other organisations are by necessity and contractual. This divides efforts and minimises synergies.

5.4.3. Working across levels

Working across levels is fundamental to both multiple levels of governance and MLG. Understanding these collaborations is central to intervening in future governance practices such as transforming multiple levels of governance into MLG. Having confidence to influence future directions promotes ongoing participation.

Operating within institutionalised hierarchical structures and processes provides a framework for engaging with the systems at multiple levels. Understanding an organisation's place and role in the hierarchy assists defining its frame of reference from which it can connect with other components of the system and other systems.

...that foundational planning hierarchy, defines your baseline and the processes of reporting up and down the hierarchy (P21 Po6 NRM).

All NRM Boards are all doing the same thing, but in bits and pieces. The agencies could be more efficient and effective if we had well-funded cross-cutting programs (P32 Po9 NRM).

NRM Boards are considered by some agencies as introspective and fragmented and that other agencies such as PIRSA, given their state-wide mandate, could be more strategic and holistic bringing together a diversity of programs in a consolidated framework. This helps define the state - regional relationship by highlighting different perspectives based on spatial and jurisdictional parameters. That is, agencies operating at state level have the responsibility to oversee state-level business, including synthesising and consolidating regional and local plans and practices at a state level. Regional organisations need the state level (Mackay et al. 2020). The

RAPs and State Action Plan (South Australia Government 2018b) provide an example of this oversight role.

...you look at something like sea-level rise and the response should be national and clearly sits in the regulatory space at state-level and the issues, while they may vary regionally or locally, are essentially the same... (P7 Po11 NRM LG PCCC).

Delegation and/or allocation of responsibility for adaptation actions has spatial, jurisdictional, temporal, economic and historic bases dictating which level is responsible for what decisions at what times. Pre-existing expectations inform what roles different levels take on; state government is often expected to take a broader strategic leadership role, local government works more with community. There is no single correct answer at any one time. Flexibility and change characterise adaptation.

...state governments aren't trying to tell or resource local governments to deliver programs in this space. Sometimes federal government deliberately says, 'We can't deliver it, so we'll push the money to councils.' So, they jump a level to do that... Sometimes they see local as their delivery arm, but it's still their policy and their money. And how much is that 'Here's our climate change strategy, you go do what you want with it,' adequate? And how much is, 'No, no. There's something to be gained from working in partnership with the levels?' (P0 Po16 Other ex-Government).

Local government has been a real champion; they see massive risks will be borne by local communities. When sea-level rise impacts coastal areas, people are going to complain to council.... Councils have moved way beyond old notions of rates, roads, and rubbish. They're really about liveability of the community. We get this pulsing of activity at local government level, pulsing of activity federally and internationally and they don't always align (P28 Po1 Consultant).

Partnerships, particularly across levels, are heavily influenced by the availability of resource. This determines what gets done and often reduces the relationships to

financial contracts. State governments, despite continuous calls of ‘there is no money’ use what resources they have to control the agenda and outcomes (see Box 5.7).

Box 5. 7 Rengotiating partnerships — Following the money

The Commonwealth - State - Regional partnerships have co- evolved over the years, often based on policy implementation, program delivery and resources. South Australia established regional catchment water management organisations to deliver regional NRM programs. The Commonwealth also developed and funded national NRM policy and programs, many delivered at the regional level. Some of these funds were redirected by the State. The Commonwealth’s response was to set up independent regional NRM bodies to deliver their program, excluding the states from accessing the funds. The South Australia Government subsequently formalised these regional bodies as state entities to regain access to the Commonwealth funds.

These *quid pro quo* exchanges were not only based on party lines but continually redefined the relationships, disrupting cross-level partnerships and having significant impacts on program and project delivery and therefore capacity to achieve significant NRM and environmental outcomes.

The extent and effectiveness of cross-level collaboration also varies between different levels within different organisations as project officers develop their own networks.

And most people play by the rules. Those collaborations could be happening at an officer level, while at the top level, people might be snapping at each other. There's nothing we can do about it, but we certainly try and maintain the good relationships (P12 Po27 NRM).

Different types of organisations develop their own cultures. These organisations often attract personnel who have affinities with these cultures thereby reinforcing the culture (P19). Even having good partnerships across organisations and levels is insufficient to generate an adequate understanding of how these organisations work. Unless officers work in the same level or sector, they do not really understand what happens and how things work. Because of the lack of structures and processes they must be close to the action. They have to have ‘skin in the game’ (Taleb 2020; Taleb & Sandis

2013) - if they hope to gain from an activity they must accept the risks, including paying for any mistakes. In this context this includes paying the costs of deeper engagement from the start to gain the rewards of better participation and greater buy in.

Obviously, there's different levels of communities. You have individual resident, community organisations, business, peak industry bodies, and it is a real challenge we're kind of grappling with now. At what level do you engage community in the discussion? And I would agree that we haven't really reached downwards very far (P40 Po10 LG).

The above quote, from a local government officer, which is supposed to be closest to the community (Measham et al. 2011), highlights the position with respect to current engagement practices. This limited extent of engagement was also manifest during one of the RAP processes with which this council was involved. This limited engagement is a contributing factor in separating multiple levels of government from MLG.

Cross-level collaborations are informed by who is doing what and how it all aligns with other partners and their interests. Addressing investors' priorities can broaden the scope of programs and the investment is often necessary to enable the program. This inclusion risks moving away from original intents and potentially generates tensions and reduced cooperation.

I think making sure that alignment with federal, state, regional, local plans, is there, so that you're embedding climate change adaptation in everybody's core business, and that is really the challenge for the next five to ten years. How do you embed those adaptation principles, into the work that everybody does? (P40 Po11NRM).

Cross-level collaborations are facilitated by common understanding of roles and mandates, interests, position in a hierarchy and investments. MLG approaches support maintaining these understandings.

5.4.4. Boundary organisations and change agents

Many organisations tend to focus on their own patch; some reach across their roles and engage more deeply with other organisations. This has potential implications for other roles organisations and individuals may take on.

... (we have) a valuable role to play as a boundary organisation, almost a change agent, working with the lower levels and the higher levels to change the context so that these guys can do what they have to do. And working with the higher levels of government to get those changes and then working with the lower levels to put pressure on the higher levels ... it requires an understanding of the key players, their institutional constraints, and capabilities ...it's spheres of influence and control, these have not been discussed and engaged with (P16 Po 6 Researcher).

The limited, more structured, and formal engagement between multiple organisations drives some organisations (P16) and individuals (P19), and consultants toward adopting change agent roles. These people continuously broker and re-negotiate positions with every change and development. Idealistically MLG embeds these negotiations into normal functions. The existence of these boundary organisations suggests some progress towards a more MLG type functioning.

Every level in an MLG system has three potential boundary domains: with organisations above, below, and alongside them. The loci of the boundary role - the negotiated parts, are the overlaps, the edges, and the interfaces. This intersecting space is dynamic, emergent, and open and where new connections can be made.

...what ends up coming down from (above and below) ... ends up roughly meeting in the middle. They're the same. It's not like the Board wants to do something completely different to the department (P21 Po2 NRM).

You either have somebody within here, that coordinator person that can go and make all those connections, or from the higher level so they can coordinate and make sure that there's someone that connects with all the regions (P21 Po7 NRM).

...we are quite hierarchical organisations, so it means the power is very firmly invested in the executive. The espoused reality is we're sort of enabling organisations, but in fact we're quite disabling organisations. The role of the change agent, the influencer, then becomes important... (P19 Po3 NRM).

Boundary (spanning) organisations and change agents are valuable in connecting and translating values and practices across siloes, sectors and levels. These positions are not well recognised or supported and are generally adopted voluntarily rather than being requested. Their value comes from their ability to understand multiple sides, bridge traditional boundaries, and facilitate the opening of discussions to building partnerships. Their role is often that of easing tensions which have built up over time and misunderstandings.

5.4.5. Trickle down

In the absence of formal mechanisms, policies, behaviours, and practices are expected to trickle down in multilevel contexts (Goss 2010; Zenger & Folkman 2016). Le (2015, p. 1; 2016) has coined the term 'Trickle-Down Community Engagement': *'when we bypass the people who are most affected by issues, we engage and fund larger organizations to tackle these issues, and hope that miraculously the people most affected will help out in the effort, usually for free.'* Johnson (2008) discusses emotional contagions as the mechanism for this transfer of behaviour. Trickle-down theory is mostly dealt with within the context of trickle-down economics (Andreou 2014; Arndt 1983).

Trickle down occurs in South Australia in management, engagement, communication, and collaborations. The PCCC, for example, assumes it is accepted practice (P6 Po123 PCCC).

...being in a democracy, to generate urgency, you need it to go all the way to the politician level. And supposedly, then that trickles down very quickly to chief executive of departments, and so forth (P12 Po28 NRM).

So, the problem is that state understands regions, at least from an NRM Board. They understand local councils to a lesser extent. And they understand communities even less. So, you can assume state works with regions, regions work with councils, councils work with communities (P36 Po15 Consultant).

Trickle down is also seen as a two-way process, e.g., communications (P5 Po7 LG). However, trickle down is mostly assumed, and its extent and efficacy are debateable due to weak connections and collaborations across multiple levels (P22 Po13 NRM). The assumption it works means that limited additional action is taken, and few resources are allocated to understanding current practices. The State, for example, informs local government and assumes local government informs the community. The State takes no further action. Nardi (2019, p. 8) just sees trickle down as bad theory!

In multilevel and cross-scale collaborations, Zia, and Wagner (2015) report increased performance management gaps with larger vertical collaborations than cross-cutting polycentric networks as the latter have stronger ties. Closer collaborations, such as MLG, facilitate the transfer of behaviour and practice contagions.

5.4.6. Adaptation pathways

Adaptation pathways feature in many RAPs presenting an opportunity to explore the use of a MLG lens in allocation of decisions across different levels. Equivalent decisions across the RAPs assigned to targeted organisations could be aggregated to generate efficiencies and synergies. Currently the plans are operating independently with limited cross-RAP collaborations. The development of an overarching state-wide multilevel adaptation pathways process, which combines all the RAPs' adaptation pathways, may prove valuable and could be linked or integrated with other sectoral decision-making processes.

...there are some roles that do need that really strong mainstream state position, ...perhaps that needs an adaptation pathways model over the top of that, because it would be the decisions in that process that will need to be taken over time, not all today, to solve the problem. There is a role for the state in trying to give the decision-makers the

best resources in terms of the best tools in how to make decisions and I think pathways is one of those tools... (P7 Po11 NRM LG PCCC).

Adaptation pathways could be reviewed from a MLG perspective to support negotiations and delegation of responsibility for specific decisions and actions. This also presents opportunities to generate synergies across RAPs and integration across climate change threats (Maru et al. 2014) at state level.

5.5. Subsidiarity

Subsidiarity is critical for effective MLG (Dale, Ryan & Broderick 2017, p. 355; Gussen 2015; Head 2007) but once again is not a common concept amongst the participants. While some delegation is apparent, the extent to which it constitutes a manifestation of subsidiarity is open to discussion.

It's a complex, adaptive system. ... we can't engineer it. So, we have to use principles.... Everyone can't know all the information. We have subsidiarity, and niche differentiation, because that's the only way we can cope. We have to delegate (P17 Po9, Researcher).

Subsidiarity is also recognised as a difficult principle to apply (Daniell & Kay 2017, p. 43) and that needs further exploration. In practice, however, there is some understanding of subsidiarity, even if it is not articulated as such, that is presented in the context of devolvement and delegation.

So, there's high-level strategic priorities that are set and then there's a level of devolvement of decision making to the appropriate person who understands the detail and the skill set. ... Well, I'd like to think that's mostly the case in our organisation, there's probably room for improvement and senior management understand their role in making decisions for and with other organisations (P20 Po9, NRM, emphasis added).

The difficulties in applying subsidiarity are exacerbated by an ongoing lack of clarity of roles between organisations such as DEWNR and the NRM Board (P32 Po13). There

is also a long history of centrally-based power in South Australia where ‘...even the state - local government (relationship), the power is vested with the state; local government is purely an instrumentality’ (P19 Po5).

Central to MLG and subsidiarity is the negotiated delegation of authority and power to make agreed decisions. That is, a ‘higher-level’ organisation may agree to a ‘lower-level’ organisation making certain decisions, but that is not to say that the lower-level organisation can make the higher-level organisation decisions (P31 Po6). Departmental personnel don’t have any mandate or power to make any decisions that are not ‘government decisions’ (P31 Po6).

The lack of substantive application of subsidiarity suggests sub-optimal use of human capacity in addressing the challenges of adaptation to climate change. That is, the people who are best placed to undertake targeted actions are not provided with the opportunities to do so. So, people who are less capable of doing those actions with a greater degree of efficiency are given the job of doing them. As Box 5.8 illustrates, in many cases when citizens have all power and self-determination taken away, they find other mechanisms outside the current system to get what they want.

And this is going to be something that’s ... going to play out, more and more in the next few years, as the feds and the states want to devolve responsibilities to the lower levels, almost to the individual, household owners and asset owners and local governments. They cannot do that independently of devolving power as well. If they try and devolve responsibility without giving them any kind of authority and financial power, it’s going to be a mess...none of those conversations are being had (P16 Po7, Researcher).

Box 5.8 The more you let go, the more power you have.

What seems apparent is that the Government, in attempting to ensure it controls what happens, hangs onto the 'power' of undertaking some programmes it is not capable of delivering effectively. These often result in poor implementation and some serious disapproval by the public (e.g., pink batts: Hanger 2014). Appropriately negotiated delegation, where it is not just shifting the costs, can generate better results and a more engaged society. This is especially true when government cannot and should not be 'doing everything'.

5.6. Decision-making

Decision making is a key element of governance and, like governance, the actual process of making decisions is not well articulated. Turner (2020a, 2020b) proposes that improved decision making contributes to better project management and that while there is an association between good governance and better decision making, there may not be a causal connection. Understanding both governance and decision making is important in adapting to climate change.

Different types of decisions are made by different people; usually elected members and senior executives (P12, P25, P31) are identified as the key decision-maker.

And as a public servant, I don't make decisions. My Chief Executive doesn't make strategic policy decisions. We advise and present a balanced argument. And it's the elected... members of Cabinet and Parliament who make the decisions, who decide rules, legislation, and policy (P25 Po 5, Government).

...the taskforces, almost all they do is make decisions. So, we ask, does this decision need a Cabinet-level decision. If it doesn't change government policy, it doesn't need to go to the Cabinet taskforce. If it changes government policy, then we push it to the Cabinet taskforce (P31 Po 2-4 Government).

Decision-makers don't talk to players like me. They talk to boards, and chief executives, and people like that. Hardly anybody makes decisions outside of those levels. Everybody else helps them make decisions, but don't make decisions (P12 Po 37 NRM).

Other decision-makers include project officers and community groups, depending on what the decision is.

The steering committee makes very minor decisions ...community organisations never make decisions. Obviously, they make decisions on what they themselves do with the money they have (P12 Po 37 NRM).

...sometimes I make decisions the steering committee won't even know about. It's really important knowing who will speak out. The quieter people may have a difference of opinion; they'll speak with me independently. So, sometimes I am the voice of someone else, so their views are aired, so I come to the discussions informed. They'll ring me and say this is awkward, my mayor doesn't, whatever it is.... I try and get a common understanding but sometimes I am making decisions based on gut, ... what I think the majority would be happy with. Some of those decisions haven't been agreed by all. I think the real challenge for me is that line of when I can challenge the assumptions, and say look the majority don't agree with this, but I agree with the minority, I think we are doing this the wrong way, that's the challenge (P22 Po 4 RAP).

The adaptation pathway approach used in several RAPs focusses on the timing of decisions and how the context may change, e.g., the time horizon for the barrage decisions is probably decades away but the people making any decision today may be different in twenty years' time. The adaptation pathway approach developed by Wise et al focusses more on the perspective of the decision-maker at any particular time (P16 Po5 Researcher) and what criteria and thinking they use to make their decisions.

The AP approach documents anticipated decisions and their timelines, making the decision-making process transparent and therefore more accessible. By not following this approach the State Government has kept its decision-making process and criteria opaque.

Not all people can or are good at making decisions. The assumption is, 'it just happens', but there is often little support to enhance decision making skills in most governance training.

...our executive can't make a decision to save themselves. There's no strong decision-making processes or skills. So, decision-making's really difficult.... They defer to the elected member base all the time. I think it's a bit of the makeup of our elected member base. They think that they should be making those decisions. So, I can go into the executive leadership team and say we need to do this. They wouldn't give me a yes or a no. They would say you need to go to elected member, so they can make a decision (P24 Po 18 – 19 LG).

Decision making, and information provision are interdependent processes (see governance above). The decision on what information gets presented can be important and in government can be a very formal process.

So, they make decisions on what's brought to them, but there's a whole organisation behind them deciding what gets brought to them and what doesn't (P40 Po 3 LG).

Cabinet don't come together and make a decision without a Cabinet submission, heaps of policy, different positions. We do the policy advice and say you could make a decision about 1, 2 or 3. It's a lived experience of what kind of decision is a Cabinet decision or a Cabinet note, because Cabinet has Cabinet submissions, Cabinet notes and then information, so a submission changes policy or is an expenditure decision and a Cabinet note is important information for Cabinet, but it's not allowed to change policy. So, if they are a policy officer it's their responsibility to gather all the ideas, information and to put potential papers and positions up through the levels of hierarchy and those

hierarchies decide what goes up to the Cabinet taskforce and so if it's clear a decision then everyone's incumbent to bring the best advice to ministers. Those policy offices know that's their job, it's their decision making power. They don't have any other formal decision making role (P31 Po 2-4 Government).

I've been naive in the past expecting policy processes to be about decision-making, when they are about information spreading and having the conversations and getting people on the same page. ...To me, some people dismiss the low-level public servants involved in these discussions as decision-makers. However, unless all of you are on the same page, you're well-positioned to divert decisions or implement them in your own way (P0 Po 3 Other).

Even with the relevant information and supported recommendations, decision don't always go according to plan...

So, they can get the most thorough advice but on the basis of the debate on the night, they can make a completely different decision ... and it's the same with Cabinet making decisions. So, when I'm talking state government and the ministerial advisors, they are the party arm of decision-making, it's all to do with party politics and who's in the government (P19 Po 6 LG).

We have a very strong drive through community involvement in our major decisions. That eventually stops government governing. At some point, decisions have to be made. And we have an appointed government elected by the citizens, to make decisions. There's a philosophy that is, debate and decide. And I think government is in endless debate at the moment (P25 Po 4 Government).

Decision making can be controlled in a number of ways including through denial of access to the processes (P14 Po5 Community Group) and through legislation where, e.g., the state prevents local government from making decisions on certain matters (P15 Po3 LG).

How decisions are actually made is not well conceptualised and articulated. When it comes down to exploring exactly how a decision is made things can get murky. Making decisions within an organisation has a number of prescribed conditions and steps that include:

1. A clear decision making structure and process – who is best placed to make what decisions?
2. Organisational objectives and outcomes – what is the desired future?
3. Baseline or point of reference - from which to assess future contributions.
4. Item added to agenda - with briefing papers and recommendations.
5. Discussions - on briefing and opinions, and consideration of feasibility and appropriateness.
6. Voting based on direct connection to objectives.
7. Implementation of decision.
8. Reviewing, reporting and evaluation of decision with recommendations on future actions.

These steps correlate well with Rissik et al.'s (2014) five-step NRM Adaption Checklist, Dash et al.'s (2017) seven-step model and Higson and Sturges's (2014) seven-step model and form the basis of decision making frameworks and the adaptation pathways process discussed above.

5.7. Conclusion

This chapter has covered the main themes emerging from the data, including governance, MLG, subsidiarity and decision-making. The relevance of the themes is in their appearance not in the substance. That is, while it is discussed, the engagement with the ideas related to MLG is thin and superficial, lacking a higher degree of understanding and exploration. Analysis has therefore required a filter aimed at capturing current practice and interpreting that through the themes. The following key points emerge from the above.

Governance in general is poorly understood and practiced. Where it is covered it tends to be mostly administrative. Some recognition of relationships between individuals and organisations suggests thinking beyond the superficial practicalities. Governance is

seen by some as being comprised of decision-making elements and provision of information. Government is still seen as the main governing body but also includes a range of working groups, committees, councils, and agreements as supporting mechanisms. Three main governing jurisdictions exist in Australia: federal, state, and local. The development of a regional level of governance is strengthened by the establishment of regional adaptation planning processes, though these are likely to be short-lived.

The application of adaptive governance is limited, resulting in reduced adaptation to changing contexts.

Regular changes in institutional arrangements such as departmental restructuring, new funding programs and processes, and changing governments have significant impact on security and continuity of actions, limiting contributions towards desired outcomes.

Multilevel governance is essentially absent from adaptation to climate change practices in South Australia. Several foundational practices (Chapter 6) have the potential of maturing so as to facilitate some application of MLG.

Multiple levels of governance are cited as contributing to a fuller expression of a hierarchical addressing of climate change. That is a state, regional, local hierarchy exists, covering all the levels. However, this system lacks effective coordination and therefore reduces ability to address the impacts of climate change.

Subsidiarity is similarly poorly applied, though some exceptions may be granted, e.g., the delegation of adaptation planning to regional levels, though this is open to debate.

Making decisions is critical to all management practices. Who is best placed to make what decisions is still a contested area. Traditionally, elected members and senior executives make the decisions, but they do so on the basis of, *inter alia*, information

provided. Decision making is susceptible to political interference and redirection.

While governance is poorly expressed there are a number of practices which have the potential of being upgraded into a more rigorous praxis; provided the will is there to make this transformation.

Chapter 6: Processes Enabling Multilevel Governance

6.1. Introduction

A number of critical processes are required to promote effective organisational operations. This is especially so for MLG systems where the need for close collaborations and engagement is important. These 'enabling processes' (Scoones et al. 2020) include stakeholder engagement (Khatibi et al. 2021), communications, capacity development (Raymond & Cleary 2013), and monitoring, evaluation, reporting and improvement (MERI) (Berkhout, Hertin & Gann 2006; Li et al. 2016). Coordination and integration of the enabling processes across organisations both within and between levels are equally relevant. Access to resources, mostly financial resources but also expertise and time, are also pivotal. In exploring the potential existence of any application of MLG, and if any, the extent to which it might be manifest, the expression of some of these above enabling processes might be considered proxy indicators toward at least some development of MLG systems. This said, these processes are effectively standard across all organisational processes to varying extents and with a wide range of effectiveness; their presence does not, in and of itself, therefore imply any expression of MLG.

This chapter presents the results of the explorations of the extent and effectiveness of these enabling processes to determine the strength and legitimacy of potential claims of any MLG approach. The chapter commences with a discussion on stakeholder engagement in the adaptation to climate change planning and then explores communications and resourcing. Coordination and integration are then covered, followed by some discussion on the impacts of constrained resourcing. The chapter closes with a brief coverage of capacity development and MERI activities.

Engagement, networking, communications and coordinating actions are interdependent processes. Ideally, they would be seamlessly integrated rather than siloed, as is often the practice. Though continuous processes, they vary in extent and

intensity, and they have fuzzy boundaries. It is not meaningful to think and act on them as discrete processes. They are categorised here for simplicity but should be read as interconnected processes. For example, some points in communications could equally have been covered in engagement or coordination and vice versa.

6.2. Stakeholder engagement

The Oxford English Dictionary Online (2021) defines a stakeholder as '*a person, company, etc., with a concern or (esp. financial) interest in ensuring the success of an organization, business, system, etc.*'. The online Cambridge Dictionary (2020) defines a stakeholder as '*a person such as an employee, customer, or citizen who is involved with an organization, society, etc. and therefore has responsibilities towards it and an interest in its success*'. McGrath and Whitty (2017) recognising the contested nature of the term, settle on a stakeholder as (having) '*an interest in relation to an activity*'.

In the context of this thesis, a stakeholder is any individual or organisation that has an interest in a process and therefore assumes some responsibility toward that process (Dryzek 2000; Fassin 2012; Mees 2017). 'Stakeholder' is a bureaucratic term, so colleague, partner, and participant are preferred.

While they have slightly different meanings participation and engagement are sometimes used synonymously elsewhere (Khatibi et al. 2021; Serrao-Neumann et al. 2015) and in this thesis. Participation is sometimes considered a stronger form of engagement; in the end it depends on the integrity and legitimacy of the processes.

Many formal planning processes require some level of stakeholder engagement including state government plans, regional NRM plans and of course the RAPs. Most are developed using some form of public consultation. However, the manner of engagement and its effectiveness varies across the processes, and often these are superficial and perfunctory.

Environmental issues, such as the Millennium Drought in south-east Australia, 2001-2009, through adversity can build community cohesion (P34 LG) (National Research Council 1991; Walsh 2019), despite the devastating impacts. Greta Thunberg provides

an excellent example of how one person can have a significant impact across the globe.

The International Association for Public Participation (IAP2) spectrum (IAP2 2018) (Figure 6.1) sets a standard for participation. Mostly, engagement in South Australia tends to fall into the lower end of the impact scale, i.e., informing or consulting. In practice the interpretation of the language, '*avoiding the illusion of inclusion*' (Few, Brown & Tompkins 2007) is more important, and as with many of these types of processes they are designed on rhetoric, implemented to the lower limits of capacity and resources, and then largely forgotten.

IAP2 is used effectively in other areas (Khatibi et al. 2021; Leitch et al. 2019). Arnstein's ladder of participation (Arnstein 1969), a benchmark for subsequent tools and methods, presents an analogous albeit more political scale through addressing power relationships. Collins and Ison (Collins & Ison 2006; Collins & Ison 2009) suggest that an alternative framing based on social learning (Bardsley & Rogers 2010) is more appropriate to contemporary participation practices.

Within a coastal context, Nursey-Bray et al. (2017, p. 223), using both Arnstein's Ladder and the IAP2 continuum,


... argue that public participation processes must be part of ongoing coastal adaptation decision making in two ways: (i) by ensuring that valuable community knowledge and feedback is incorporated within upper-level decision making, and (ii) by enabling high level policy makers to communicate management decisions, in ways that will be accepted and palatable to the various 'publics' involved in coastal regions.

Figure 6.1 below demonstrates how in practice, most South Australian processes occur in the lower impact levels of inform and consult.

IAP2 Spectrum of Public Participation



IAP2's Spectrum of Public Participation was designed to assist with the selection of the level of participation that defines the public's role in any public participation process. The Spectrum is used internationally, and it is found in public participation plans around the world.

		INCREASING IMPACT ON THE DECISION 				
		INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.	
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.	

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Source: IAP2, 2018

Figure 6.1 IAP2 Spectrum of Participation

Furthermore, attendance at consultation events does not necessarily mean there are real opportunities to influence the processes. Such events are usually more about what the government wants to communicate outwards and not what the participants might want them to hear (see Box 6.1).

...it's about the constraints the players in that field are operating in, because individually, their view might be much stronger than they'll express in the public domain. It's not kosher to express the views strongly. If you come out and say we can't go down this path, because this is weak, then you will be compromising your future career. I know that I, in my NRM role, would come out and say things very strongly. When I first started, an experienced campaigner said, 'Don't you like your job?' By implication, I won't have it for long (P15 Po 6 LG).

Box 6.1 Having Your Say?

LAP Officers, as community representatives, were often consulted as part of government planning and policy development. Government would give a spiel about what they wanted and how it was going to happen. There was always an element of tension; an 'us and them' type situation with the senior bureaucrats.

These meetings provided us with an opportunity to ask questions. Most often there was silence. The elephants in the room were not raised. We could not really raise any serious objections or challenge them – the key decisions had probably already been made.

At one meeting, during a coffee break, I decided to make the point to a middle manager that these meetings effectively disabled any contributions because the senior officers were there, and they would note who was rocking the boat and this could impact on the success of your future funding application. His response was, 'well, you have had your opportunity to have your say' and walked away.

Effective engagement requires facilitation; it tends not to happen of its own accord. In much of NRM in South Australia, this can be a dedicated position, but it is more often implicitly embedded in most project officers' roles.

At the end of the day ...it's somebody owning it and driving it and holding others to account, having regular meetings and challenging people's delivery, in a respectful way; things move forward because someone's got a personal interest (P26 Po2 NRM).

Engagement needs to be continuous and address relevant key processes from the start through to evaluations. The project cycle is a continuous process and requires partner engagement throughout the steps. Engagement needs to be appropriately embedded across all organisational activities.

The biggest thing for me is making sure that there are enough community leaders, who understand what's going on. I never ever think the best message comes out of the single issue townhall meeting (P26 Po7-8 NRM).

While it is not being suggested that everyone be engaged in everything all the time, they do need to know where, how, and what they are doing and how their role fits into the surrounding programs within the whole organisation's operations and its collaborations with other partners.

...you can't bring everyone together at the same time, so it leads to evolution, systems evolution. And thinking about how you guide the evolution, the learning. So, we have gone to completely regarding adaptation as a learning process. A multilevel learning process (P17 Po1 Researcher).

The Local Action Planning process, unique to the SAMDB NRM region, was an early example of bringing local people together to support a regional approach. Each LAP had a community committee and project officer to support their planning and project implementation.

6.2.1. State-level consultation

The release of the renewed Climate Change Strategy for South Australia ‘consultation papers’ in 2015 (Government of South Australia 2015a, 2015b, 2015c, 2015d, 2015e, 2015f) provided a further opportunity for the State Government to engage with its stakeholders.

About the same time the State Government released policies on carbon neutral Adelaide (Government of South Australia 2016a, 2016b) and low carbon economies (Government of South Australia 2015g, 2015h, 2015i). Although intuitively related, the precise connection between policies was not clearly articulated generating some confusion.

In a period when the government’s catchcry was ‘there is no money’ and the citizen jury on nuclear waste (see below) was in progress, the consultation processes for the two strategies (2007 and 2015) differed.

... this is far inferior, this time around, because they haven't resourced a decent long-term process. We crafted a strategy, and we were fairly loyal to all the processes (P0 Po8 Other).

...the difference in this process is that a few people turned up to ten meetings around the state within a month. They weren't looking for deeper insights into what we should do we're essentially in an era that is more politicised (P0 Po8 Other).

I participated in a few of the public consultation workshops as much as an observer as a participant. Attendance at some of the consultation events allowed for comparison with previous consultation processes and an assessment of the effectiveness of the process (see Box 6.2).

Box 6.2 Climate Change Strategy Public Consultation 2015

The usual consultation process was rolled out through the *de rigueur* 'roadshow' focussing on regional and rural public workshops, online discussions, and public submission (via YourSay website).

The consultation process was launched in September 2015 with the release of six consultation papers; an overview paper with Lead, Reduce, Carbon Neutral, Adapt and Innovate papers. The core of the consultation was 12 workshops held mostly in regional South Australia (with the usual omission of pastoral and Indigenous Lands) and sectoral workshops for industry, conservation, and local government with an additional adaptation workshop, all held over a six-week period in September and October. I attended three workshops (Mount Braker, Victor Harbor and the Conservation workshop) and sent in an individual submission.

The two public workshops I attended were poorly supported with less than ten people at each workshop. The process was very structured and controlled leaving limited opportunities for more substantial discussions and little confidence much notice would be taken of any comments once documented in workshop notes. The government does not clearly demonstrate how it addresses and/or considers any of the feedback and comments received.

Of interest are the schedule timelines. Consultation closed on 18 October and the new Strategy was released on 29 Nov 2015 allowing six weeks for analysis of consultation feedback and writing of the strategy. Given how slow the government can be at times this seems a very rapid process and ahead of the scheduled release date. The final product was the usual promotional rhetoric (cf. Government of South Australia & Speirs 2021) and spin, and which was replaced by the equally glossy 2019 Liberal Government *Directions for a Climate Smart South Australia* (Government of South Australia 2019a).

6.2.2. What works

In many projects and programmes, engagement and collaborations occur but with limited facilitation; interested parties with similar interests and responsibilities work together on specific projects. These collaborations tend not to broaden out to other areas.

Those interactions do happen, it's more about who knows who. The fact that the networks are quite good, means those conversations are had. They are helped by the Nature of SA, a state-level initiative, which actively engages lots of groups (P20 Po4 NRM).

The Nature of SA, a government-NGO partnership (Government of South Australia 2018b), was a sector-wide partnership guiding positive change to nature conservation. Following a comprehensive and innovative engagement process to establish the partnership, it ended after two years.

Planning processes and plan implementation can also be effective tools in facilitating partner engagement (P12 NRM RAP Government). Other interactions between agencies and organisations occur on a more structured basis. One project officer meets with a key project officer in the climate change unit on their one day a week in the agency office. This is an important and valuable opportunity but despite 'everybody can talk to (Project Officer)' (P12), this is not practical for most officers; each officer could develop their own mechanisms of engagement, but there is no generalised equivalent alternative, and this reinforces preferential access to information and consequently resources and capacity.

Nobody's got enough time and will to really collaborate with absolutely everyone. But I place a lot of emphasis on collaboration, and collegiality (P12 Po26 NRM RAP Government).

This physical access does not always work. One RAP Project Officer had his office in the same small building of a participating organisation and still there was limited interaction (P14 Community group).

There is a hierarchy of government interests and decisions of importance that attract attention and funding providing for a range of innovative engagement techniques. The citizens' jury on nuclear waste, for example, conducted in 2016 included the largest citizens' jury ever conducted in the world (democracyCo 2016; newDemocracy 2016) and '*...was effective as a local deliberation process that offered learning opportunities, gave access to information and made decision making transparent*' (Calyx & Jessup 2019). While the process did not produce consensus it set a standard for engagement and a model that could be applied across other processes.

6.2.3. What does not work

The predominant approach in engagement is top-down where mostly state government directs engagement on what, where when and how the interactions will occur. This places the participation practice well into the inform/consultant levels of the IAP2 spectrum and perpetuates the command-and-control approach that dominates interactions.

...if someone wants to plant different trees, because they'll live longer in a threatened community, the national legislation is disabling of that. So, the people writing the legislation need to engage with the tree planter. And the tree planter needs to be aware of the legislation. They can't break the rules, or they won't get the money again (P17 Po10 Researcher).

Many contemporary engagement practices follow a conservative approach which is often not critiqued or thought through. The engagement tools are well developed but the will, capacity or resources limit their effective application.

Those things don't really work, because you bring people together, in a process where they get really excited and make commitments, that coupling phase is really good because it creates shared understanding. Then, they expect these individuals to go back and in the decoupled phase, and drive it, and live that agenda and they can't, ... they go back an existing process, in a highly constrained environment, with existing institutional arrangements, and they are not able to do what they committed to in that lovey-dovey event, and there is no funding to continue any of that stuff. So, things all fall apart, there is no real thinking, what we need to be thinking about is how do you support those individuals when they go back into their highly constrained environments, where they've got to deal with existing cultural and institutional barriers (P16 Po3 Researcher).

Engagement can also be constrained or locked into past history, with path dependency leading to structural inertia and resistance to change (Hooghe & Marks 2001b; Roscoe et al. 2020; Sydow, Schreyögg & Koch 2009, 2020) or captured by 'elites' (Aston 2020)

(see below) who can control the processes so as to produce findings consistent with their needs (Cleary & Hogan, in press).

There was some discussion about broadening representation of the steering committee. There was uncertainty around the project officer's position, so it was decided to hold off until we had some more certainty. The (Project Officer's) pointed out, 'If we are going to open up the steering committee to community members, what do we have to offer? What's in it for them at this stage?' So, the Lidar Hazard Mapping Project, we'll need really strong community engagement. So, it's at that project level that we're reaching out to community rather than at the governance level (P40 Po1 LG RAP).

Further, additional to the lack of forethought and limited resources, poor engagement has a trickle-down effect on broader engagement.

I was sitting with four other coastal people. I said, 'Where are the engineers and the on-ground works crew, why aren't we all here discussing how we can work more collaboratively?' There was a separate workshop for the infrastructure and engineering department. The council project officer doesn't know what's going on; he finds out from me; I find out from the grapevine. It's reactive, we're just running around like headless chooks. I've yet to see any people have the RAP like bibles in their back pockets or sitting on their dash. Compartmentalising doesn't necessarily give people ownership (P14 Po 9 Community group).

Ensuring continuity in engagement is equally important otherwise people move away. This needs to be built into all engagement processes (P10 Community Group). Engagement also needs to be genuine (P15 Community group) in addressing the interests of the engaged and not just those seeking to engage.

6.2.4. Networks

Networks are dynamic, flexible interconnections between people and organisations for sharing information and or collaborating on joint projects. However, they can be ephemeral and are influenced by their membership. Networks can be formal or informal, nested, and focussed or have a broad open scope. Networks are of particular relevance within MLG systems (Cunningham et al. 2015; Cunningham, Jacobs & Measham 2021; Di Gregorio et al. 2019) and can form a mechanism by which the MLG systems function. The establishment and maintenance of networks often rely on a few committed individuals (Hauge, Hanssen & Flyen 2019) and usually rely on at least some funding, directly or indirectly. Like organisations, networks emerge, flourish, and die, but the need for them continues to be critical. At different time networks can also exhibit the full range of Arnstein's Ladder (Arnstein 1969) and the IAP2 spectrum above.

*Everybody needs networks. Everybody needs to talk to people...
There's a weekly e-mail that goes around, that tells you about some
things that are happening (P12 Po20 NRM RAP Government).*

But not everybody gets access to certain networks, and information is often very selectively shared. Even if representatives of groups are nominated to participate in specific working groups or steering committees they do not or are unable to share what they learn, (See Box 5.6). Information is mistaken for power and kept close to the key decision makers.

Information sharing within networks can be informal and irregular resulting in uncertainty around whether everything gets shared equally. It can also be dependent on what actions are being undertaken.

*... (coordination with state and local government works) ... I'd say
adhocly, it would just come across if they email us. We've been going
through this planning process, and we've invited a lot of other
stakeholders along. That's been an opportunity to find out what's
going on where. So, it shows the importance of those things
continuing and being able to have and build those networks.*

Otherwise, it's very easy just to keep doing what you're doing (P21 Po6 NRM).

Phone, email networks, contacts, personal staying in touch, people come to you. I always called it 'by stealth', it's more about the relationship, small city, networks are small, but the thing is the networks do work well at a practitioner level. So, the practitioner networks are quite strong between state and local government, probably more in the metro context, I haven't had the rural experience to know how it operates there (P19 Po 10 LG RAP).

Participation in networks can also cascade as one network leads into another bringing together 'insider' and 'outsider' knowledge.

...my community space was really local and regional to a degree, but the NRM experience exposed me to the state politics of NRM. And then the state NRM group exposed me to the national space... (P7 Po6 NRM RAP LG).

Some networks also extend to international arenas through e.g., the former Premier Mike Rann co-chaired the States and Regions Alliance including the signing of the Compact of States and Regions and which continues today (Government of South Australia 2020d).

In the context of the RAP process one of the most useful networks was the Adaptation Practitioners Network (P22). This network brought together the RAP Project Officers or Coordinators for general discussions but does not appear to have been a more formal process. It is not clear that any particular person had the responsibility to pull the network together.

I don't think it's been consistent. There has been some random or interspersed opportunities, just by virtue of the coordinator meeting another coordinator, that really serendipitous 'ahhh you are from... you must've been through this, how did that work? ...' and the State and the LGA have facilitated a couple of those sessions, but not regularly (P22 Po 7 – 8 RAP).

So, the Adaptation Practitioners Network, in local government, we rely on our regional coordinators to glean those lessons from each other and bring that back to the regions. So, the LGA have provided that networking forum. So, (Project Officer) and her equivalents meet up once every couple of months. It's very informal and it's in that space that they all get together and talk about their lessons, and barriers, and highlights. And the state tries to provide that space, and there were discussions about the need for that to happen on a more formalised basis (P40 Po7 LG RAP).

So, State Government have an adaptation working group which is pulling together all of the agency responses to the RAPs, but they have no regional representation. So, it's siloed in that sense. I think there is going to need to be some coordination between the regions if we want to advocate for the State Government to resource that response, and that will probably come through the LGA (P40 Po 8 - 9 LG RAP).

There were also a small number of RAP workshops with representatives from each region invited along with departmental staff and other personnel. I attended one such workshop as an observer (PO 10 and discussed elsewhere), initiated by the PCCC. This workshop was held near the finalisation of all the RAPs.

This Adaptation Practitioners Network arguably never developed a community of practice as described by Raymond and Robinson (2013). Communities of practice 'exist when members share a similar set of interests, expertise, roles, and goals; opportunities exist for members to interact with one another through both formal and informal spaces; and groups share a common practice or set of practices' (p.104).

Other networks exist but they can be limited in scope and therefore in usefulness (Box 6.3). This can be due to a lack of structure, poor management, and disagreement on focus (P14 Community group). As shown in Box 6.3 centrally run communications can be very effective but often get lost with restructuring and changes of government.

Box 6.3 Network News

The Department for Environment and Water funded a Project Officer to collate a weekly NRM Research and Innovation Network Newsletter which summarised recent peer reviewed environmental research and news from other government agencies. This was a useful and practical way of sharing information and was open access. I scanned the newsletter every week and found a number of useful papers for my research. It also highlighted recent research and publications resulting from work done in South Australia.

In June 2019, it changed its name to Department for Environment and Water Science Partnership News and became a fortnightly newsletter. In December 2019 the newsletter either stopped or I fell off the circulation list. Current news is posted on the Department website but this focusses on local SA news and not the broader research material from the fortnightly newsletter and is not archived for later access.

6.3. Communications

Communication is a critical process in adaptation to climate change, not least is the distracting 'debate' (Porritt 2018) with denialists. Communications are a core element of any MLG process.

A common role identified for the State Government is demonstrating leadership. Having a clear and consistent terminology can set a standard without making major commitments.

State Government is a missed opportunity around basic communication on climate change and adaptation. It could be leading because those messages and creating a common understanding is the same, no matter what region you're in (P22 Po12 – 13 RAP).

Effective communications include understanding who has what information and who is able to share what information based on their position and their delegated authority. Some people are also very protective of 'their knowledge'. The process of finding the 'right people' can be a significant task (P21 Po 3 NRM). Controlling knowledge and information is often about how power is brandished.

Communication is also a key engagement tool and should commence from the beginning of a process and be continuous. These are long-term processes that may only generate visible outcomes well into the future.

In the early days, it was really important that we started the conversation So, you couldn't adapt if there wasn't a broad spread understanding that change was coming. Some really important long-term decisions needed to be influenced by what we know about climate change (P0 Po 1-2 Other).

Communications bring everyone together to facilitate coordinated and collaborative actions in sending consistent messages. Communications are a means to an end and not sufficient on their own. Building trust and respect are necessary for increasing people's willingness to engage. Sharing information and addressing people's interests contributes to building relationships. If people are not involved from the beginning, they have less ownership and interest in participation. Last minute engagement also reduces people's belief that their views are important (P29 LG).

Communications need a driver and systems in place to ensure it happens.

...we haven't sat down and had a conversation about the plan, no one's driven it. I don't know that it's my responsibility, I don't think it's on anyone else's radar, but I can only do so many things, I'm trying to finish the NRM plan... (P13 Po 9 NRM RAP).

Internal organisational communication promotes consistency and efficiencies. Every organisation has its own communications arrangements good or bad. There is a clear understanding that Board members and elected members have no authority to direct organisational staff, but they may work with staff (P29) and either provide or seek information. Sometimes these communications can be more direct in situations where there are no other efficient avenues e.g., via the General Manager.

The rules are the elected members discuss and communicate with the Chief Executive. We support elected members discussing issues with the general managers. But they have no authority to instruct the general manager, on anything, purely for an information situation. It's

a fine, steady road you've got to walk (P34 Po 2 LG Community Group).

Early on, I set up an internal reference group. It didn't work. It was more effective if I had smaller meetings, or one-on-one catchups ... In a group situation the behaviour changes. Anything that I've taken to council, I could bet 11 votes to 1 it would be endorsed. Part of that is the relationships.... everyone's got different skills, mine is talking to people (P23 Po 8 LG RAP).

Increasing awareness, engaging and provision of information to decision makers, can influence decisions. This is context specific, and the changing of key personnel can have significant impacts on what is done and how.

...we made sure the administration and elected members had the best information available to make their decisions What has changed is leadership. So, going from a CEO that was with the agenda to one that's totally off the agenda, and that has a bearing on how you drive the agenda (P19 Po 1 LG RAP).

Previous experience and knowledge can be used to position organisations to not only take part in emerging programmes but also to get in from the beginning and support the design and development of the programme. This can result in the organisation's interests being better incorporated.

We identified the need for it (RAP) in 2008, as part of the climate change strategy. So, the idea was to do a city-wide adaptation plan, but because I'd worked in state government and knew they were looking at regional adaptation planning, we wanted in when it started. (Project Officer) was working on getting disaster resilience money for the RAP, so, we shared information with DEWNR which was looking for really strong links between SAFECOM, and Disaster Resilient and wanted projects up, so it was as much the individuals who were around at the time. It was knowledge sharing; it was us saying this is a good idea and we started making it happen (P19 Po 9 – 10 LG RAP).

Terminology and language are important, as both enablers and disablers, but can be open to interpretation (Box 6.4). *Inter alia*, this has allowed the climate sceptics to push their barrows and others to maintain a status quo. Debates about climate change versus climate variability enable shifting the meaning and emphasis to promote preferred actions.

Al Gore's title was really apt, it's an inconvenient truth. We would rather it was not true; we'd rather clap our hands over our ears and go lalalala, not really happening... (P11 Po 11 – 12 Other).

I think Rann was Premier, and he said, 'we're going to have a carbon neutral Cabinet,' and people thought, 'oooh, that sounds pretty good.' What it meant was that when they flew business class, they would pay Qantas the extra four dollars to plant some trees and it went down a treat. And then they said, 'Right, we're now going to have a carbon neutral government,' and again I'm thinking, I like that they're talking about this, but what's it really mean? Does it mean SA Water is going to use renewable energy and it didn't. Is every public servant going to drive an electric car fuelled by renewables, and it didn't, but it went down a treat with the punters. So, we are now having a carbon neutral city, so what's it mean? Does that mean everybody will come on an electric train or biogas bus, or ride their bike? What does it mean? (P11 Po 13 Other).

The messaging about climate change must be targeted to the specific region and context; if the message is not meaningful to the target audience, then it risks having the opposite effect and can result in turning them away.

I mean climate change isn't owned by everybody. ... If you talk about climate change and sea-level rise and they say well, for an inland community, it means nothing.... do not talk about sea-level rise in this region, it doesn't resonate with anybody inland.... Talk to them about you can't grow that wheat crop here. Have different messages for different audiences and different sectors but target it (P26 Po 4-9 Government NRM).

On the other hand:

... in 2007 a number of farmers and leading people in industry came out and said, 'This is climate change; this isn't just variability' (P41 Po 2 – 3 Government).

There is a need for building a stronger discourse and fluency in adaptation and governance. This needs to go beyond the jargon to bring the language into everyday use and to use local, everyday language. As box 6.4 illustrates below, governance as a subject is poorly understood because it is often brushed aside as being too difficult. This lack of engagement with the topic means people don't become familiar with the subject and its characteristics.

Government communication with landholders could benefit from a stronger and more structured strategy and practice. This applies to scientists and other researchers working in the sector. Getting them down to the grassroots level is important so community members can get the information directly as a lot gets lost in the translation between agencies and community (P10 Community group).

Box 6.4 Why don't we talk about governance least of all multilevel governance?

I attended the National Climate Change Adaptation Research Facility (NCCARF) conference, *Climate Adaptation 2016*. This was part of a series of the largest national climate change conferences in Australia and attracted researchers, practitioners, and government personnel, gathering together the greatest capacity of adaptation expertise in the country.

Being attuned to MLG I specifically listened for any mention of the topic; there were two or three mentions in a generic sense, certainly nothing of substance. There was a similar situation at the 2018 NCCARF Conference. There is no reference to MLG in either of the conference abstract booklets.

In asking why this is the case, the response I got from a researcher and practitioner (P16) was 'the *transaction costs are very high, ...probably many reasons. I think a lot of people glaze over when they hear the word governance.*' This 'glazing over' has been a common response in many discussions during this research. And we lose a lot by not naming MLG.

What the reasons are and what we lose are still unresolved and points to the limited discourse on the topic. We are not comfortable with the topic. So, we don't talk about it, so we don't learn to understand it or what it means (beyond a superficial layer), - the vicious cycle continues.

This suggests this may be a key area for future research and the development of a comprehensive discourse to bring MLG into the *lingua franca* of adaptation to climate change in Australia.

6.4. Resources

Accessing the appropriate resources at the appropriate time has a significant impact on project and programme development and implementation. This affects all levels of organisations including the relationships between investors and beneficiaries. In this context resources are primarily financial resources. Personnel, capacity, and expertise along with infrastructure, materials and a wide range of services are all considered resources. The focus here is on financial resources as these can often be used to access other resources.

Resourcing is also a political issue. Access to information and finances is often at the discretion of different levels of government who dictate the terms and conditions and target their investment to their interests. This can manifest as 'buying outcomes' (URS & NRM 2001), which risks targeting nationally determined priorities at the expense of local priorities.

'There is not enough money', a current refrain from the State Government, is used as an explanation for why many actions do not get completed. A line must be drawn around the most strategic actions; a critical and subjective decision, generally made by those with control of the funds.

A lot of work is done on the presumption of the fulfilment of expectations in relation to current and future resourcing. For example, significant planning has occurred in developing the RAPs across the state, with very little consideration of implementation and resourcing. This has had a major impact on the RAPs and raises questions about the viability and rationale of developing the RAPs in the known uncertain future. RAPs could almost be considered 'fake policies and plans'; they get developed, look good but there was never any serious higher-level support for their implementation. The quote below, from a previous government employee, illustrates the short termism (Borgström, Zachrisson & Eckerberg 2016; Hodge & Adams 2016; Sjöblom 2009) prevalent in the current political paradigm.

When we did the Council's (PCCC) climate change vision, the main feedback was, 'Federal government money's drying up. We've got plans but no idea who's going to implement them and how they're going to be resourced.' Regional groups are slightly unnatural, they have no obvious source of resourcing, it has to be created independently. So once federal government funds and grants dry up, you're sat there knocking on people's doors (P0 Po13 Other).

...we corresponded with the CEO at DEWNR asking about the State commitment to ongoing sharing of resources for adaptation planning. So, there's all the good 'in principle' commitments but the momentum is going to be Carbon Neutral Adelaide; adaptation planning will still be there, because of the positive messaging that came post-Paris (P19 Po14 LG RAP).

Short-termism is also driven by limited funding in some levels, resulting in the need for leading proponents to seek alternative investors.

.... it's a case that we don't have in this State Government, huge buckets of money. So, it's small amounts of money from State Government, leveraging money from local government, from NRM and also from the Commonwealth Government, mainly through the Natural Disaster Resilience fund which means everyone's got a little bit of skin in the game. So, that means there's a joint ownership. But the strength is being driven from the regions, communities, and local government (P37 Po2 Government).

This limitation of resources extends into individual and organisational roles and who is best placed to do what. Limitations in resources impact on where project officers spend their time:

Well, can a region run the facilitator network? Maybe, it's coming down to resources. If I'm off coordinating meetings, that's something for my steering committee. Are they going to be happy for me to take on that strategic State role, as it takes me away from the region (P22 Po15 RAP).

The GWLAP, like most community groups, grew out of a context where they were essentially underwritten by government funding to 'keep the door open' and then through competitive grants (P2 Po2 NRM). These community groups had to provide matching in-kind support. This relationship between community and government very quickly became one of almost total dependence (P14, P9). This limits community groups' capacity to participate in the RAP processes as they were not independently resourced to do so.

Economies of scale are also important. Small organisations with small budgets have to spend disproportionately larger amounts on basic administration and logistics. Larger organisations are able to attract substantial funding with which they can build their capacity to attract better project officers who are better able to leverage further funds. It also allows them to be more innovative and able to share their experiences with other organisations (P14 Po 11 Community Group).

The short-termism is augmented by partial programme development. In this case plans and strategies are often developed with limited follow-up in terms of action plans and investment strategies, i.e., who will do what, when and how, and how will it all be funded. A variation on this is the regional NRM Plans, developed by the NRM Boards, which were designed to be 'plans for the region' but the associated investment plans were essentially NRM Board business plans which dealt with only those actions which that NRM Board would fund. The rest of the Plan was to be implemented by other stakeholders and funded by other mechanisms.

... (with the) state climate change strategy ... the bit that was missing was some connection to a business plan, or an investment strategy. With the (NRM) Boards, at least, you have an investment strategy that sits behind their regional plan. So, the LAP has a role in being a deliverer, and an influencer, then it's a matter of the LAP being engaged with the policy and decision making authorities in that continuum of looking to try to influence decisions around policy and investment, but then also being in a position of being able to respond and offer services (P9 Po8 NRM).

The RAP process is a good example of how collaboration generates better outcomes than singular action and spreads the costs.

Local government has its fair share of issues with respect to accessing and allocating resources. These issues include sourcing external funds and strategizing and managing the allocation of funds internally. Some councils have budgets which sometimes are not fully allocated and so are aggregated over the years to become reasonable sums (P24 LG RAP, P29 LG RAP). There are also year-by-year funding regimes that impact on attracting and retaining staff and longer-term contracts and thus influence stability. Part of this is ensuring the CEO and elected members are well informed on progress to gain their endorsement of funds allocations (P23 LG RAP, P40 LG RAP).

...there was a contribution from each of the councils, ... (Council) had their fund. Two other councils also did. At my council, that wasn't going to be acceptable, so I literally had to go around cap in hand to a whole heap of different departments, and gather the 40 grand that

we needed, and justify that. So, ... there were probably about four or five different budget lines that our 40 grand came out of. And I had to justify how the original intent of that budget allocation was going to be achieved... I think it made us really think about what outcomes we were looking for as an organisation, in participating in this program (P23 Po2 LG RAP).

Councils can be constrained by the number of personnel they have in relation to their overall budget, and this can impact on the number of staff (full-time equivalents - FTEs) they can employ directly as opposed to using the same funds for contracting external capacity to get the job done; *'it's an FTE game'* (P29 LG RAP).

Local government resources and resourcing are also influenced by State Government policies and practices. A recent decision to make local councils collect the NRM levy which funds the government-run NRM Boards, put a wedge between them and resulted in residual tension still felt today.

The State Government has transferred the political consequences to councils but has taken the money (P15 Po3 LG Community Group).

State Government contributed directly to RAPs and also to a number of other RAP actions.

...this first stage was funded by the State Government. In the second phase the State Government had pulled back on it, and we had a lot of difficulty getting that second stage up. So, we've gone through the Emergency Management, Safecom, and State Government said, 'We're only going to give you 90.' They came back to councils, and said, 'You will need to contribute some funds' (P24 Po 8 LG RAP).

Though these arrangements are not always clear and issue free, limited funding meant the State Government was slow on developing a state-wide response to the regional plans and this left some regions hanging in relation to progressing implementation (P35, P40). The Government was uncertain about what was needed for all the regions at a state level, and it has gone through a number of restructuring rounds, reducing staff to undertake the job.

Local government has its own income stream via property rates and taxes and can be innovative in allocating other funds (P35 RAP).

Local government is in an interesting situation, where it has a property tax so, in financial terms is extremely secure, it can't go broke (P15 Po4 LG Community Group).

Accessing resources through partnerships and agreements can also influence the overall project outcomes. Each investor has their own objectives and goals which they work towards through their investment. Identification of which outcomes they are buying is therefore important to secure their participation (P19 Po9 LG RAP).

Participation in projects can require sharing the resourcing of the project. The lack of willingness to contribute financially can stall agreements and projects for years (P35 RAP).

6.4.1. Regional NRM and RAP funding

The lack of any formal organisation at the regional level resulted in the development of several administrative and financial systems to cater for differing partners and resourcing options. This diversity will continue into the implementation phase especially when reporting against the whole of the RAP. It is unlikely that the aggregation of the council actions will comprise the totality identified in the RAP, not least the extent to which the State Government contributed to any actions identified. There is also the need to resource evaluations and reviews of the RAPs in the near future.

State Government also has encumbrances where it come to accessing and allocating resources. However, it probably has the greatest capacity to transform the current status quo.

The problem arises with political commitment at the top, flows down the pecking order of agencies where you've got resource and economic agencies near the top and you've got environmental and social agencies at the bottom. I can imagine various governance tools that might help redress that; if every single decision of government

had to pass through a climate change lens and the person in charge was the Premier and their budgets depended on it, I think, in theory I can imagine how such a system might work. People might just roll their eyes and say you've got no idea, these people have been building fiefdoms over decades, they are not easily dislodged and 'Yes Minister'³ ... plays on that (P11 Po 8 Other).

Part of the issues are where political parties get their resources and their votes even before they are elected. Acceptance of support (mostly financial) from a range of organisations from industry groups to trade unions can translate into commitment to specific policies and decisions made when they form government.

The reality of electoral politics, and power is such that these vested interests are incredibly powerful. The oil companies, the gas companies; as a community we subsidise them through diesel rebates, millions upon millions of dollars, every year and most people don't even know about it. Certainly, the old parties are very beholden to powerful, vested interests, people who can make or break them at the ballot box as they see it (P11 Po 5 Other).

The broader economy has an influence on the overall operations of government.

The contraction, right across government, of its services and its budget tightening meant the availability of resourcing got smaller. That was right across other areas who were really actively involved in the adaptation planning processes. So, you see some agencies saying, 'With the number of people we've got, we cannot commit to a minimum of three workshops and then reviewing things.' ...Some other agencies did not have the resources. When you look at the plans, they're reflective of who's in the room (P33 Po 9 Government).

Ministers and Departments don't have the ultimate power to decide what gets funded, as there are often previous commitments that need to be honoured (P11 Other).

³ 'Yes Minister' refers to the British political satire sitcom from the 1980s written by Antony Jay and Jonathan Lynn.

There is competition between departments and portfolios and a distinct hierarchy within Government that influences who gets priority funding (P6 PCCC).

You've got that amount of money, and that portfolio. Each chief executive or minister around the table is going to be fighting for a dollar, to make sure they can deliver their portfolio outcomes. I'm not interested in delivering your portfolio outcomes, I'm interested in delivering my portfolio. I'm happy to involve you. But I'm responsible for delivering, and ultimately going to be held accountable, and collaboration comes at a price. If you've got money, and I have no money, you aren't going to collaborate with me, unless there's something in it for you (P25 Po 17 Government).

The PCCC has also played a role in supporting the allocation of funds to RAP implementation (P6 PCCC).

Strategies to get around the limited budgets have included leveraging funding from other partners and have had implications for the way the RAPs were developed, including bringing together a range of skills from participants where no coordinator had been recruited. This may be considered a viable option and outcome by the government but less so by other stakeholders.

So, you had a State Government providing money, regions providing money and also leveraging money from the Federal Government into each adaptation planning process. So that would be another area where you saw all teams coming together, because you could see it had benefits from each (P33 Po6 Government).

Which organisations brought what resources to the process also influences the governance arrangements (P33 Government).

...if you think of it like a company, the biggest shareholders have the most votes, and they're going to steer the company. If the biggest stakeholder is an NRM Board, you're not going to get the diversity the State wants... and so, there's a bit of argy-bargy at the State Government and funding agency level. Ultimately, if State is putting up most of the money, they will say, 'Okay, you do it this way. we're

going to get a consistent output that we can compare one region with another.' So, a failing at the State level is that they didn't source the funds to make sure that they directed the process. When they didn't have enough money to drive the process, and other stakeholders with money came into it, that's when you probably lost control at that level (P4 Po11 Consultant).

The lack of funds does not prevent some organisations from promoting certain policy positions.

I think it's captured politics... some will get up and say climate change is real and Adelaide CBD is going to be zero carbon by 20XX and here's our big announcement and a glossy brochure and let's hope that someone figures out how it's going to happen – because we're certainly not going to fund it (P8 Po6 Government).

Negotiating resources to undertake the RAPs has also been a challenge for government staff who have to deal with all the other partners looking for resources (P37 Government).

Resource limits are not the only constraint. Understanding and capacity, which can be developed through additional resources but are not dependent on them (you don't need to be wealthy to be smart), can get around some financial shortfalls.

There is a lot that a council who spent a couple of hours on Google could do because these problems are being solved by other councils in Australia and overseas. So, let's not overstate that. There is a willingness issue; something like NCCARF and the coastal decisions stuff all leads to significant capacity to deal with sea level. Certainly, the adaptation process is suffering from lack of investment by State Government because we created the leadership and permission and resources that council could use. Now we're only part way down that story and they cut the programs. So, 'Jobs done, you've got regional plans,' that's just the politics we're operating in. State Government still have a role of permission giving and seed funding. The State can ring up: 'Let's do this, I'm calling this meeting, I've got these incentives for

you to come, it's a priority for us' and be that face of change that a powerful government can use at low cost (P8 Po12 Government).

6.4.2. Consultants

The role of consultants in supporting the RAP processes went beyond provision of technical advice and included demonstrating expenditure to achieve preferred outcomes determined by the investors.

...primary reason for going through the assessment was to say, 'What are we going to focus on to get it into our council budgets?' The key criterion was expressed as 'Is it council's core role and responsibility?' That is an interesting outcome from a regional process and shows the problem with the regional governance arrangements (P36 Po11 Consultant).

Good consultants support their clients by assisting them with accessing additional funds, which can then be used to fund the consultants.

We've responded to tenders, but also been proactive in identifying (funding) opportunities, saying, have you thought about putting in an application for this? Then helping them write an application and doing the work (P28 Po1 Consultant).

Managing budgets and expenditure over an extended period of time, especially where there is a high degree of uncertainty, can be a challenging process. The adaptation pathway approach assists with determining when decisions may best be made. This can include delaying decisions to provide time for securing resources. However, there can be a tendency to delay decisions rather than undertaking serious financial planning.

There's a bit of stalling in SA because there are fears of what are we doing next. And how much it's going to cost. The pathway provides a perfect way to have a rational discussion. If we know there is a big investment coming, you just start budgeting for that time (P28 Po3 Consultant).

6.5. Coordination and integration

In this section integration refers to the more generic meaning for example, incorporating parts into a whole. This is separate to the departmental restructuring 'integration' of DEH, DWLBC and the NRM into one department. The coordination of governance practice is central to MLG. MLG is an integration of multiple actors and processes. *'So, multilevel governance enables different levels of activity to be coordinated by different decision-makers with different roles and responsibilities and levels of power'* (P16 Researcher).

Coordination and integration are in practice challenging processes to articulate and account for, especially given the diversity of activities which contribute to adaptation to climate change. As processes, they are more about how things are done than what is done (P12 RAP NRM).

Integration (is) understood as the smooth coexistence of the different elements of policy, including goals, policies and government levels involved in policy mix design and creation, so that conflicts are minimised and, if possible, synergies and complementarities are promoted (Howlett, Vince & del Río 2017).

Integration is more than combining and coordinating activities or processes. It includes synchronisation, embedding, the meshing of clogged wheels – where all wheels are causally connected but retain their own integrity and internal functions. The context helps describe the integration. Integration is about collaborative interdependence. Integration manifests the causality and synchronisation between interdependent systems generating synergies and reducing conflicts (see Figure 6.2).



Source: Dreamstime.com Images

Figure 6.2 Integration

A number of opportunities for coordination and integration existed but were not always maximised. The RAPs were seen as integrating processes which, e.g., brought different sections of councils together, so engineering started working with the environment department (P24 Po 10 LG RAP). The RAPs also brought agencies together, but the integration dissipated when they went back to their own offices. Resource and capacity limitation further constrained coordination (P24 Po17 LG RAP) variously described as ad hoc (P21 NRM) and fragmented (P8 Government). The implementation of the RAP actions was where coordination and integration were most likely to be strongest. (P12 RAP NRM).

The idea of integration was that people weren't working against each other and wasting resources (P3 Po 8 RAP).

You would think there is a natural interconnectivity with all these processes but indeed there is not. The connectivity is so ad hoc that everyone goes off and does what they need to do, to tick their boxes, but no one is ticking the same box. If there was a state coordinator, where those regions came together every two months or whatever, it would build the relationships. Because otherwise each of the regions is going to go in individually, try and do something with limited resources, and do these box ticking exercises (P22 Po RAP).

I think coordination is probably too strong a word. Liaison, touching base? So, there isn't coordination per se in that systemic sense, and if you don't do things systemically, well you're just fiddling at the fringe (P6 Po PCCC).

The facilitator network provided a substantial opportunity for the regions and the State to coordinate the development of the RAPs, including feeding into the State response (P22 RAP, P7 PCCC, P19 LG RAP).

Adaptation is still in that very early, nascent stage, immature age in SA in terms of genuine policy investment even though ... there'd be climate change policy in some form in every department now, but in terms of integration and sophistication in decision making, it's still got a long way to go (P8 Po3 Government).

Given the closed community that constitutes South Australia, this might make coordination easier. However, this tends not to be the case. The small community highlights the role and impact of key individuals, and this can have a disproportionate impact when the key people are gatekeepers.

Coordination of the four levels is fair to middling. Where we've got key individuals linking together that's where you see the action, improving that coordination, producing good governance, good systems, good decision making, good participation. Key individuals are cognisant of areas where things fall over. You get an individual in a key organisation as a blocker, doesn't matter how fantastic your governance is, that person can block it (P36 Po21 Consultant).

Some important outcomes have been achieved:

Multilevel governance is very important, but the issue is the politicisation of climate change. When we were in Paris, we had to have a sector agreement between Adelaide City and State Government on Carbon Neutral Adelaide (CNA). That was recognised. People were saying like, 'How did you get that?' It's vertical integration of policy. It's a state government, so you know you've got this. I think it is a challenge not just for us, but

internationally. It can drive a huge amount of good will; it can help you to clearly identify who has responsibility so you're not duplicating and having gaps. The most effective and efficient way of us getting anywhere is if there's coordination, and alignment of a governance arrangement (P33 Po 16 Government).

6.5.1. Collaborations and mainstreaming

Collaborations are not uncommon and mostly involve engagement in projects funded by participants many of whom have vested interests in the collaborations. Collaboration can also be based on organisational representation on steering committees, e.g., RAPs (P3 RAP, P29 LG RAP, P40 LG RAP) and working groups.

Council and ourselves have commissioned the acquisition of LIDAR data. They weren't initially keen, but there are a couple of commercial ventures which got their interest over the line and DEWNR central pulled some money out the hat (P13 Po4 NRM RAP).

While most collaborations are positive (P26 NRM) there is no strong collaborative culture resulting in pockets of tension between organisations often based on historical disagreements.

Institutionalisation of processes into everyday operations tends to be challenging for most organisations. This is often due to delays or misalignment of processes. One NRM Board incorporated their RAP actions into their sub-regional Action Plans.

They embedded climate change into each project, every time there was a funding bid there's, 'How does this contribute to climate change? (P26 Po3 NRM Government).

Another NRM Board did not develop its own adaptation plan because they embedded climate change across all their business areas (P12 RAP). The RAP process led by DEWNR engaged several other agencies; ensuring they embedded their commitments into their schedules is a challenge for DEWNR (P26).

Several institutional arrangements support mainstreaming adaptation to climate changes; these include the Cabinet Taskforce, SOG and the PCCC.

So, we're seeing change, but it's not embedded in day-to-day business for all departments (P7 Po8 PCCC NRM LG).

In ten years, I hope adaptation is mainstreamed, but it's not yet. We're no better off than other jurisdictions who also struggle. Sometimes you'll see a complete lack of knowledge and then you'll see the bright spark behind their PR spin, and people start to believe it themselves. You send Mike Rann overseas to say, 'We're pretty fantastic.' He's more likely to behave like we're pretty fantastic and we have to do something on the ground (P0 Po9 Other ex-Government).

The extent of collaboration and mainstreaming reflects the effectiveness of implementation of the enabling processes. MLG has the potential to support both collaboration and mainstreaming.

6.6. Monitoring, evaluation, reporting and improvement

Monitoring, evaluation, reporting and improvement (MERI) are often included as one of the enabling processes. This is due to the role they play in the project cycle, and adaptive management. Evaluations or reviews analyse the results of monitoring the actions to inform adaptive management. Monitoring, evaluation and reviewing projects are generally given a very low profile in NRM-related programmes reflected in the general budget allocated to many projects. MERI activities and thinking are also poorly represented in many officers' work schedules. Each RAP had a small, generic section on MERI (Resilient Hills and Coasts 2016b; Siebentritt et al. 2014).

...we had a framework about how they fitted together from a monitoring, evaluation, reporting perspective. We don't have that anymore. Apart from the State report card, there's no demand for connecting the regional plans and the State plan (P21 Po 3 NRM).

Where MERI activities were operational, they were basic and generally stopped when the processes got too complicated.

Certainly, start with the low hanging fruit, those easier tasks were being done; that would be a real indicator that things were happening. If the lower hanging fruit wasn't getting picked, that's a pretty good indicator that success on the harder ones is going to be damn near impossible (P3 Po 9 RAP NRM).

Clarity on the respective roles and responsibilities of MERI actions were also limited.

A State role is it has to be strong on monitoring and evaluation. Unless people are switched on and exercising good corporate governance and dealing with these issues, then they don't get dealt with. But perhaps if a monitoring and evaluation role was regulated, it would force them to do it (P7 Po 12 PCCC NRM LG RAP).

Reporting attracts much more attention as a means of accounting for the funding. Elaborate reporting formats and templates are designed, focussing on the outputs and not outcomes. Reporting data and products, including photos and videos, are used more extensively for broader media opportunities and publicity. For example, the Coorong Lower Lakes and Murray Mouth restoration project received significant funds from the Federal Government after the Millennium Drought. The sign in Figure 6.3 below is an example of signage that presents output data but fails to provide any information about the purpose or the outcomes (see Figure 6.3).



Source: Government of South Australia

Figure 6.3 Road-side sign promoting revegetation around the Lower Lakes

Furthermore, even reporting on RAP developments was unclear or underdeveloped (P19 LG RAP, P29 LG RAP).

So, at Council, we've got our three-year business plan. And (RAP) is an item in there and releases the KPIs around progress against actions identified in the RAP. How we're actually going to report on that is still to be determined (P23 Po 11 LG).

Current MERI practices are usually deferred to the end of projects with some monitoring undertaken for reporting to funders. There was little discussion on MERI during this research given the focus on planning.

Evaluation tended to fare worse than monitoring and reporting. When presented with some results one NRM Board basically ignored the results.

(Researcher) did some work on the Board's Regional Plan where he looked at the management action targets (MATs), and the resource condition targets (RCTs). The summary was, 'You guys are only meeting 48% of your RCTs or MATs.' Everybody looked around and one Board members said, 'Oh, well, that's not too bad. That's almost half!' There was a pause and (Researcher) said, 'That's worse than random. Your dog could do better than that!' It was a bit of a stunned silence, and they went their merry way (P32 Po 2 Government).

Evaluation also tends to be viewed in terms of accountability mechanisms (P29 LG RAP).

There isn't a mechanism of accountability for the Regional Plans, apart from the State's overarching plan If you're looking for an accountability mechanism in implementing those plans, there ain't one. We're talking about a process that was funded to just generate those plans. There's no ongoing funding to review these plans, have accountability mechanisms, implement, or employ project officers (P12 Po 17 NRM).

Reviewing the RAPs was generally a low priority for most people. They were still getting their heads around the planning.

...some of the climate change plan is twenty years ahead of us ... do you review the plan under the normal course of events, and how often? Determining the timeframe is important. Is it every three, five or fifteen years? Whatever happens, there must be enough momentum. Without anyone driving it it's going to fall flat. Then you get that far down and go okay we can't really use anything from the last plan, so we'd better start again (P3 Po 10 RAP NRM).

Discussion of MERI for any governance practices was non-existent. MERI of MLG is still very much in its infancy and therefore an area requiring substantial future research.

There is similarly limited published material on the evaluation of MLG processes. Marks et al (Marks, Hooghe & Blank 1996) and Hooghe (Hooghe & Marks 2001a) discuss the evaluation of the validity of MLG but not the process of MLG, and Rauschemayer, Paavola and Wittmer (2009) discuss peripheral processes such as participation but not governance.

6.7. Capacity development

Building capacity is probably the least developed enabling process as it can be a complex area. Whose capacity is being built, by whom and for what purpose are ethical if not practical questions. There are also high risks of hegemony and patronising attitudes perpetuating dominant paradigms. Consistent with a more organisational development perspective, the term ‘capacity development’ is preferred, so as to address some of the above risks. Within the context of multilevel governance and adaptation governance, the use and application of adaptive governance may manifest common features with capacity development, recognising they are not the same. Capacity development tends to be more prescriptive in working toward preconceived goals (e.g., specific capacities) and adaptive capacity is more responsive to prevailing conditions and moving away from least preferred options.

Local capacity needs are critical for enabling MLG in response to climate change (IPCC 2018a; Williams, Celliers, et al. 2020; Williams, Rosendo, et al. 2020). Pierre (2019) suggests that the practice of MLG is a strategy for building capacity. This makes sense with the continuous negotiation of governance authority and, where appropriate, the application of the principle of subsidiarity (Hooghe, L. & Marks, G. 2020). The governance path (Van Assche, Gruezmacher & Deacon 2020) taken by institutions influences their capacity development approach, since each institution is unique in their experience, context, and their future direction, which can be guided by both MLG and adaptive governance thinking (van Assche, Valentinov & Verschraegen 2021).

Janicke (2017, p. 119) recommends *‘Increase(ing) the capacity of the multilevel system of climate governance at each level, because each level offers specific potential for innovation and lesson-drawing’* to address the wide range of capacity

needs and the unique needs and interests of each level within the MLG system (Jänicke & Jacob 2006).

Capacity development is about ensuring the right capacity is available for the appropriate activities. This returns to the question of who is best placed to take on what tasks and roles and ensuring they have the capacity to fulfil those roles. This potential gap could be addressed by a more functional MLG arrangement.

There's a disconnect between the high-level science and what gets done on the ground and how people perceive that. When you talk about the different sorts of bodies at different levels, that's quite critical because while in some sense, there is a line of sight between what a property owner might do and the broadest climate change projections, if you're a scientist on the ground, that line of sight is largely illusory. This view is problematic, it's not just an intellectual discussion. It's a way of making it real enough and people being able to see how they can take agency in it.... There is absolutely no reason why the state government, the local government and the various agency arms couldn't get together and work together. What stops them is all these social things – the motivation behind it. It's all the things that we know in bits and pieces. We know that the councils don't like NRM. The Local Government Association produced a paper around how it should take over NRM and at the end of the paper it said, 'Having said all of this in the previous thirty pages, we don't have the capacity to do it' (P32 Po 12 NRM Government).

There is also the issue of diversity within departments and how the units talk with each other. The whole system needs to work together within and beyond departments.

You get a lot of interactions at the operational project level, a lot of information buy-in from people wanting to participate in the project. The gap is there's a group of senior people that are not well-bedded in the science and the implications of the policy. So, you've got a policy setting that's almost divorced from the implementation. And they're really good policy thinkers. Really good policy strategists. But not really good policy implementers. The South Australian

government probably hasn't done meaningful policy for ten years on any particular subject to do with adaptation to a new normal (P25 Po 4 Government).

Compounding the problems is that State Government has lost a lot of capacity through downsizing and not making comprehensive records of officers' deep experiences over many years before they leave.

...in the last five years government has lost 85% of the over-55 cohort. So, you lose a massive amount of experience before you start. And its experienced people who can have a balanced conversation with people, and A) have a reputation and a network, B) are authentic and trusted, and C) are not young whippersnappers that know nothing about life (P25 Po 13 Government).

The vicious cycles perpetuate; resources are cut which pressures people who do what they can, picking the low hanging fruit and compromising on the other tasks, resulting in the need to cover over any deficiencies and reducing capacity. This is short-term thinking at the cost of longer-term outcomes and is a false economy. State Government's delegation of responsibility to undertake the RAPs to the regions is not purely based on that being the best option, but also to keep government small and reduce costs.

A critical failure of the regional model with respect to the RAP is the lack of capacity development required to ensure the arrangements were secure, functional, and sustainable. A small amount of seed funding, some project officer time and some reports are not sufficient for ensuring competent process.

... these institutionalised regional arrangements should have continuity, actually concentrate on the development of leadership and capacity across the community and it's why the regions should be sending half a dozen people to the NCCARF conference. I think regional leadership and regional capacity building is a huge issue and should be front and centre with how we deal with climate change. We are a smart species; we should be embedding this stuff (P7 Po 17 RAP NRM LG).

The limited capacity to change is preventing people from changing, making adaptation difficult (P32 Government). Application of capacity development tools (Raymond & Cleary 2013) into building capacity is hindered by limited capacity to access these tools. Capacity development is also constrained across all levels of organisations including community-based groups who have extensive on-ground works experience critical for policy implementation (P14 Community group).

Consultants and researchers make significant contributions to capacity development (P16 Researcher, P17 Researcher, P28 Consultant). This applies not only to the development of tools such as the adaptation pathways approach but also its application in different contexts and then following through with the implementation and evaluation.

So, we've built adaptive capacity, but what's the transferability? So, pathways to me, is a classic example. We need to understand the fundamental principles of a pathways approach and then work out how is it applied in different contexts. I wouldn't say, take the Eyre Peninsula process and apply it in Vanuatu. What I am saying is that there are common principles to pathways projects that can apply anywhere. If I had these principles or core steps, how would I apply this in a local context, how do I modify the process? I still know that I need to get a certain type of output and outcome, but how do I modify it? (P28 Po10 Consultant).

Context is central to capacity development as the context encapsulates place-based knowledge which frames local action. However, the developed capacity needs to be mobilised and transferable as key people move on, and the contexts evolve.

6.8. Conclusion

Several key processes critical to all programme development and implementation have been discussed. These enabling processes, essentially the mechanisms by which things are done, are equally central to MLG and, in the absence of any overt

expression of MLG, are explored as potential proxies for MLG. The expression of these enabling processes could provide evidence of MLG thinking and practice.

In general, the expression of these enabling processes is limited and inadequate for several reasons including limited capacities, poor understanding of the value of the processes and a lack of enforcement by relevant authorities. For example, at one point it was standard practice, and a condition of funding, to allocate ten percent of NRM project funds to monitoring and evaluation (M&E). In many cases these funds were not spent appropriately and there were few lessons learnt that were taken into the next round of planning. Practitioners did not know how to do M&E, so spent little effort on it resulting in limited adaptation and few lessons, so practice improved only marginally.

While the enabling processes are all present in most activities, they are targeted, minimalist, and designed to be just enough to avoid criticism. These processes are politicised and contained so there is little interest in changing the system. They get designed to perpetuate the status quo. This includes using tools to justify low level expression. The (ab)use of the IAP2 spectrum to justify the current practice legitimises lower standards. Partner engagement usually occurs from the middle of a program, i.e., after initial design so as to constrain input through misuse of engagement tools and is generally disregarded. Engagement is generally a start-stop process, of short duration and limited in accessibility.

Communication fares a little better, tends to focus on what messages are being sent out and not what the audiences want to hear, takes the form of glossy marketing products, and does not encourage robust debate and exploration of alternative options. Terminology and language are manipulated toward specific outcomes and to minimise accountability.

Monitoring, evaluation, reporting, and improvement are some of the lesser processes, though reporting is probably the best off given its central role in accountability. Limited resources constrain the other processes. The promotion of adaptive management is contrary to the attention given to improvement and MERI practice in general.

Capacity development is the least developed of the enabling processes; capacity is often assumed to exist, and the community empowerment mantra is mostly rhetoric. More than other processes capacity development is focussed on individuals and the

capacity is not institutionalised or passed on through succession planning or when personnel transfer to other positions. It is not clear whose capacity is being developed, by whom and for what purpose. Skills in negotiating, liaison, mediating and collaborations, including as part of governance practice, are much needed.

Coordination and integration of the enabling processes are similarly critical and under-developed. Most coordination occurs through contract management and is usually promoted by those closest to the action – it tends not to be a core principle driven through the organisational hierarchy.

Resources are fundamental in facilitating the enabling processes and also used to control who does what – the delegation of responsibility is mostly unmatched by the allocation of resources.

Several enabling processes have been explored to investigate supporting evidence for the indirect application of a multilevel governance approach in addressing adaptation to climate change. The inadequate expression of these processes provides little evidence of any underlying thinking that might be interpreted as MLG. And while the existence of these processes is welcomed and necessary, substantial development of their practice is required to elevate current approaches to justify the neologism of MLG.

Chapter 7: Institutional Arrangements

7.1. Introduction

The way in which organisations arrange and connect internally as well as with each other is central to MLG as this influences the roles they assume and strategies they employ. These arrangements can be nested (Daley, Abel & Stephan 2014; Legge et al. 2011), complex and diverse (Ostrom 2010a). They are influenced by a several factors, including the context, position within any hierarchy, capacities, and political alliances and support, which in turn feedback into the expression of MLG in that context. MLG is used to analyse institutional arrangements (Stephenson 2013) and institutional arrangements facilitate multilevel joint action (Painter 2001). Further, the effectiveness of decentralisation processes is influenced by the design of decentralisation and the institutional arrangements that govern the implementation (Azfar et al. 2018; Azfar et al. 1999). Institutional arrangements shape decision-making processes (Alexandra 2019; Hassenforder & Barone 2019) and have a significant bearing on NRM outcomes (Alexandra 2020; Hasselman 2016). This final results chapter explores several areas related to the development of institutional arrangements and some of the impacts of the expression of these arrangements.

These institutional arrangements are defined as '*... the policies, systems, and processes that organizations use to legislate, plan and manage their activities efficiently and to effectively coordinate with others in order to fulfill their mandate...*' (UNDP 2016 quoted by Nurdin 2018).

The context within which these arrangements develop and evolve is critical and is also influenced by their operations. Each system operates in a unique context which can inform but cannot replicate the exact system. The plans and strategies created and used within the arrangements are likewise representative of these arrangements and reinforce them. Similarly, there is an equivalent relationship with the roles played by individuals and organisations in these systems. The chapter finishes with a summary that draws together the key points and, with the summaries of the other results chapters, prepares for the analysis and discussion (Chapter 8).

7.2. Context

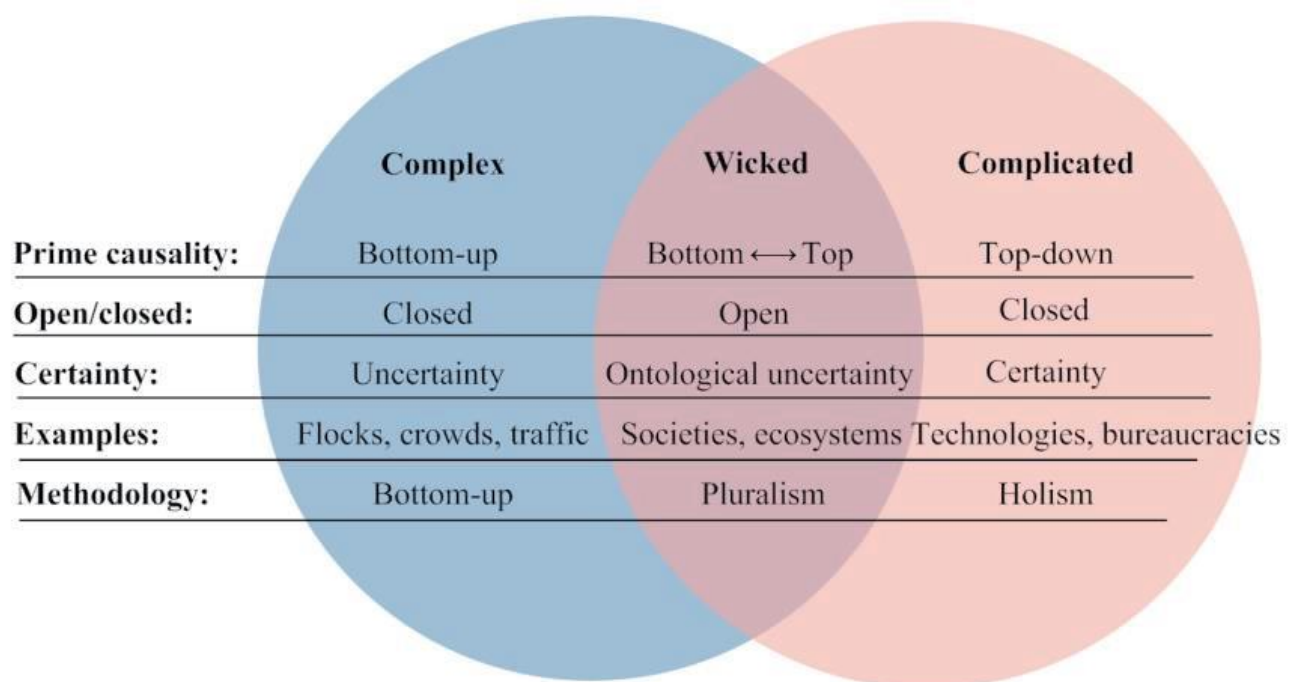
Governance operates within a context and that context influences how the governance plays out. What works in one context may not work in another context; *'...you organise according to context, so how you shape up depends on your context ...'* (P19 Po 23). Each context is unique and cannot be repeated. The context can be critical; context can be everything (Campos 2000; Hunold & Dryzek 2002). The context can be described from many perspectives, *inter alia*: geography, development, position within a hierarchy, time (date), and scale.

The diversity of the RAPs is a good example of the outcomes from different contexts. The same policy framework and guidelines and suite of participating organisations were presented to the twelve regions and, while there are similarities between the plans, there are distinct differences which go beyond the bio-geophysical parameters of each region. The different roles that the same organisations assume in the different regions are highly influential; an organisation may take on a leadership role, such as auspicing the project and hosting the Project Coordinator, in one region and be virtually absent in another. This is even more significant when in this case the same consulting team facilitated the development of most of the RAPs.

The context also includes where organisations and people sit within their respective developmental spectra or scales. These spectra can include formality (legal status), size, organisational systems, and Tuckman's sequence of development of small groups (Tuckman 2001; Tuckman & Jensen 1977). Tuckman proposed that small groups progress through five stages of development: forming (orientation, testing, and dependence), storming (resistance to group influence and task requirements), norming (openness to other group members), performing (constructive action) and adjourning (disengagement). As the groups progress through these stages (not necessarily in a linear fashion) they exhibit a range of characteristics which inform their operations.

The interplay between organisations in a range of positions within multiple scales contributes to the complexity of the systems and their wickedness. *'Wicked systems are not just a type of complex system, but rather a type of system where complexity is mixed with complicatedness, yielding a new emergent property — wickedness'*

(Andersson, Törnberg & Törnberg 2014; Törnberg 2017). The complexity of these systems results from the *'interactions of parts of the system with each other; interactions of parts of the system with the system as a whole; and interactions of the system with other systems with which it intersects, within which it is nested, and with which it may share interpenetrating components'* (Byrne & Callaghan 2013, p. 173). Wicked systems such as adapting to climate change are defined by their surrounding context – the intersection of a suite of domains (see Figure 7.1) – they do not exist in isolation from the conditions which make them wicked. In this context implementing MLG processes is effectively working with wicked systems. Figure 7.1 below is a conceptual graph illustrating the relation between complex systems, complicated systems, and wicked systems, as well as some typical properties and features of each type of system. The graph also serves to provide a metaphor; in the same way as the blue and pink colours in the diagram blend to create a new colour, complexity, and complicatedness mix — creating something qualitatively different.



Source: Törnberg 2017, p. 52

Figure 7.1 Complex, wicked and complicated.

So, in an MLG context it is important to assess where each organisation is located within each level and across all levels, as this will inform the way in which they interact with other organisations and levels and negotiate their roles and governing authority.

Imagine organisational maturity type models, where on some spectrum is the organisation? What are they ready to do? ... if they're here, right, at the beginning, there's no point in doing something which is up here, and vice versa. So, it can be difficult in a group setting, when you've got a whole diversity of people. Some are up there; some are down there. You don't know It can be good, because they can learn from each other, but there could also be trouble (P17 Po 7 Researcher).

The unique operational context of any programme influences the ability to transfer lessons or practices into other situations (Box 7.1). This has implications for the design and development of similar or related projects or programmes in other areas, as illustrated by the diversity of the RAPs. Box 7.1 below argues the development of models of practice for application in other contexts is common practice. Often the application is not appropriately adapted to the new context and consequently it fails. This can result in the model being rejected rather than reviewing the application.

Box 7. 1 The EcoFire project – from the Kimberley to Kununurra

The EcoFire project is a partnership programme centred around Mornington and Marion Downs Stations in the Kimberley region of north-western Australia. The project aims to reduce the impact of wildfires through strategic early dry season prescribed burns which leave small patches of unburnt land and fire scars of less intensely burnt areas. The project works through a partnership with a conservation NGO (Australian Wildlife Conservancy), local pastoralists, local Indigenous communities, and government agencies. The project has delivered significant outcomes in terms of cultural values, pasture protection for grazing and conservation of threatened species including the protection of the Gouldian Finch (Legge 2008; Legge & Fleming 2012; Legge et al. 2011).

The project has developed a model of land management that has changed the spatial fire patterns across the region. It has also demonstrated the value of bringing the right people together in the right way. In evaluating the success of the EcoFire project our team investigated whether the model had been successfully applied elsewhere.

The EcoFire project model was applied to an area centred on Kununurra in the east of Western Australia. While the same groups of partners (conservation, pastoral, Indigenous and government) were invited to participate in this project, it did not get off the ground. This was primarily because, even though the same partners were involved, different representatives had different roles and the different partners had differing relationships with each other. While the conservation NGO led the western project, another organisation was more respected in the Kununurra area. Because the model was applied too literally it failed to consider the different roles and dynamics of the same organisations in the new region.

This is not to say that models cannot be applied to different contexts but rather they must be built around the critical characteristics of the new context. A focus on extending the existing roles in the new context may generate better results.

The geography of a region has a significant impact on defining the context for the management of the area. Major features drive specific approaches and appear to influence the culture of the people involved. The River Murray plays a significant role in defining the SAMDB region and has from the early times well before European

colonisation. More recently, the River Murray has had important economic, social, and environmental interests engaged in the management of the region.

... everything surrounds the River, the Murray Darling Basin, there are whole departments working in DEWNR on the Murray Darling Basin Plan. ... You can get some leveraging, so we can work together and do stuff. So, it's actually quite beneficial (P26 Po15 Government NRM).

Similarly, local councils can be divided between those that have and do not have a coastline, which adds additional dynamics to the Resilient Hills and Coasts RAP where some councils have extensive coastlines which attract development but also risk of sea-level rise (P24 LG RAP), others have none. One region, being an island [Kangaroo Island], brings its own features (P22 RAP).

The nature of the landscape further contributes to the context. Some areas, like the 'SAMDB have large, broadacre land holdings, and real money ... whereas in the Hills you've got lots of small properties, lots of lifestyle people. Rains reasonably regularly.' (P29 Po 4 NRM).

Several social characteristics influence functionality. Adelaide, as the capital of South Australia and with a moderate climate, houses the vast majority of the population of the State and the ALMR NRM attracts greater revenue through levies which buy innovative capacity (Daniels & Good 2015, P12 Government). This leaves a small population in the rest of the state covering a relatively large dry area which generates significantly less capital. This can have its advantages, such as well-resourced regions having greater capacity to innovate and share their lessons with less-well-resourced regions and illustrates the metropolitan/urban and rural/remote divide that exist across most of Australia.

MLG arrangements that develop in one geographic area because of the characteristics of that region which determine the land use and therefore land practices and institutional arrangements cannot exist in other areas with other features.

Timing is another characteristic which impacts on the context. Timing includes, *inter alia*, when processes start and finish, the sequence of events and what else is happening in the external environment. With the RAPs bringing together several

organisations, each having differently progressed down several planning processes, such as strategic plans for councils and regional NRM plans, issues of alignment across the various processes emerged. The Resilient Hills and Coast RAP commenced after the Kangaroo Island NRM Board had already commenced their knowledge audit, and this cascaded into the RAP having a stand-alone section for Kangaroo Island issues (P13 Po 2 NRM). As discussed above, there is also the stage at which any organisation can be placed within Tuckman's forming, storming, norming, performing and adjourning scale. While Tuckman applies this model to small groups, it has been applied elsewhere in semi-government call-centre organisations (Hingst 2006) and citizen groups (Purwanto, Zuiderwijk & Janssen 2018) and, with adaptation, has relevance to government organisations, as governments are restructured, and new departments formed, and others discontinued. In one RAP the RDA started off hosting the project but then lost interest. Understanding why they did that may provide insights for future collaborations (P40 Po 12 LG).

External factors can also have significant impacts on the context and therefore institutional arrangements. The Millennium Drought was critical (P40 Po 2 LG) and triggered a whole suite of changes across many sectors from tourism to Indigenous land management and cultural protection to construction of bunds to large-scale revegetation programmes. Each of these brought a new set of partners together; for example, establishing a network of community nurseries.

Our current thinking and understanding further inform the operational context.

Most people, operationally, don't need to know that multilevel governance exists... We talk about decision context. That's saying that your level you operate at, is your decision context. It is the result of all of these other levels who interact with you and provide you with information within which you can operate. And if you're in your decision context, you have freedom to do a whole lot of stuff. You have agency. You don't actually have to know anything about all that other stuff, as long as it arrives, and is present, and for you (P17 Po 8 Researcher).

It may not be necessary or possible to know but a deeper awareness and appreciation of broader mechanisms can be useful in ensuring the systems operate smoothly and,

in the event of some collapse, they can be restored to some functional level. And while there may be some freedom within one's decision context, there are also responsibilities, at least with respect to ensuring alignment with other levels' decision contexts (Gorrdard et al. 2016).

Ensuring decision-makers are up to date with current thinking is also critical. Relying on working through old processes is unlikely to address new challenges.

...there has been no thinking around how to respond to catastrophe. We should be doing that all the time. How would we respond, what would we do? ... you run through scenarios, and you plan scenarios across the whole of government to get buy in ... so that when it does happen, we've been through this, we know what to do. No, we're always floundering, we resort to tried and tested old school stuff (P16 Po 10 Researcher).

Most contexts change on a regular if not frequent basis. This requires continuous review and exploration of the impacts of the changes on the operations of most systems. Changes within government agencies are perhaps the most relevant as they often have greater impacts than other organisations and they are more frequent and difficult to follow. Restructuring agencies is often about the redistribution of power.

The relationship with DEWNR has changed substantially since they've integrated the staff ... The boards are under legislation to do a particular thing and DEWNR has got its own view about that. I think DEWNR would love to take over the board's budget (P32 Po 5 Government NRM).

Changes in government structure and functions can be political and connected to several other processes which can influence where and how change in context is managed (P0 Po 4 Other).

Change in many areas is a constant that influences practice in many ways and to varying extents. In some circumstances change can be slow, controlled and guided but in others it can be rapid, external, disastrous, and difficult to manage. There is constant need for responding to change across many levels to remain on track toward intended outcomes.

We cast adaptation as a problem for our economy, but we've got this massive other change in our economy that's about China and manufacturing moving offshore (P0 Po 2 Other).

Changes in personnel through elections challenges continuity and often requires retracing steps to get back to the current position. This applies proportionately to both State and Local Government, where changes in political parties can have significant impacts on management.

So, when it came to the implementation plan, there was a challenge in terms of getting the subject of climate change adaptation on the agenda of a new council. So, for the first six months, you're lucky to get anything on the agenda of a new council because they're all being inducted. Previously the adaptation plan went through on the same night across all four councils, this time it took six months (P35 Po 8 LG).

There is a dynamic interplay between the people involved and the policy environment within which they operate. Some people (key influencers) operate effectively within specific policy contexts and are often members of groups of like-minded people. Niche groups attract individuals with the matching skills who, once in the group, reinforce the group culture. This has happened in small groups within organisations amongst project officers working on related projects or in more formal groups such as steering committees (P19 LG RAP, P22 RAP). This extends Garnaut's concept of the 'circularity of elite communication', whereby 'a small political and business elite talking to each other ... think that if seven or eight institutions are thinking the same thing, they must all be right. That's made them a bit impervious to information that has been around for some time about the changes in trends' (Garnaut quoted by Aston 2020). Of the two situations one could be taken as keeping the group on the cutting edge. The other example presents more of a constraining context where groups use their closed decision-making processes to maintain the status quo. Either case could shift policy in response, either to accommodate and enhance any developments or correct what could be limitations in the process.

7.3. Plans and strategies

Most planning is usually done within the context of existing or previous planning processes. Planning for adaptation to climate change is generally a new process because it is relatively a new issue, and it is more explicitly about how people and organisations need to change (P17 Researcher). Planning for climate change therefore needs to align with existing strategies for addressing related issues that exist at various levels. For example, climate change alters the type, patterns, and distributions of existing and emerging weed species and this needs to be reflected in changes to existing planning approaches (P20 NRM).

Climate change planning also needs to meld with existing plans at the lowest operational levels with additional conversations occurring higher up the hierarchy of planning (P21 NRM). Greater clarity around the functioning and complexity (P24 LG RAP) of the planning hierarchy is needed, specifically around reporting up and down the hierarchy (P21 Po 6 NRM). Planning processes and thinking also evolve and develop.

...we've obviously gone through a number of different planning circles over the last ten or so years... we're always trying to improve and do it better. So, we had quite a good framework under the last plan, but its siloed things. And they were always trying to look at how do we get people not to think in silos..., to think about the interaction, the complexity, the landscape approach. When the resilience and the system thinking came about, they were very keen because they were already trying to find a mechanism of, perhaps, looking at this differently.... They wanted to be able to talk about a landscape It was just something that was around at the time that really fitted a need or an opportunity to do something different that would improve (P21 Po 9 NRM).

Additional insights into enhancing planning processes often come from external sources. The resilience planning and thinking approach (Folke et al. 2010; Walker & Salt 2012) facilitated by Paul Ryan (<https://www.ausresilience.com.au/>) was utilised by several NRM Boards at the time (Daniels & Good 2015). The timing for this

exploration was right as several Boards were reviewing their regional plans. As was often the case the AMLR NRM played a leadership role but also sharing their experiences with other regions (P21 NRM). The inclusion of the resilience planning approach preceded the integration of the NRM Boards into DEWNR. The NRM Board and staff had greater ownership of the process, having been involved directly, than the ex-DEWNR staff who were used to their previous processes (see Box 7.2). Box 7.2 below demonstrates how government restructuring after each new government disrupts relations and collaborations requiring reconstruction of new partnerships. Officers with specific expertise are reassigned and often older personnel are offered early retirement packages without any debriefing, handover or exit interviews. This results in the loss of substantial amount of local knowledge.

Box 7.2 The Real Experts

Adjusting to new approaches can be challenging for some sectors. One outcome of a previous government restructuring brought the Environment Officers (mostly ecologists) from the Department of Environment and Heritage (DEH) and bundled them with water specialists and the NRM Officers from the Department of Water, Land and Biodiversity Conservation (DWLBC), affectionately known as 'Wallaby'. The integration then merged the NRM Boards with DEH and DWLBC to form a new Department (DEWNR). The ecologists usually kept to themselves being true scientists with strict adherence to the scientific approach and methods, and while they may have acknowledged the science behind resilience planning, it did not sit well with ecological planning. It took several years for them to accept the new paradigm.

And now it has all changed again with the development of the Department of Environment and Water (DEW), established in 2021. With each change comes disruption to staff, often with new people, new jobs, new roles and new priorities and new relationships with all their partners. Keeping up to date with who is doing what job in what department with what plans can be problematic, especially in terms of renegotiating new partnerships and new projects.

Planning is best performed at the level that is most appropriate.

Understanding the nature of the problem at the regional scale might be something useful because it can highlight those cross-jurisdictional issues, but the plans need to be developed at the scale at which people have a mandate and agency to act, and so, if that's not being done, then you're never going to get action, and so if the plan's done at the regional scale it will not be acted on... (P16 Po 3 Researcher).

Matching planning and governance arrangements is also essential; 'we should write regional plans that define the problem, describe the context (in the sense of 'calling to action') (Latour 2017, p. 26) and providing guiding principles for how to move forward including developing governance arrangements' (P7 PCCC) - the regional level was right for both the landscape and governance (P18 Researcher). A challenge for the RAP is that there is no formal regional structure: 'It's a missing level of governance in Australia ... the regional level of governance is immature and poorly defined' (P18). This immature governance context makes it difficult to plan and operate (P8 Government).

Planning for adaptation to climate change is not only about having a specific adaptation plan but also about reviewing existing plans considering the impacts of climate change. Plans for managing pest plants and animals may need to be updated (P20 NRM). The Federal Government also had a programme for updating regional NRM plans so they were 'climate ready' (P20 NRM).

Planning for climate change is further complicated by the uncertainties; it is difficult to develop plans that have specific actions which implementors can't align with and use to attract investment (P10 Community group). The planning process itself can also result in further challenges. In one RAP process of the three projected scenarios low, medium, and high impact, the medium scenario was chosen as it was considered to be the most acceptable balance. However,

It's not a realistic representation of the situation, and therefore, the basic assumption on which you based your adaptation plan is false, and the consequences of that are you're taking insufficient actions to come to terms with what's going to happen.... if you predicate your

planning on a falsehood, you can end up in 25 years' time in a situation where you have made no provision to deal with this issue (P15 Po 7 LG Community group).

Poor planning processes lead to poor plans which almost make it impossible to operate effectively and contributes to dysfunction.

...we've all been in that wonderful situation where we have 100 people. We divide them into ten tables, with a piece of butcher's paper. They come up with their ten items. We take the top three, the other ones are immediately discarded, and then we take the top three, and we amalgamate all those. We come up with one good idea. It will almost certainly be the least effective. The really good idea was on table seven, which was number three, or number four in the list, it didn't make it, but it was the one that was the winner, because we have a selection process that abstracts, to the point where you simply reinforce the normal tone, and that's what this (RAP) committee has done. It has gone to the safe middle ground, as opposed to saying the unpleasant truth is actually, we're tracking here, and if our adaptation process takes place at this level, we are not going to get there (P15 Po 12 Community group).

Plans without implementation are pointless and a distraction mostly for not doing anything – being seen to be doing something or for redirecting attention. Their purpose is other than establishing a direction for action. If plans are not meaningful in what they are and how they were developed, they waste precious time and resources. They need to be meaningful to those who will be responsible for implementing them. Plans that mean something, engage the relevant stakeholders in appropriate ways in their development and get implemented. Planning processes and products can still suffer from lack of relevance. Too many plans get put on high bookshelves and are not seen again (P7 PCCC, P5 Community group); *'...no one ever looks at (them), they don't actually mean anything'* (P29). If no specific mechanism is put in place to ensure their implementation, then nothing will happen, plans won't get used (P5 Community group, P14 Po 16 – 17 Community group).

Critical for implementation is ensuring the plans mean something to individuals, that they have skin in the game (P33 Po Ex Government).

That's how you would get action on the ground for adaptation, not developing plans at a scale that nobody has any mandate or agency or money to act on, and that's why the (RAP) will not go anywhere...it has been fantastic for other reasons, but it's not going to be acted on (P16 Po 3 Researcher).

Plans are developed from the context from which they are conceived. They will similarly be interpreted and used in a manner consistent with that context, thus reinforcing that context; top-down plans produce top-down processes (P40 Po 2 LG).

Consortium plans such as RAPs, where there are multiple partners, also get interpreted in different ways by those partners. In one RAP a regional implementation plan was developed and applied to all partners, who were to develop their own organisational specific local action plan. One partner developed a policy around implementation and worked from that (P23 RAP).

Legislation and policies form a more regulated and formal context to the point where there is little control on decision making, thus withholding power, maintaining control, and excluding local knowledge.

...councils are very much prescribed by the Planning Act, a product of the state government... but are driven by economic development imperatives.... There are a whole range of development activities that don't go to council at all. State government continues to restrict the capacity of council to make independent decisions. The recent changes to the Planning Act wish to remove all council members from those (panels).... What it does, is it takes out the local knowledge aspects of it (P15 Po 2-3 Community Group).

Broadening out the impact of legislation can be difficult even if parliamentary approval is obtained. From conception to final acceptance can be a rocky journey paved with a multitude of compromises and trade-offs.

...the Parliament's just rewritten all of our planning laws. Now one of the amendments is a state climate change policy, and basically what that will hopefully do is give that checklist I described earlier. So, that if a government department or a council wants to make decisions about land use, one of the things they'll have to do, is run it through this checklist in the state climate change policy and it will be questions like, will this make climate change worse? Does this recognise that climate change is real? And that we need to not make decisions that we're going to regret in a few years' time. Now, we aren't the executive arm, so we didn't write a climate change policy, we just said there must be a climate change policy. It's up to others to write it and they can write rubbish (P11 Po 6 Other).

7.4. Institutional Arrangements

Institutional arrangements refer primarily to organisations involved in climate change and RAP processes and the interactions they have with each other. The nature or type of organisation also impacts on their involvement; government organisations have different roles to informal groups. Institutional arrangements can also be influenced by the internal structure and functions of organisations, and this can change with changes in government, reshuffling of cabinets and restructuring of organisations (P33 Po 1 Government). Keeping track of who is doing what can be a time-consuming activity but, in the context of MLG systems, is essential to respond to changes and limit distractions from working toward agreed goals.

...in the (RAP), both (Councils) also have to sit within the (Region), we need to build our relationship between (RAP) and (Region) and to maybe see if there's one of their officers who wants to come as an observer to our meetings (P40 Po 6 LG).

Building institutional arrangements can result in perverse outcomes.

...the problem is every time you create a new body, it's just another silo, the problem is too many silos that aren't talking to each other,

that aren't coordinating. The problem is we insert planning processes, and report writing, and investigations into the process, rather than actually doing the process. The process has been clear for decades. There's no question, we have to stop producing carbon dioxide... (P15 Po 11 LG).

The establishment of mechanisms of governance can be relatively easy but having the skilled people may be a further challenge. Politically savvy people are scarce and, by definition, operate on the edge which means they either don't last long, or they are compromised beyond limits of effectiveness.

To the extent that you want to really facilitate some sort of a whole-of-government response, you should look to set up robust mechanisms. But by mechanisms, I mean structures in government that would really push in the direction of implementation, or involvement from the relevant agencies, with those regions, as much as possible.... To achieve those things, you need really, seriously savvy public servants, ... hardworking and capable people creating those mechanisms. There's a group of chief executives, ...one of the cabinet subcommittees... but there's also a group of managers.... It's possible to create those mechanisms, but you just need a lot of know-how, and a lot of understanding of ...how the machinery of government really works (P12 Po 20 - 23 NRM).

They are constrained by how we can get the stuff up the line and, those in senior positions have to be very astute political operators, ... when I'm talking state government and the ministerial advisors, they are the party arm, they are the political arm of decision-making, it's all to do with party politics and who's within the government and power bases (P19 Po 5- 6 LG).

The South Australian Government, building on the Prospering in a Changing Climate framework, broke climate change activities into suites of policies and programmes. These are well represented by the diversity of policies associated with the 2015 development of the new climate change strategy. The four parts of the new strategy (Lead, Adapt, Innovate and Reduce) are augmented with the Carbon Neutral Adelaide

and Low Carbon Economy initiatives. In addition, there is the Building Upgrade Finance and Renewables SA projects (P33 Government). These instruments are all linked but there is limited articulation of how these connect. There is also the longer standing Premier's Climate Change Committee (PCCC) which seems to have survived the changing political dynamics with successive governments.

The core of most institutional arrangements is driven by higher political imperatives, and this has ramifications for where resources go and what gets done.

... we have an election; we vote for who's going to be the government. That government then appoints the ministers, the ministers are at the top of the executive, beneath the ministers are all these government departments and the roles that ministers have, whilst they don't hire and fire individual public servants, they do have control over the CEO and getting a CEO in charge of a department who is committed to this sort of direction is absolutely critical. The CEOs are then responsible to the executive or the ministers and the Premier. They're responsible for the budget, ... there is a pecking order; Treasury's at the top; Environment's at the bottom (P11 Po 6 Other).

The State also participated in national processes which can have implications for the international context that overlaps with some of its activities (P33 Po 12 Government). In what could be perceived as grandstanding on the international stage (P7 PCCC) and going around the Australian Government, the South Australia Government attended several COPs-related activities primarily through two Premiers being co-chairs of the State and Regions Alliance.

7.4.1. Power and politics

Power and politics sits behind a lot of what happens in and around climate change and governance actions and practices, though little of these power dynamics is covered overtly and front of mind, partly because limited attention has been paid to conceptualising power in a MLG context (Marquardt 2017). It would be naïve to think that there are no political and power struggles operating below the surface.

Of key relevance here is that within the context and practice of MLG the negotiation and allocations of decision making authority are seen by some as the allocation of power. Power sharing, inequalities and struggles influence MLG processes (Ishtiaque 2021). Negotiating power relationships is a prerequisite for successful MLG. Unresolved power struggles not only limit participation, but they also reinforce existing vulnerabilities (Nagoda & Nightingale 2017) and impede coordination (Stock, Vij & Ishtiaque 2021). Different levels of governance use power in different ways to strengthen their roles, e.g., governments using their power to push policies and legislation through to local actors accessing resources to undertake their actions (Vij et al. 2019). Powerful national, and sometimes local actors can dominate decision-making processes and capture governance processes (Nagoda & Nightingale 2017; Sova et al. 2017). This 'elite capture' can limit inclusive practices indicating greater effort is required to promote participation. Power imbalances across levels suggest deeper institutional difference in governance and can direct future negotiations and collaboration (Di Gregorio et al. 2019). Garnaut's 'circularity of the elite' provides another expression of this protection. He argues that '*a small political and business elite talking to each other ... think that if seven or eight institutions are thinking the same thing, they must all be right. That's made them a bit impervious to information that has been around for some time about the changes in trends*' (quoted by Aston 2020).

The politics gets played out at multiple levels and between a range of interested parties. A recent example of power and politics played out in the September 2016 blackout in South Australia which cut electrical power to hundreds of thousands of residences, businesses, industries, and services, and generated wide criticism and blame placed on the transition to renewables. While the Australian Energy Market Operator (AEMO) analysed the technical causes and solutions (Australian Energy Market Operator 2017), the politics got played out in the media (Joshi 2020a, 2020b; Slezak 2016).

And it's interesting, the last week with the blackouts.... the 40% renewable energy in the grid and our emission intensity's obviously much lower. So, what does that mean for the grid and transitioning? And we'll see what the findings were. It was very windy, that would've happened no matter what your base load was and whatever state you

were in. But it's a political point scoring thing that's happening (P33 Po 3 Government).

In-depth analysis of the political machinations around adaptation to climate change are beyond the scope of this thesis albeit that the final analysis may boil down to the fact that it is all about power and politics. A few examples will suffice to illustrate the scope, range, and pervasiveness of political interventions.

Within the context of this research, i.e., the state, region, local and community hierarchy, governments play a key role in exercising power at multiple levels and in several ways.

...we've got an elitist structure..., power is quite centrally held ... and has been very centrally held for a very long time...that plays out in many different ways even the state - local government (relationship), the power is vested with the state. Local government is purely an instrumentality (P19 Po 5 LG).

The government itself also has internal power dynamics, where different ministers and departments have greater standing than others and where individuals jostle for power.

... DEWNR and the minister doesn't have the standing to influence other government agencies to take notice of adaptation and to act (P35 Po 17 LG).

But I think they've appointed him for his value in commanding credibility with other cabinet colleagues, So, for Ian Hunter, having (PCCCC member) with you, gives Ian Hunter far more seniority for the climate change agenda. We had a period where climate change was arms-length, Weatherill didn't make it a priority for the first few years, because it was a Rann agenda, and he wanted to leave it alone. But now he's come back with a vengeance (P0 Po 10 Other).

The politicians also play politics with the public, pushing the limits of acceptability; if they are not challenged, they push harder (P11 Po 12 Other). This politicking includes developing programmes, such as Carbon Neutral Adelaide (P11 Other, P19 LG RAP), that look good in the public eye but do not make significant contributions in addressing

the real issues. CNA combines benefits of being seen to be green or 'going green to be seen' (Griskevicius, Tybur & Van den Bergh 2010) and supporting 'changing the economy' (rescuing) by expediting the development of new technology services and new jobs in a time of a weakening economy (P37 Po 7 Government, (Premier's Climate Change Council 2013)).

...the sad thing is that it's been the politicisation of climate change that has made it difficult at that higher level ... So, do we have a seamless hierarchy? No, we don't, and I challenge anyone to find one that is seamless (P37 Po 11 Government).

Part of this is about controlling the processes and what happens when.

So, urgency in government is a political imperative, to generate urgency, you need it to go to the top political level. It then that trickles down very quickly to chief executive, the departments, and so forth. climate change is a very strong-moving train in political thinking, very fast in geological terms, slow in political thinking. How to generate urgency in the political sphere is a good question (P12 Po 28 NRM).

Political influence can also be expressed through bureaucratic processes and the machinations of government and reinforce the politicisation of the bureaucracy.

The ministerial advisor took the red pen to the strategy, threw out a lot of stuff he didn't want to hit the front page of the Advertiser (local newspaper). The Office of Sustainability had a fair bit of influence, but not the influence it was to have under Mike Rann the move (of the Climate Change Unit) from Office of Sustainability to Premier and Cabinet, led to some very fast action, ... Mike Rann started going to COPs, Conference of Parties. They (Senior Officers) sat down with Rann at the beginning, they did a bit of brainstorm around the office, '...here's a bunch of ideas.' Rann said, 'I like these three', (Officer) wrote cab subs (cabinet submissions) for those three and negotiate it as much as they could. There's never a substitute for trying to get the people that you need onboard because they can blow

your process any time. But when you've got Mike Rann asking for it, they've got less power to blow your process and it will become a ministerial fight (P0 Po 7 Other Ex Government).

As discussed above, part of the context is the organisational development of any institution, and this is reflected in the maturity of the organisation which can be manifest in the governance and operations of the organisations.

Well, how do you develop that maturity? ... it goes quite a bit deeper. So, you could do it if you had leadership from the top, this is a pretty big call for South Australia because we are seeing the institutionalisation of the political system, so the public sector is basically captured by the political parties ... so essentially the entire public sector exists to serve as a political machine. This is the nature of democracy and so that is a very difficult system to get long-term thinking into it. So, the only place we can get long-term thinking is either in the senior politicians or there's got to be competent people in ministerial offices as senior advisors who will take the charge and carry it through (P8 Po 3 Other ex-Government).

At departmental level there is also some tension between when and where to compete against each other as opposed to collaborating with each other.

...the whole-of-government approach happens mainly through governance, government structures and committee functions, and things like that. So, normally government is a chain of command in a hierarchy structure. But the nature of it is that you need partners to bring things to the table that you don't have (P25 Po 3 Government).

Sometimes the power dynamics are because of government's own making. The NRM Boards, as quasi-independent statutory bodies, report to the minister but have contracted DEWNR to run their business. DEWNR gets frustrated because '*...they are the experts, they know best. Why should they let a bunch of country bumpkins tell them how to spend the money?*' (P32 NRM). This tension between DEWNR and the Board is visible in some of the Board meetings (PO 17, Appendix 5).

The government exerts some power through manipulation of policy and development of legislation. The collection of the NRM levy by Local Government, as required by State government, *'effectively transferred the political consequences to councils'* (P15 Po 3 LG). And while the State Government would like to amalgamate Local Government, Local Government would like to remove state government *'all these power dynamics overlay or underlay the issue of climate change'* (P32 Po 6 Government, P34 LG).

Power does not only reside in governments. Big industries, subsidised by the community, though most people don't know it, have vested interests in maintaining the status quo and use a range of strategies to exert their power (P11 Po 5 Other). Oreskes and Conway (2010, 2011) have demonstrated the power of lobby groups to sow doubt amongst the public, delaying action on climate change. Australia is not excluded from such practices as Taylor (2014) illustrates. Even the MDBA is guilty of *'fabricated uncertainty'* (Quiggin 2008).

Individuals can also exert power if acting collectively. Mass community campaigns against university investments in fossil fuels can force them to divest (P11 Po 5 Other). In other areas community groups have limited power, despite the rhetoric around *'community empowerment'* (P5 Po 4 Community group).

7.4.2. Committees and working groups.

The relatively recent inclusion of climate change as a government issue has resulted in several new committees and working groups. Most of the key committees are high-level government entities and include the Premier's Climate Change Committee (PCCC), the Climate Change and Carbon Neutral Adelaide Cabinet Taskforce and the Senior Officers Group (SOG). Given the nature and high level of these groups, accessing information on their functions and operations is challenging, most interviewees had limited knowledge of their terms of reference and their function as Cabinet committees are confidential (P33). Some of the information obtained was inconsistent and potentially inaccurate. The lack of information on these high-level institutions does not appear to concern most people – the confidentiality is just taken for granted.

The PCCC is probably the most accessible, being established from the Climate Change and Greenhouse Emissions Reduction Act 2007 (South Australian Government 2007a) and therefore having formal reporting and accountability requirements. The PCCC's central function is to provide independent advice to the Government (P6 PCCC). Of interest here is that PCCC must provide an annual report (Premier's Climate Change Council 2017) for example to the Minister who must, within six days of receiving the report, lay a copy of the report before both Houses of Parliament. The PCCC provides advice on request from the Government but is also free to provide unsolicited advice. It can also be a sounding board for the Minister (P6 Po232 PCCC). The PCCC was instrumental in developing and publishing South Australia's Climate Change Vision Pathways to 2050 (Premier's Climate Change Council 2013), requested by the Premier and the Minister (P33 Po5 Government).

While the PCCC has produced some good material and supported several initiatives, including advocating for funding for RAP implementation (P6 PCCC), there have been times when there were opportunities for improvement and the existence of the Council was in question (P7 PCCC, P6 PCCC). Changes in the leadership turned the Council around. There was also an opportunity for the PCCC to hold some robust discussions on a range of topics and present a strong united voice, but these did not eventuate (P0 Other). The independence of the PCCC has also been challenged (P8 Government) as the membership, including the Chair, is appointed by the Minister and DEWNR controls the agenda.

So, from a governance (perspective), I would say a chief role (PCCC) is checks and balances, but also a supporter and advocate to help move things where they're intractable (P36 Po 20 PCCC).

... think at the moment, one of the best things is that Minister Hunter comes to nearly every meeting and spends half an hour, 45 minutes there, downloading, and we get to speak to him, as well. And the ability to access him... (P36 Po 20 PCCC).

In reflecting on the what the PCCC might have changed, one interviewee (P11 Other) noted,

... the test for me, would be, as a result of having a Premier's Climate Change Council, is the State moving away from fossil fuels? No, it's not. As a result of having a Premier's Climate Change Council are we finishing the electrification of the Gawler line or are we building freeways at Darlington and Torrens Road? Did we waste \$900 million on a stupid two-story freeway on South Road - the South Road super waste, as we like to call it? So, if you ask me that question: Oh, the Premier's got his Climate Change Council, has it made a dent in any of those? No, they would say, that's not right ... every time we build a freeway, we put up bike lanes next to it (P11 Po 7 Other).

PCCC representatives also attended most of the public consultation meetings for the new climate change strategy. In addition, it played a role in supporting the RAP process by inter alia facilitating a workshop to discuss the RAP process (Premier's Climate Change Council & Department of Environment 2016). It is interesting to question why DEWNR did not lead this workshop.

As I understand it, PCCC is quite self-directed in some ways, and certainly, when they put out their vision, which is a very, very ambitious document, that was very much their thinking, is my understanding. It doesn't strike me like they were directed by anybody in particular. They're senior and smart enough that they can direct themselves (P12 Po 23 NRM).

It is of interest to note that the PCCC continues with successive governments of different political persuasions.

7.4.2.1. Climate Change and Carbon Neutral Adelaide Cabinet Task Force

Sometimes called the Climate Change Taskforce this is a subcommittee of Cabinet, that is, its members are ministers from different portfolios.

... the Carbon Neutral Adelaide Cabinet Taskforce? Chaired by the Premier. ...Probably more a focus on emissions, than adaptation.

Underneath that, there's a senior officials' group, chaired by the Minister of Climate Change, with key CEOs from government agencies, which includes all of those ministers, CEOs, plus others. And then, under that, there has been a Climate Change Working Group. And that has, more recently, expanded into a number of working groups, of which one....an Adaptation Working Group. So, adaptation is, actually, part of the terms of reference for all of that. And that Group, specifically, will be tasked with government response to those twelve adaptation plans. ... there's a commitment in the climate change strategy to develop a whole-of-state-government adaptation action plan... what are the actions the key things that are crossing all of them. So, if it's a bushfire, or you don't want to just deal with bushfire in the Adelaide Hills, you want to have a consistent, coordinated, state-wide approach, working with the FCS, and the CFS, and the MFS, etc. (33 Po 13 Ex Government).

One role of the Climate Change Taskforce will be to approve the final State Government Action Plan developed out of the twelve RAPs (P37 Po 7 Government).

The Senior Officers' Group (SOG) is made up of the Chief Executive Officers of several Government departments. in this case this SOG was established, *inter alia*, to work on the climate change strategy and to provide for a whole-of-government response to changes in national climate change policy. One view is the SOG was set up '*...because it suddenly become an important issue and the Premier realised that the Environment Department is in a lowly position to coordinate other CEOs and they just wouldn't turn up*' (P6 Po 194 PCCC). The Minister for Climate Change chairs the SOG, which is not standard practice (P31 Po 1Government).

The SOGs are designed to be the highest level of decision making and problem-solving, below Cabinet. ...the SOG tends to run a week before the Cabinet taskforce and often the agendas will be mirrored, ...but it's about influencing the players. We've got the Premier's Climate Change Council and so Bruce Carter is the Chair of that, ... and Bruce is also on the Premier's, sort of ex-officio, on the Taskforce to bring his voice and wisdom into the room. It's unusual to have a

non-Cabinet member in as a member of the Taskforce (P31 Po 5 Government).

The establishment of these groups potentially compromised the role of the PCCC by removing the mandate for advising the Minister and Government on these related issues (P6 PCCC).

Other committees and groups include:

1. The Natural Resource Committee of Parliament which has final approval of regional plans and any increases in the NRM Levy (P26 NRM),
2. The NRM Council,
3. The Sustainability Roundtable (P0 Other),
4. The Strategic Reference Group with representatives from different Government departments (P35 RAP).

Many other issue-specific committees and working groups support the Government, even if only on a temporary basis. The barrages at the end of the River Murray provide a good example.

...if you want to talk about a governance process we have a Murray-Darling Basin Coordinating Committee and that sits within this agency. So, SAMDB sit around that table, licensing people, the science people, the river operators, and the policy people. So literally it's a coordinating committee of people within DEWNR ... Then beyond that there is a State Water Policy Forum. which is all the chief executives who have an interest, including SA Water, that sit round that table who would deal with big higher-level state-wide water issues. And then from there any issue will go to Cabinet (P37 Po 9 Government).

7.4.2.2. Steering Committees

The Steering Committees are described in Chapter 4. Of note here is the role they played in the institutional arrangements in relation to governance of adaptation to

climate change. The Steering Committees' role focussed on coordinating the interests of the participating partners.

...the governance has really been a case of how you get everyone around the table. And some of them are quite challenging because if you look at the one in the Hills, they are unique, you've got Hills councils, you've got coastal councils. So, pulling those all together is quite a challenge because every council has slightly different priorities (P37 Po 1 Government).

The organisation which hosted the RAP Project Coordinator was able to influence the process to a greater extent (P3 Po2 NRM).

Some Steering Committees acted like filters, bringing together interests, priorities, and resources from one side and technical expertise, legislative and regulatory requirements, and funds from the other and filtered this all through the RAP guidelines. This proved to be an interesting balancing act on several levels: within the Steering Committees' members and between the two sides of the filter. For example, each RAP chose a level within the range of projected scenarios. If the State had nominated which scenario to use (P22 RAP) then there would have been less disagreement within the RAP process (P15 LG) and greater consistency across the regions.

The Steering Committees were also able to direct the RAP process by deciding critical issues such as memberships of the Steering Committee. One RAP Steering Committee excluded other potential partners, such as a community, thereby maintaining control of the Committee even though it would benefit the project (P22 RAP, PO 7, 13, 15, 19 Appendix 5).

Steering Committees were established in the twelve regions as there were no existing regional level entities capable of fulfilling the roles. Most of the Steering Committees comprised representatives from the same small number of organisations, including local government, Regional NRM, and Regional Development Australia. Several Steering Committees included other partner organisations such as Indigenous organisations and industry groups. There were also representatives for several Government departments, with DEWNR playing a prominent role throughout the processes, including Health, Education, Emergencies Services, PIRSA and some of

the utilities. The extent of community engagement in RAP processes varied significantly from large, regular workshops to consultation on draft plans.

7.4.2.3. Sector agreements

Further to above in Chapter 4, sector agreements have been useful instruments as communication tools (P0 Po 10 Other). A sector agreement between the state government and EPICCA '*...forced us to work together. It nominated who was going to work together, what we were going to work on, created the governance and the outcomes that we needed. Wouldn't have done it without that sector agreement to just define structure*' (P0 Po 10 Other). Sector agreements consolidated partnerships and brought new players, specifically some industries, into the arena. As with most instruments they are less valuable on their own and need to be supported by related processes. The sector agreement does not commit partners to agreed actions, so the availability of resources to support the agreement can be crucial to their longevity (P19 Po 14 LG, P33 Po 6 Ex Government). It is not clear what sector agreements have or will contribute to longer-term planning and implementation.

7.4.3. Regions

Only one regional-level organisation of some capacity exists across the state to lead the RAP processes: the regional NRM Boards. In some ways, they were ideal except for their variable relationships with councils (P8 Government). The decision to use planning boundaries for the RAPs generated challenges as there were no other existing administrative arrangements in place and new partnerships needed to be developed.

...people talk about the need or failures to get coordination amongst the levels. I think we certainly need to do a lot more thinking about how you get that coordination and I think it's actually quite interesting that we have inserted this additional level of regional governance, ... the NRM groups, the local government associations and the RDAs, all have authority for completely different places, when you put

together all the bits in the different sectors one of the emergent issues was that there was no entity around that coordinator at the regional scale (P18 Po 2 Other).

If NRM boundaries were chosen, the diversity within the regional NRM planning would have accommodated the diversity of climate change issues; the awareness and experience of working with regional priorities provided a sound basis for ensuring the regional priorities were captured in the RAP. With planning regions, a greater diversity of hosting arrangements and planning approaches resulted in significant variations in critical processes like stakeholder engagement (PO 7, 13, 15, 23 Appendix 5) and was likely to present further challenges with implementation.

This diversity generated inconsistency across the RAPs, making implementation, evaluation, and review more difficult than if, one type of organisation led all the RAPs whether that be a local government or NRM board.

...the NRM system ... and a lot of people derided it, and would love to get rid of it, but it actually gave us a platform to have these conversations and these debates in a supported fashion at the regional level (P7 Po 4 LG).

In some case regions were seen not just as 'another level of government' but as an alternative to local government (P29 Po 3 LG). Local Government has several regional level bodies such as Local Government Areas (Local Government Association of South Australia 2019, 2021), and section 43 and 21 committee (P29 LG RAP) but these are unsuitable for leading or hosting any RAP processes.

Regionalisation in South Australia has a varied history, and this has been added to by the use of planning regions for the RAPs. This decision has been problematic because there has been no broad cross-sector experience of collaboration or administrative arrangements and new arrangements had to be developed for each RAP. This does not belie the potential value of the use of regional approaches but as with other approaches there needs to be a full and comprehensive approach that supports and reinforces the regional arrangements. Given this, the regions have played a key role in influencing the development of the RAPs and this is likely to follow through, to a lesser extent, into the RAP implementation.

7.4.4. Affiliated groups

Each region develops networks and groups to support their actions, and these are specific to their particular context (P13 RAP, P24 LG RAP). These groups can be informal; that is, they don't have any legal basis or standing, or more formal such as Section 41 Committees of Council, formed under the Local Government Act 1999 (South Australian Government 1999). Alexandrina Council, for example, has both a section 41 Committee: The Climate Emergency Advisory Committee, and the more informal Environmental Advisory Panel. These groups are mostly internal, and some have community participants. Such groups can be think-tanks, advisory groups, reference groups and working groups. These groups vary in type, scope, capacity and function and duration. Given their transient nature, it can be difficult to follow them and gain access to their discussions.

The Adaptation Practitioners Network (P19 LG RAP, P23 LG RAP, P40 LG RAP) is the most relevant here. This is made up of the Project Coordinators employed to support the various RAP processes and was used to share learning experiences, knowledge, and solutions to barriers. The Network was run by the members, met intermittently, and depended on the organisational capacity of key leaders within the group.

There would be great benefit to having it more structured more systemised. information sharing, agreed administrative arrangements, similar to what I did when I worked on Local Agenda 21, we actually set up a network and terms of reference for the network, that's now the environmental sustainability network, so, it must have been the right thing to do because it is still in existence twenty years later (P19 Po 11 LG).

This network, discussed below, could have been a much more influential mechanism but was not appropriately supported by government. LGASA's Science to Solutions (Local Government Association of South Australia 2014) also provided a process for sharing between regions (P35 Po14 RAP).

The State Government also had internal informal groups, and these emerged and evolved with new policies and practices. It is understood that a cross-departmental

group was formed to develop the State's response to the RAP. Other departmental groups were also formed but it is not clear how formal these were and what their standing was (P40 LG RAP). One such group was the Water and Climate Change Unit in DEWNR.

These groups seem to have provided a support mechanism for various projects and served as engagement tools for several officers. It is difficult to explore their effectiveness, given limited access, but they are common, existing in most organisations for at least some of the time, so presumably generate some benefit. Better use of these networks and groups could be made, though this might require significant shifts in values and attitudes, for example moving from a more competitive approach to a more collaborative one.

7.5. Roles

The roles taken on by organisations and individuals have a significant influence on what is done and how it is done. Mostly roles are assumed based on the type of organisation, its objectives, and where it positions itself within the hierarchy. Roles are generally not negotiated and little attention is paid to formulating roles within the context of the surrounding organisations. The adoption of particular roles by any organisations may limit the availability of roles for other organisations, not only in terms of whether they take on a related role but also how they might take them on. One particular niche may be occupied forcing others to find alternative niches.

On an individual, personal level, role occupation can similarly influence existing positions, and this may depend on the personality of the individual and/or the position in which they find themselves. Roles are often confused with employment positions as described in job descriptions.

Changing national and subnational approaches have ripple effects throughout the levels in any hierarchy. Decentralisation, for example results in changing roles not only within central governments but also in those institutions to which the authority might be delegated. The trickle down and ripple impacts of this are poorly articulated in the literature (Wright 2017). With these changing roles come different activities for

those organisations which impact of what other organisations are doing. The changes may bring about new overlaps and gaps and other interacting organisations may have to adjust their activities so as to regain a new equilibrium. The impact of the ripples is greater closer to the largest change and dissipated further away. Within a continuous negotiated context these roles may change frequently so they process becomes more fluid and dynamic. Ripples reflect off other interventions and institutions which generate further ripples.

Structural changes can go beyond rearranging old roles into new ones. MLG recognised the role of non-state actors (Börzel 2020; Bynoe 2021; Di Gregorio et al. 2019; Stubbs 2005) which changed the dynamics across the whole hierarchy.

The state-wide RAP process clearly changed roles at the regional level not least of which is because there were no accepted institutions at that level, so they needed to be created. This added further roles to existing local organisations and, to varying extents, expanded the role of regional NRM boards. So, what changed was that the RAP Steering Committee created the RAP plans which respectively informed the state-wide action plan and the Local Council Action Plans. It is uncertain whether the RAPs will be implemented as a whole, i.e., that the Steering Committees will systematically implement all or most of the plans or just parts will be done as opportunities arise. There has been no subsequent indication that any of the adaptation pathways processes have been followed through and used in any decision making. Any monitoring of actions and outcomes and RAP reviews is also uncertain.

Not all roles are exclusive to a single organisation or person, some roles can be taken on by everybody to some extent – communications, engagement and raising awareness. While there may be lead bodies for these, they are the responsibility of all actors (P22 RAP).

The allocation of roles is a function of MLG and the coordination and integration of the implementation of the roles defines a central process of MLG (Rhodes 2007), see Chapter 6 above.

Building on the above, insufficient attention has been allocated to the understanding and acceptance of roles (P36 Po14 LG), not least of which is the recognition of who takes on what roles and how they fulfil those roles. Clarification of roles taken on by

organisations at the various levels is critical for delegation of authority and the effective application of MLG.

7.5.1. Organisational roles

Many organisations involved in adaptation to climate change have been around, in one form or another, for many years, enough time for them to have refined their roles and have these acknowledged if not accepted by others. At a finer level, frequent changing of names, scope, senior personnel, and programmes, mostly within government, have made it difficult to track who has what role, what job and where they are placed (see shifting positions below).

7.5.1.1. State Government

State Government is often seen as having responsibility for developing policy and regulations and providing the overarching framework for major programmes such as addressing climate change.

I really do strongly see this state role is part of adaptive governance, is to have that strong framework ... to be able to feed in the knowledge and ultimately frame that in policy and regulation that actually guides that space at the bottom where we make all the decisions, without them imposing decisions (P7 Po10 RAP LG NRM PCCC).

Having set up the policy and the tools for the RAPs, e.g., guidelines, the government's role then shifted to supporting the development of the RAPs. This was done primarily through additional financial support, directly and via related agencies such as SAFECOM (P22 RAP) and some project officer time. The diversity of capacities, interests, and priorities across the twelve planning regions also contributed to the challenges. Once the plans were completed the government role shifted to developing the State Action Plan (Government of South Australia 2018c). With a new government in March 2018 the RAP process essentially ended at a state level but continued at the regional level to varying extents. This has left additional challenges.

We've got some really big questions to answer that's unfolding at an organisational level and we potentially need guidance to unpack it properly, ... I think DEWNR is going to have to put a framework in place, so that regions are consistent. I don't think this kind of thing can be left to the regions to go off in their own directions (P13 Po 3 NRM).

... you would think there is a natural interconnectivity with all these processes but indeed there is not. The connectivity, I think, is so ad hoc that everyone goes off and does what they need to do, to tick boxes, but no one is ticking the same box... if there was a State Coordinator ... a working group or whatever, and those regions came together every two months or whatever, it would build the relationships (P22 Po 14 RAP).

Several decisions made or not made by the State added to the challenges. This included the State not taking a position on which modelled projection to use as a baseline (P22 RAP). If the State had facilitated better sharing and interaction between the RAP processes, the RAP coordinators would not have had to rely on opportunistic meetings to compare processes and share learning. This links to issues around who is best placed to coordinate this networking (P40 LG RAP). Some of the challenges generated by the lack of government initiative has been picked up by the consultant team (P22 RAP), which worked well given their involvement across most of the RAPs.

Another role State Government should have been providing was a core basic common level of communication around adaptation to climate change, such as a set of standard messages and one voice creating a common understanding and starting point (P22 RAP).

A reduced role of the Government following completion of the plans has implications for the allocation of tasks and lead agency for RAP implementation as the Government is named as a lead agency. There is also some expectation that Government should inform, though not dictate, others' roles.

I think there is a very strong expectation from the regions, that in the State Government's response to the RAPs, that they will clearly set out roles and responsibilities, ... for the different levels of government

and organisations. Because there are things in our Regional Action Plans that we can't actually deliver, it has to be delivered at a State Government level. So, what we are wanting from them is direction about, 'The State Government will do this,' which then frees us up to focus on X. It wasn't clear for me that we're going to get that... because there was no resourcing in the budget. (P40 Po 9 LG).

This position is premised on the implementation of the RAPs as a whole and assumes that all tasks will be implemented. This is unlikely as the State Government will most likely cherry-pick actions in the State Action Plan based on funding and political expediency and many councils are committed to developing and implementing their own actions plans (P19 LG RAP, P23 LG RAP, P22 RAP, P40 LG RAP). There is a strong need for continuing government-led coordination which brings all relevant agencies and facilitates translation into regional and local implementation. Failure to do so will result in piecemeal activities, which will not be able to be aggregated up into state-level outcomes. However, implementation of regional and local plans will be reported as contributing to the State Action Plan.

DEWNR should be the coordinating body (between RAPs) because they had the Climate Change Adaptation Unit to be coordinating other State Government agencies to come together.... And they didn't seem to see that as their role at that stage (P35 Po 17 LG).

Well, I think a more formal relationship between the state and the regions is important, so that each of the regions has a representative and meets with the state on a regular basis to talk about roles and responsibilities. I think in council, at the Regional Action Plan level, we're making headway there, our next task is to deepen the relationships, so it's not just steering committee members, but it's with other offices within councils. I think (LGA) is working well for us, and we are actively trying to think about how we can improve those relationships with the other regional bodies, RDA and NRM, and we haven't really landed on that yet about how we do that (P40 Po 11 LG).

There is still a substantial amount of work needed to clarify the roles of the various players involved in implementing the RAPs.

...the real challenge is now we've done the plans, what's next and how do we start implementing and what is the role of local government, of State Government? What's the role of NRM boards? And what's the role of the Commonwealth Government in delivering on it? (P37 Po 11 Government).

I mean every organisation has different roles, Federal Government setting broad national policy, states setting state policy, NRM Boards looking at the regional areas, councils managing their assets and the LAP with a focus much more on biodiversity and agriculture, on-ground works with the community and so we each have our bits of areas that we look after and there should be some sort of cascading down from state and federal governments and NRM Boards ... Well, the LAP's role is more about supporting communities, building those links, and reflecting communities' concerns. But it's two ways, it's providing information to communities as well as sort of feeding back community concerns to NRM Boards and state governments (P2 Po 5 Community Group).

Ultimately plans are a means to a specific end, to contribute to various outcomes. The planning can support collaboration, awareness raising, and capacity development. The plans work toward integrating climate knowledge and consideration of climate impacts into most if not all business areas; successfully doing this latter approach can, in some cases, replace the need for traditional 'action' plans which tend to focus on practical, tangible actions such as planting trees and shooting rabbits. There is an opportunity to target several types of plans for more specific functions including plans for integration and coordination, partnerships development and policy development.

...my main mission is to incorporate climate change knowledge into how the Board does its business, to channelling the knowledge that sits with key people into those regional adaptation projects, and... to inform them and help them in planning for how they would adapt to climate change, in the NRM space... my focus, (is) trying to create

structures and mechanisms to translate those aspirations, or directions, from the original plans, and embed them in the relevant agencies, which will take a long time. But I think ... that's probably the most beneficial way of doing it. And hopefully really connecting the regions with those agencies in a direct sort of fashion (P12 Po 1 RAP).

One thing is clear and that is that government tends not to be best placed to work with community.

...that community connection, that community voice, that community arms and legs. The State Government traditionally can't do that. They are not good at it, don't do it (P26 Po 13 Government NRM).

A sceptic might argue that the government is equally inept at implementing any type of project (Luetjens & t Hart 2019; Shergold 2015).

7.5.1.2. Regions

The role of the regional bodies, primarily the NRM boards, has been discussed above. In various RAPs the NRM boards have played significant roles; in some they have hosted and lead the processes (NR SAMDB) and in others they have provided advice (NR AMLR), The NRM boards also play this dual role of being part of government and being historically grounded in the community and this is reflected in their approaches and their actions.

I think the regions got a very definite role, because we are an arm of government, and it is a key for the Premier and for the Cabinet. ...the SA Murray Darling Basin Board is around that whole community connection and engagement. It's a real strength of that Board and its staff because it's a philosophy that they bring from the ground up and building things (P26 Po 13 Government NRM).

Regional roles have not been clearly defined and agreed and, in the absence of any formal process, are mostly left up to the organisations to decide and often to nominate themselves into several positions, such as regional coordinator (P20 Po 8 NRM). In some cases, these allocations go down to the leader in the board and/or the executive.

The role of the regional NRM boards changed with the integration (P32 Po 5 Government), as discussed, from several perspectives. While some changes may be deemed necessary from time to time, the frequency and poor execution means they can have a long-term impact and may not be resolved before the next change.

7.5.1.3. Local government

Local Government has taken on important roles in the RAP processes in some cases, leading, controlling, and dominating some processes e.g., the RH&C RAP. Council provides a strong '*transformational leadership role within their communities including a hosting and leading/facilitation role in RAP*' (P40 Po3 LG). This has been an interesting approach given they do not operate on a regional level and, from the beginning, mostly had every intention of extracting their local issues and implementing them at a local level where they are the only capable organisation able to undertake the tasks.

The regional Local Government groups such as the Southern and Hills, played a coordinating role between the Councils of their group and liaised with the state-wide LGASA which had a strong state-wide role with agreements with DEWNR.

The LGASA had a funding agreement with DEWNR. So, they basically, had a partnership approach in developing the Regional Adaptation Plans, and provided that conduit between DEWNR and the local government sector. That was really important... (P40 Po 5 LG).

7.5.1.4. Community Groups

A key role amongst community groups is undertaking a significant amount of local on-ground works, often under the Landcare banner. These are primarily local projects, involving local people undertaking local actions, utilising resources from a range of sources. Actions typically include planting trees and shrubs for habitat restoration, restoring riparian zones to improve water quality, control of pest plants and animals for biodiversity conservation and several agricultural projects such as fencing to land

class, planting shelterbelts, and establishing water points across paddocks. These are not historically or specifically identified as addressing climate change, but they do contribute to both adaptation and to a lesser extent there are climate change impacts on how these projects are undertaken.

With a major shift in government funding programmes, there has been a need to evolve and develop agile implementation approaches, including a shift toward more commercial enterprises and methods (P14 Community group, P9 Community group, PO 3, 4, 6, 16, 20, 21, 27, 29 Appendix 5). The Goolwa to Wellington LAP has been successful in making some progress toward being less dependent on grants by adopting more of a fee for service business model, broadening the scope of projects and extending its geographic boundaries.

These changes are shifting the relationships between the Government and the LAP from one based on grants to that of a more commercial basis. As Government becomes leaner it becomes more dependent on service providers, shifting the interdependence.

As far as how the LAP operates its fee for service model we need to know, who's in the market for what sorts of activities and services? What sort of products, or information, or capability-type products would we be offering? And therefore, who would potentially want to buy them. there may be other drivers and opportunities. For example, the council might decide that it wants to have zero emissions. We've been changing the approach on how the LAP implementing the projects ... doing things more efficiently and making sure we've got enough capacity in-house. We've got business systems set up now, to be able do more piecemeal fee-for-service work, more commercially oriented work. Changing the mindset among staff, around how that sort of a delivery approach differs from traditional grant-funded activities.... So, actually using some of our own equipment, expertise, and staff to do work directly ourselves, it's just cheaper. To make the doing of it cheaper and more efficient. But in a broader sense, it's about a bit of a paradigm shift, and of course, kind of a different focus in the approach to project management, and

the need to be building projects from the front end rather than commissioning the grant.... the LAP as an organization would do well to engage with the local council, NRM board, DEWNR, for example, as an extended hierarchy (P9 Po 3-12 Community Group).

This starts shifting the nature of the relationship which could be toward a more decentralised approach as indicated by the current South Australia Government landscape policies (Government of South Australia 2018a) as discussed previously.

7.5.2. Individual

The role of individuals is pivotal in many situations across the whole hierarchy from the very top at state level, and beyond, to the leader of the smallest community group. The roles of individuals, unless they are national or international leaders, are often underestimated and poorly recognised. Occasionally one person will stand out, as Greta Thunberg has demonstrated, but these are few and far between. Most of these innovators have a combination of unique capacities that enable them to interact and navigate through our societies.

There is a skill set which is valued and sought after for many of the RAP Coordinator positions. In some cases, recruitment was direct - *'they were selected, ...We advertised, ... but it was more that we knew what we needed, a set of skills for the project'* (P19 LG RAP, P11 LG). There is also the *'...understanding that, based on the nature of the work and the expectations, certain types of people are attracted to the positions, and this reinforces the culture of the organisations'* (P14 Po 13 Community Group, P24 Po 18 LG).

One manifestation of this is that some of these people take on roles which are not specifically theirs but take them on because nobody else does (P13Po9 NRM, P29 Po2 LG). This is further complicated by the fact that most officers supporting the RAP processes, including the coordinators, are either not dedicated full-time to this specific role, i.e., they have other roles within their organisations or are not employed full-time (P12 Po19, P24 Po12, also P19 LG RAP, P23 LGRAP, P35 RAP, P3 RAP).

These individuals are good at bringing people together and negotiating compromises often working the systems to their advantage (P8 Government, P23 LG RAP). They are often outcomes focussed, can drive agendas (P36 Po 19 Consultant), and can come across as being abrupt and brusque (P40 LG RAP). They are also able to facilitate the extraction of key elements of government interests and policies as they relate to their region (P23 LG RAP, PO 7, 13, 15,). The coordinators who are less able to fit these roles tend to be less successful (PO 5, 8, 9, 17, Appendix 5).

Depending on the decision, mostly it's consensus. ... Sometimes there is no consensus and sometimes I will make the decision. Sometimes, I'll send them in email with a deadline, saying if I do not hear from you by then, this is what will happen. So, that even though sometimes I am making the decisions I am clear about if you want to be involved. It is potentially a hazard occupation ..., sometimes I make decisions that the steering committee won't even know about. It's really important to the decision making knowing who are outspoken, and some aren't, and knowing that at the table some of the quieter people may have a difference of opinion, but they'll speak with me independently. So, sometimes I am the voice of someone else at the table (P22 Po 4 RAP).

In some cases, the role of the individual is homologous to that of the organisation. Local Council has a role in bridging the distance between community and state government.

Our role is to make decisions based on community feedback, in the interest of the community. So, we should work together to set the direction, ... I am the normal spokesperson for the council. And I obviously do get involved with ministers of parliament, and local government representatives. But also, I work closely, with the Chief Executive... (P34 Po 1 LG).

7.5.2.1. Officer turn-over

Officer turn-over is a substantial feature of many organisations, and this has a major impact on productivity and effectiveness. Long-lasting impacts from the loss of corporate knowledge, experience, and relationships (Serrao-Neumann, Di Giulio & Choy 2020) with each change means these all need to be rebuilt, wasting time and frustrating many. Roles also shift with personnel – different people interpret and implement the same role differently. This is all exacerbated by poor management practices such as departing officers not having appropriate exit interviews and handovers (P25 Government) and incoming officers not being briefed (P35, P33, P13 Serrao-Neumann, Cox & Low Choy 2019). The effects of staff changes were even reflected in attempts to make arrangements for interviews undertaken during this research.

A perennial problem is securing the positions of officers across all levels (P15 Community group, P20 Po5 NRM, P21 Po 7 NRM PCCC). In Government, this results from departmental restructuring (P20), development of new programmes and closure of old ones and the reallocation of financial resources resulting in positions being lost and projects not being completed or implemented (P3 NRM, P40 LG).

...you've got a whole bunch of staff who live on contracts from six to twelve months. So, the staff move on, so you're always in this constant cycle because they need a job that's got more stability, when I first started here, nearly 80% of staff were on contract and of those over 50% were on three-month rolling contracts. But I don't want anybody on anything other than 12-month contract because, you do your job for six months, you just get into good work and then you are watching for the next job. It's not productive (P26 Po13 NRM).

DEWNR is a bit of a mess. I think DEWNR's staff had suffered from a lack of resourcing and staff turnover, and they've got a hard gig to try and pull it all together (P40 Po 7 LG).

Until we can secure people's positions and roles into at least the medium term we will make little progress in addressing the many barriers to adaption to climate change and

also suppress the provision of frank and fearless advice most governments and politicians say they are willing to receive (MacDermott 2008).

7.5.2.2. Senior leaders and influencers

As suggested above with Greta Thunberg, some individuals make contributions way above normal expectations. In some way they are considered champions (P33 Po10 Government) and many of them get recognised for it (P28 Po3 Consultant). However, these roles can be challenging, and individuals are under constant pressure as what often makes them champions also marginalises them. They are usually few and far between and have variable success in changing the status quo. Getting too good at something can also bring its own risks (P8 Government).

These leaders are very active in their roles, very well connected and are often the reason things get done (P3 NRM). They take alternative approaches and perspectives and add a new dynamic to most thinking. They often push against the full weight of larger organisations like government and time will tell how much of a difference they have made.

*... (there is) no such thing as a climate adaptation plan for (region)
And I don't think there will be ... adaptation is not a field. It's not a sector. It's not a discipline. It's not a profession. The adaptation is a horizontal concept that comes across different sectors and disciplines.... the way that the Board cuts up its work is vertically. It doesn't make sense for me to take a horizontal concept, such as climate adaptation, and write a plan on how you would adapt to climate change. I mean, in a sense, that's what all of those other plans, of those regional plans, have tried to do. What I see is, climate literacy and understanding of the impacts and opportunities being worked into the Board's business. So, much more embedding than planning horizontally, much more planning vertically, working vertically into all of these disciplines, rather than saying 'This is what we'll do across ... all these disciplines' (P12 Po 2 NRM).*

Developing the skills to drive major changes can be necessary along with persistence and the right support, though neither of these necessarily make it easy – it can be a risky strategy.

I've realised what to do to actually drive change. I had sort of figure out how to play the system right. That's why the adaptation program was set up the way it was, it suddenly really effective because I knew the game, and I knew this would be the case, as soon as you start kicking goals, they'd try to shut us down. So, the first two and half years of that program were defending the program against the rest of government trying to shut us down. And then suddenly it's been so successful, it's now something they talk about ... but you got to learn how to weather that (P8 Po 7 Ex Government).

Part of playing this game is providing the right information to the right people at the right time. This can be a very powerful tool for influencing policy and guiding decisions.

I know that the decision that those policy offices and others make along the way about what information to provide up and down the line, is their decision making power. ..., they don't have a formal decision making role in any other part (P31 Po 4 Government).

Central to how these leaders work is the development and maintenance of relationships. This includes building trust through enhancing others' reputations and their recognition and thereby building one's own influence (Dodd 2013; Ostrom 2003).

...there's a nice paper which draws on Ostrom's polycentricity type stuff, about how you influence incumbent players, ... it's got a nice little thing around the relationship between key players and how your reputation, recognition, trust and net benefits ... if they're getting reputational recognition in certain areas, and they're benefiting from that you need to identify a substitute for your agenda so, you need to use, not use the guy, but you've got to go in there, build the trust by delivering stuff that builds their recognition, builds their reputation and achieves a desirable outcome. It's got a little kind of positive reinforcing relationship there, ... as researchers who want to go and

influence the system, to identify how we engage and what we try and do, so that the key players in the system, the ones with the power and the agency start to do stuff that is mutually beneficial (P16 Po 10 Researcher).

Ministerial advisers are also seen as powerful individuals who often literally and metaphorically wield the red pen to draft policy before it goes to the minister (P19 Po5 LG, P0 Other).

The role of key individuals and leaders is often underestimated by most levels. They can often make or break ideas and processes. Working with them in constructive and targeted ways can make a lot of difference to the success of projects.

7.6. Conclusion

This final results chapter, building on the previous chapters, discusses factors influencing the broader context of governing adaptation to climate change through an MLG lens. This includes consideration of existing planning processes and strategic plans, institutional arrangements and the roles of organisations and individuals throughout the RAP process. The following lessons contribute to drawing a picture of if and how MLG plays out.

Context is everything. Knowledge and understanding of the context of the governing systems are essential for effective operations. The factors that define the contexts are diverse, dynamic, unpredictable and influenced by multiple processes which interact with each other. They are wicked systems that accrete to wicked problems. Changing contexts necessitate eternal vigilance of monitoring, interpretation, and adaptation to the changes. It is important to be mindful of the context and utilise the best available knowledge and practices, e.g., resilience planning, where appropriate. Contexts evolve with time and develop through different stages of development. Practices in one context need to be generalised and adapted appropriately to be useful in other contexts. Each application needs to be negotiated from new and we need to consider what it means to do this in the given context.

Existing institutional arrangements guide the inter-connectedness and inter-dependence of participating organisations. These arrangements also change with time and need continuous refinements. People keep systems operating; leaders and influencers facilitate advancement. They are skilled, innovative and solutions brokers and agents. Without coordinators many projects do not progress; organisations moving personnel around disrupts implementation and puts things back. The roles people and organisations assume are functions of the interactions between contexts, management approaches and preferred futures. This, ideally, reflexive practice relies on open feedback mechanisms and the freedom to innovate and adapt. These roles form the foundations from which new positions and arrangements are negotiated or assumed, hopefully reducing gaps and overlaps across hierarchies. Greater inter-dependence is required in resource-constrained circumstances. Roles should be negotiated and based on who is best placed to take on what roles and responsibilities. Coordination and integration of the operations of the roles forms part of the process of MLG. The coordination and integration need to be facilitated and managed on a continuous basis (see Chapter 6.5).

Securing long-term resources is necessary to make the changes required to address climate change but allocation of resources seems inherently political. Power and politics, while not necessarily overtly conspicuous, underpin most climate change activities. Politicisation of bureaucracies drives political agendas where real (not rhetorical) science-based solutions are needed. The 'negotiations' about who makes what decisions are heavily influenced by political interests. And while people vote for governments, governments have the resources to enable actions. MLG promotes delegation down to the lowest capable levels; decentralisations disperse the decision making. While key leaders are important, they do not always have all the answers; others need to be involved. Effective coordination and integration of committees and working groups across all levels shares responsibilities, broadens out perspectives and promote resilience within organisations.

Planning without implementation is pointless. Plans need to be developed within the context of implementation and evaluation of contributions to desired outcomes. Building partnerships, communities of practice and networks are valuable ways of sharing information, experiences, and future options. They need to be supported to

ensure their continuity and effectiveness. Matching levels of governance and landscape scale balances decision making with management; neither government nor community are independently best placed to operate at a landscape scale, though they both need to be involved.

The diversity between the RAPs generated a unique opportunity to gain a broad appreciation of the regions and to apply adaptive management and governance to better understand the scope of future options. Left uncoordinated, this diversity will get lost and probably be reinvented in the next round of processes. The RAPs developed new partnerships with people, organisations and sectors that had not collaborated in the past. These partnerships need fostering and support or they too will get lost. The development of the RAPs occurred during a relatively stable period of government. However, the change in government in 2018, realised a major shift in policy and subsequent actions. The RAPs were effectively not supported at the State level. Negotiating bipartisan support reduces the risk of the loss of significant resources, time and effort and limits the 'two steps forward three steps back' approach to progress.

Chapter 8: -Transforming to a New Paradigm

8.1. Introduction

Multilevel Governance is a contested and complicated theory and concept which has gained little traction in Australia and even less in South Australia. This is partially due, at least in South Australia, to a narrow focus on governance in its own right and a similar limited application of subsidiarity. Through this research I have sought to understand why this is the case and what interventions might enhance not only an increased governance practice and MLG praxis but also the complimentary application of subsidiarity. In many cases there has either been a reluctance to discuss governance or a limited understanding and appreciation of what it is and how it actually works; what it means to govern a government, organisation, or community group.

The single most important result from this research is the confirmation that the neologism MLG is not used, implicitly or explicitly, across a wide range of sectors including those dealing with adaptation to climate change. But this does not necessarily mean that MLG itself is not being practiced in some form. This chapter presents a discussion of the results and draws together the various threads that have been woven throughout the thesis. Clearly defining MLG within the operational context is important, not only in terms of positioning the research in the broader context but also in terms of providing a benchmark against which some comparisons can be made. I provide a revised definition which builds on the research, looks forward to a more idealistic practice and lays the foundation for constructing, from the start, future programmes using MLG principles. I revisit the research objectives and the research questions and summarise the lessons. Despite the limitations of the research, which are discussed, definite findings suggest how governing bodies can better avoid the perpetuation of poor governance practice and the dominant top-down approach; both of which need to be transformed into a more integrated governance praxis. It is important to support

some meaningful potential application of MLG to illustrate some possible ways forward, applying some of the lessons from this research.

The position held is that research must have practical applications so part of the interpretation is to ask questions like what does this all mean, how can it be used and who is best placed to use it?

During the research period an opportunity arose to prepare a briefing paper for the Hills and Fleurieu Landscape Board (HFLB) on MLG and some options with respect to transitioning from the current top-down, command and control governance approach to a more decentralised and distributed governance system. This paper is included here to illustrate a potential practical application of the research. Future research considerations are discussed.

8.2. Defining and applying Multilevel Governance

Clearly defining MLG, in a functional manner, is critical in positioning the type of governance in a way that informs practice. The definition should not only inform what MLG is, but how it works. Clearly defining MLG positions a researcher's understanding and provides a frame of reference from which reference to and analysis of MLG is grounded. Many authors do not do this and consequently leave uncertainty around their meaning.

Drawing heavily on Marks (1993; 1996; Marks & Hooghe 2004) and Hooge and Marks (2001b, 2003, 2016; 2020) I have defined MLG as:

...the processes making up governing systems which are grounded in continuous (re)negotiations amongst multiple levels of nested organisations which results in (re)allocation of decision making authority and responsibility based on the principle of subsidiarity.

This incorporates governance as a system of processes (going beyond the 'structure or process' debate (Tortola 2017) centred on making decisions and implementing these decisions. Governance processes (Shahsavarani & Azad Marz Abadi 2015) are informed by *inter alia*, the people involved (Jones et al.

2014), organisational ethics, values and principles, mandates, objectives and policies, rules, culture, knowledge, and rationality. It requires a completion of the transition from centralised, top-down governance to a decentralised, equitable delegation to all partners, i.e., this definition focusses on what a mature operational MLG system might look like. It is the responsibility and right of every partner to call to account other partners in relation to undertaking the agreed negotiated roles and to maintain the agreed delegations through initiating and participating in ongoing negotiations. That is, it is not the sole responsibility of any government to drive the negotiations from above. Any organisations from any level can drive renegotiations. With this responsibility comes the allocation of resources and capacity to undertake the roles negotiated.

1. Here, subsidiarity is based on which organisations are *best placed* to take on what roles. This goes beyond delegation to the lowest level capable to include agreement on who is best able to take on a role and what resources and capacity may then be needed to take on the roles. There is a general trend within any scale that higher-level organisations are best placed to take on broader roles (landscape/biome levels) and local organisations take on more targeted actions (organism to community levels) (or vice-versa depending on scale (see Figure 2.1) (Ekroos et al. 2016; Nanda et al. 2018; Pickett et al. 1989). This alignment can inform decision making pathways within and between governance levels (Nanda et al. 2018). It is recognised that all organisations manifest some expression of governance. These organisations can be an informal collection of individuals or a national government. That is, it is not only governments that govern.

MLG is thus the processes which enable the negotiations of roles of different organisations within a nested hierarchy – that is negotiating who is best placed to take on which roles and what resources and capacities they may need. This is a continuous negotiation/re-negotiation process as outcomes are realised, contexts change, and roles may need to be renegotiated. Therefore, MLG comprises iterative processes requiring constant vigilance by all partners to ensure healthy functioning systems. All this requires ongoing deep engagement in both formal and informal settings (Cleary & Hogan (in press); Crick 2012).

Any organisation at any level has the right and responsibility to maintain the MLG systems of which they are part through initiating discussions and negotiations. It is not just the responsibility of central governments, or state government in the South Australian case, to drive such negotiations. For South Australia, the strength of the MLG system will be illustrated by the state government's willingness to participate in such negotiation.

The implications of this definition include the delegation of power to organisations from other levels. And this is partially why it is unlikely to happen despite the rhetoric around some policies (e.g., decentralised decision making (Government of South Australia 2020c) – the policy which was never intended to be implemented).

The current position is one where delegation of responsibility by government equates to loss of power. Current practice does not appreciate that in fact delegation of authority and responsibility is gaining power or focussing power on those organisations which are best placed to hold that power. Part of the redistribution of power is recognition that what counts is what power is allocated to what level. Possessing power best placed at lower levels is false power, that is, it is power over issues/domains that belong to lower levels. State government holding power over what species of plants to use in local revegetation projects is wasting state capacity; it is better placed to contribute to decisions about using revegetation as a carbon sequestering mechanism in working toward zero emissions as part of the carbon economy. As long as the current paradigm persists there is likely to be little change to the system and there appears little indication that any such changes are on the horizon.

Such changes can be difficult. Systemic change across all levels will be needed to make significant shifts. Such shifts can be driven by good leaders. These include people who are charismatic, have vision, and have support from their members, administrations, constituents, and the public, who have the right approach, at the right time. Such situations often emerge *de novo*, are seldom created by one entity or constructed by any body. It is not feasible to wait until such people come along. Constructed systemic change needs to be deliberate and intentional. Part of this is the language used and discourse created.

What we lose by not calling a practice MLG is the integrity of the system and the analytical authority and integrity for critiquing and developing governing systems. We lose accountability in that by not naming it we can make it anything (or nothing) and therefore cannot be held accountable. In the absence of any alternative and limited knowledge of MLG, no adequate system is developed and applied, and current government-controlled processes are perpetuated.

8.3. Translating the results

While explicit application of MLG is missing there are several foundational processes currently being followed, which have the potential to support a more mature expression of MLG. This is a significant basis for development of MLG; not having them would require substantially more change and effort. These existing processes need shifting in various ways and extents in the ways they are implemented. The RAP process provides an excellent example and opportunity and could have relatively easily been undertaken from a more rigorous MLG perspective.

8.3.1. Lessons from the Regional Adaptation Planning process

South Australia's Regional Adaptation Planning (RAP) to address climate change is a unique adaptation process and has been recognised globally (MS I29 pg11 transcript). As discussed in Chapter 4 above, it utilises several existing governance levels including state government, local government, and community organisations (both formally and informally constituted) and effects a new regional level entity. The creativity and flexibility of existing regional organisations and other levels to enable the RAP Steering Committees to operate, albeit in various ways, attests to the adaptability and resilience of these organisations, at least in the planning stage, where there is limited commitment to invest resources. However, this does not necessarily translate into ongoing implementation.

The RAPs have the potential to function as multilevel networks which could facilitate the flows of governance (Nurse-Bray 2016); i.e., governance relations between network members, and are potentially well placed to develop regionally

specific decision-making processes, as the need arises, which could mesh with equivalent processes within the multilevel network. Given their lack of statutory constraints, RAPs have a degree of flexibility in navigating local to state scale arrangements and the ways in which they can engage with these networks.

The willingness of the regional steering committees to accept and implement, with limited resources, the state policy to develop the RAPs is a testament to their capacity and commitment and their acknowledgement of the importance of the issues. Would they have done it on their own? Probably not given their intention of developing their own plans, in the case of local government. What then is the value of the process? And if to bring communities together and develop relationship why not bring this to the fore?

The diversity of RAP processes, potentially a positive element, despite there being a single policy, common guidelines, and consistency in the facilitation through a common consultant, and consequently the products, makes the RAPs difficult to coordinate and integrate across the state. Minimal agreement on common goals before the start, underdeveloped guidelines and support spread too thinly across the state left the overall process too thin to facilitate state-level synthesis deep enough to incorporate the full scope of the issues across the regions. The unpacking of state-level policies to address regional priorities resulted in mostly local government following their own interests constrained by their own capacities.

The RAPs have therefore missed an opportunity to initiate a more theory-based application of MLG and the plans have mostly dissipated into regional NRM plans or local government plans. This has taken us back to the status quo of maintaining old power structures, silos and independent operations, fragmenting efforts to adapt to climate change – exactly what is not needed. So, the plans will most likely be relegated to history and the processes forgotten, only to be reinvented at some point in the future.

Developing RAPs into a better MLG process requires a number of elements. Initial, pre-policy development, negotiations about the interest in a regional approach as opposed to one lead by any other level e.g., state, or local government would have been more inclusive. If such negotiations had occurred, what might the approach look like and how best might it be done? The staggered, albeit unintentional,

process of developing the RAPs allowed for adaptation of the approach beyond contextualising the plans to the specific regions. This adaptation would have been difficult to replicate if the plans had been done simultaneously across the state. An appropriate active adaptive management approach might have compensated for this and built-in other variables as well. A larger dedicated permanent administration to support the planning could have shared experiences, built stronger networks, allowed for cross-fertilisation and better learning by all partners and facilitated better implementation at the regional level, with better integration generating synergies, cost effectiveness and consistent reporting. This would have contributed to enhancing the embedding of adaptation to climate change across more sectors and agencies. A more consistent approach to fuller engagement of all stakeholders, e.g., through more structured and regular network meeting, throughout the process would have built trust, partnerships, and more comprehensive plans. Community groups and Indigenous peoples were the losers in these processes. Stronger application of the principle of subsidiarity to address the 'decentralised' policy could have spread the responsibility between all stakeholders, reducing the burden and producing greater outcomes. Better coordination across the processes through resourced project coordinators might have resulted in more consistent plans which could have been better aggregated to state-level actions and also then 'unpacked' for local community implications. A consolidated resourcing strategy to building investment across the planning and implementation could have supported better sharing of capacity and achievement of adaptation outcomes. Contextualising the planning process within other participating organisations' plans could support better integration and coordination. Building governance discourse and practice to raise understanding and therefore enhance decision making.

8.3.2. Governance and governing in uncertainty

Limited foundational understanding of governance exacerbates the challenges of governing in uncertain and rapidly changing times. This has implications for enhancing governance practice not only in general but also in a declared emergency context; many local councils (Greenfield, Moloney & Granberg 2022) and the South Australian Government have declared climate emergencies

(Government of South Australia 2022a). As discussed in Chapter 5 above, this suggests that immediate action is required, increasing pressure on stakeholders to get it right the first time. Any serious action will only generate results if based on sound decision making by the right people in the right time.

The regional level is considered by many as a key level in adapting to climate change. The lack of any sustained and resourced cross-sectoral institutional arrangements at this level perpetuates an intermittent gap in the hierarchy resulting in a loss of continuity and connectivity, entrenching the status quo. The NRM or Landscape Boards could take the lead but would require a renewed mandate to promote a cultural shift to generate trust and confidence. With the perpetual departmental restructuring and policy renewal, this bogs current practices even deeper. From a MLG perspective it is not critical to have specific levels, i.e., a regional level is not required for a MLG system to be established. What is important is to appropriately engage whatever levels exist in the given context. Consistent shifting and changing of arrangements make engagement more difficult and end up using additional resources.

There is also a dominant view that only governments govern, and that NGOs and community groups don't govern or that their governance is limited to dealing with running meetings and describing the roles of office bearers. This is not only denigrating but also reduces the accountability of NGOs and community groups in relation to building their governance capacity and practice. They are generally treated as lesser partners and the cost of this is reduced participation.

The lack of governance expertise and rigorous monitoring and evaluation (critical for good governance (Naidoo 2011)) of governance practice constrains any real thinking about improving adaptive governance capacity. We are thus less able to keep up with the changing contexts and develop innovative governance solutions necessary in increasingly complex times.

Both MLG and subsidiarity are largely absent from day-to-day operations resulting in suboptimal coordination and integration across most sectors. This results in limited capacity to actively develop responses to changing contexts and to prepare for future changes. Generating synergies and cost effectiveness in a resource scarce environment seems unlikely.

We lack the foresight and interest in making any significant changes under an increasingly challenging context. That said sufficient experience with the enabling processes exists indicating that a complete overhaul of the entire system is not needed. Getting the right people and the right context aligned may seem unlikely and a real disaster may be required to bring about the required change.

What is needed is to reframe the understanding of governance across all organisations and bring governance practice into the mainstream of program and project management, that is more directly connecting decision making with the strategic objects which guide and influence the decision making. All decisions should be able to be tracked back to the aims and objectives of the organisation.

Substantial broad scale governance capacity development is urgently required and this needs to include a strong adaptive ethos based on flexibility and openness to creative solutions.

8.3.3. Processes enabling Multilevel Governance

The pervasiveness of the enabling processes across most sectors suggests some recognition of the importance of these processes. This ubiquity, and the extent of investment, further suggests that the processes are well developed and executed, as discussed above in Chapter 6. While substantial organisational groundwork has been done and effort expended on these processes, they are none the less disproportionately ineffectual - despite the resources invested they just don't work as well as they should.

In the absence of any overt expression of MLG in South Australia as revealed throughout the research, exploration of some of the underlying enabling processes highlighted some weak expression of these processes. The results allow for alternative interpretations of the motives of the leaders (state and federal governments) regulating and resourcing these processes. Restrained capacity resulting from casual practice and under resourcing, hampered extended consideration for enhancement and development driving down interest and compliance.

Putting aside potential stifling of these processes – government rarely wants an empowered community, - their existence suggests that shifting consultation toward collaborations along the IAP2 spectrum (IAP2 2018) for example, may be easier than introducing such standards anew.

The positive element here is that the existence of the groundwork and the culture of having these processes, however ineffectual, potentially provides for reframing the processes and their implementation into a more rigorous and sincere practice. Substantial investment in time and resources will be necessary. To do this will require substantial will and acceptance of a different set of values including a willingness to share power and resources.

This is over and above concomitant development of the governance capacity and systems. Strategic integration of building these capacities could generate synergies that would benefit both domains. Substantial development of the enabling processes and governance practice will be necessary for a functional MLG system and meaningful action in adapting to climate change. This needs to be done within the context of and parallel to the development of the institutional arrangements.

8.3.4. Institutional arrangements

Developing and maintaining institutional arrangements is a core element of MLG and was discussed extensively in Chapter 7 above. Which organisations and agencies are involved at what levels and how and what their roles are, define the specific MLG system. The context within which these arrangements emerge and evolve is the predominant determining factor of organisations' roles. The context is unique to each system and includes the actors, both individual and organisational, the current state of play of other activities, history, start or initial conditions, and trends. The context evolves and develops, influenced by prevailing conditions, action outcomes and projected futures. Keeping track of this evolution requires targeted monitoring and evaluation of specific indicators. Responding adaptively to detected changes will influence actions and potential outcomes. This adaptation may need to be frequent and regular as small changes can have

significant impacts on choice of pathways – a key characteristic of complex systems.

Capacity to adapt goes beyond the practical logistics of determining what has changed, comparison with intended pathways, development of adaptive actions and review of policy. The willingness to be flexible and creative and to consider change is necessary. There needs to be a balance between resilience, i.e., the capacity to absorb an intervention and return to the original pathway, and adaptation which results in a different pathway. Maintaining a chosen pathway may require increasing levels of management which may become too expensive; the pressure to change may build to a critical point where a breakdown could lead to disaster requiring major alterations. Regular fine-tuning may mitigate this build-up at least for a while.

Elements of changing context may be beyond our control, but many changes are not. Shifting jurisdictional boundaries, organisational restructuring and policy shifts with changing governments not only cost a lot of resources they also reset relationships, partnerships, and interdependencies. Changes in personnel also have significant impacts especially as many of the changes are not supported by effective knowledge transfer and handover. A consequence of this is shifting roles of both people and organisations. All these changes in themselves do not necessarily result in problems; it is more about the frequency, and how and why they are done. Properly managed change is crucial, but it needs to be structured, considered and systematic. Continual change may limit progress toward desired outcomes. These changes contribute to the short-termism approach adopted by many governments (Slawinski et al. 2017). Bi-partisan support is needed to minimise these politically motivated adjustments to allow for greater degrees of consistency, stability, and certainty.

Plans are central to most actions and strategies and are best carried out in a participatory way incorporating the enabling processes. However, excess emphasis is placed on planning as a product as opposed to a process. '*Plans are nothing, planning is everything*' (Ryan 2015) attributed to Eisenhower (1957, p. 235): '*I tell this story to illustrate the truth of the statement I heard long ago in the Army: Plans are worthless, but planning is everything.*' The RAP process was just that, a planning process. The outcome was the plans themselves. They are easy

to quantify and may look good in the eyes of the public. Yet, there was little consideration of implementing the plans which fed into the ongoing comments around perpetual planning and a 'when in doubt (about what to do), do another plan'. This has resulted in a plethora of plans across the years and involving different organisations, most are not fully implemented or implementable and are poorly monitored and evaluated. Greater emphasis needs to be placed on the plan within the planning cycle; that is plan, act, monitor and review and within the context of being part of the expression of the enabling processes that cement the relationships between the stakeholders.

Power and politics sit behind most of the decisions made on adaptation governance, though this is seldom discussed openly. The politicisation of the bureaucracies and the programs is often at odds with the expected goals and facilitates the implementation of political strategies. This top-down approach overrides any sense of equity between the levels of a MLG system and negates attempts to level the playing field. The politics also influence access to the higher levels of government; lines of inquiry can suddenly hit a dead end because of political sensitivity. Several organisations also exist at the higher level, such as the SOGs, Cabinet sub-committees and even more public ministerial committees such as the PCCC. These bodies are often used as instruments at national and international fora as examples of initiatives developed by the government though they may be perceived as puppets of the government.

Role selection and agreed delegation requires additional attention and is best done on the basis of who is best placed to take on what role. The roles delegated within a MLG context need to match the authority and the accepted responsibilities of that level within the hierarchy. Roles must be agreed to not only by those delegated to the role but also relevant organisations. As with other processes, the establishment of a role takes time, requires resources and some stability through extended delegations. Frequent and nonessential changing of roles results in confusion and diminished interest and ultimately withdrawal. Roles must therefore be negotiated from the start and reviewed regularly as part of standard engagement processes.

Therefore, MLG systems need to be managed as a whole system. The complexity of the systems can make this difficult so the processes within the MLG system

may be effectively used not only to set up the system but also to manage it. The development and implementation of the enabling processes are critical to establishing a MLG system and therefore may be used to manage the system. Effectively building the enabling processes will build the MLG system. Similarly, the effectiveness of the coordination and integration across and between all levels is critical. The nested, hierarchical nature of MLG systems presents one possible way of supporting this. Each level has an appreciation of the organisations that sit below it; it can therefore represent those below who represent those below them and so on. The whole system can be made up of holons; partial networks that can be aggregated up to the full network, containing each level's responsibility. Holism opens connections, bringing together entities that share a range of common characteristics and aggregating, but not constraining, them in the next level of the hierarchical system.

Holons (Koestler 1968, 1970, 1974) are described as '*...the organism is to be regarded as a multileveled hierarchy of semi-autonomous sub-wholes, branching into sub-wholes of a lower order, and so on. Sub-wholes on any level of the hierarchy are referred to as holons*' (Koestler, 1967: Appendix I.1: quoted by Mella 2009, p. 19). Koestler clarifies this:

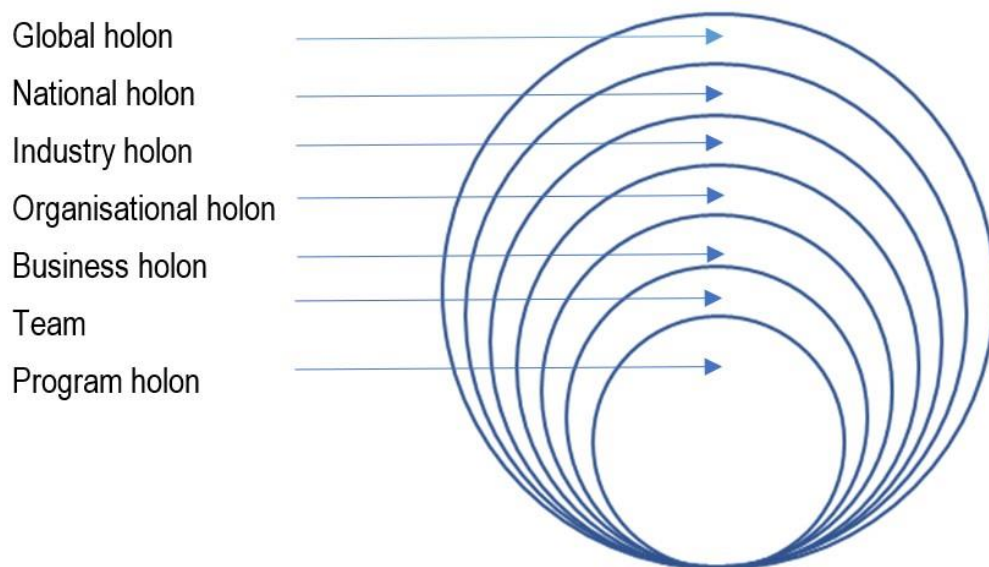
These sub-wholes—or 'holons'... are Janus-faced⁴ entities which display both the independent properties of wholes and the dependent properties of parts. Each holon must preserve and assert its autonomy; otherwise, the organism would lose its articulation and dissolve into an amorphous mass—but, at the same time, the holon must remain subordinate to the demands of the (existing or evolving) whole (1974, pp. 111-112).

By definition, interactions are significantly stronger both within holons than between holons at a particular level, and within a level rather than across the "surfaces" separating levels. Furthermore, each level can be distinguished from others by its time and space scale: processes at lower levels occur both more rapidly and across smaller spatial scales than those at higher levels (McMaster & Sheppard 2004). Movement within the holarchy, i.e., within each level and

⁴ 'Janus-faced': is where the entities act as 'wholes' when facing downwards and as 'parts' when facing upwards.

between the levels, generates different perspectives of what is part and what is whole and the relationship between the parts and wholes (Koestler 1968). This has implications for engagement and management of these systems. The application of the concept of holons can therefore contribute to a broader understanding of how organisations function within their networks, including strengthening their relationships with closer partners. Stronger relationships are the basis for sustaining many organisations as resources and people change over time with changing government programmes and technologies.

Holons and holarchy have been referenced in related research including (Armitage 2008; Diaconescu & Pitt 2015; Gorod et al. 2021; Günther & Folke 1993; Hall, Dalmaris & Nousala 2005; Ostrom 2005; Yolles 1999, 2006). A holocracy employs integrative processes which could be used to create and maintain MLG systems (Edwards 2010; Edwards 2005).



Source: Edwards, 2005:276

Figure 8. 1 Levels of organisational life as a series of holons

As Figure 8.1 above illustrates, each holon is discrete within its own domain but also part of a larger domain. This defines the nature of the relationship between each level within itself but also with the next levels. Holons, then are proposed as

a conceptual management unit within multilevel governance systems or holarchy. For example, RAPs can be considered part of a holarchy where each RAP is a holon made of sub-holons (participating organisations within each RAP) and collectively are part of a super-holon at state level. The connections within the RAP are stronger than between RAPs and operate within their own time and space. The management of and within each holon (or as Ostrom (2005) calls them, action areas) binds participants and strengthens interdependencies. Because super- and sub-holons operate on different levels they focus on different elements of the holarchy. This may be practically illustrated geographically in the RAPs. This is not to suggest that a whole new management system and structure needs to be developed but more that in the practice of MLG the holon concept is used as a foundation, lens, or framework to guide and inform the management of any single holonic institution (Diaconescu & Pitt 2015). For example, just as RAPs benefited from operation within their own space and context so a state-wide holon that brought all the RAPs together (i.e., while having government participants it was not a government entity) in one holonic institution would have generated far better outcomes across the state. Analogously a state-wide, cross-agencies holon could focus on a whole of government approach to the adaptation to climate change. The guiding principles for the operational management of each of these holons could be drawn for the development for the function of the whole MLG system, i.e., the MLG is a set of nested holons.

8.3.5. Research objectives

This thesis presents contributions made toward understanding the practical aspects of climate change governance by addressing the following objectives of the research:

- A. To investigate the roles of natural resource management (NRM) actors in South Australia in relation to governance of climate change adaptation and the implications for multilevel governance.
- B. To explore factors influencing actors' decision making within their networks and across network levels.

- C. To explore options and mechanisms for enhancing governance arrangements with respect to climate change adaptation.

The investigation of the role of NRM actors provides evidence of limited application of multilevel governance practice in adaptation to climate change. This minimalist expression challenges efforts to apply MLG in this context because of the poor governance foundation upon which to build. This suggests that a comprehensive development of governance practices would be required to facilitate the development of a solid expression of MLG. The current role of NRM actors perpetuates the status quo, stifling innovation and development, despite some foundational structures being in place in terms of levels of institutional arrangements. Current transactions between levels focus on contractual delivery of programmes and political strategy and domination by state government.

The lack of governance capacity and resources constrains expression of governance within and between the sporadic networks that occur across the domains. Most networks are transient, because of a lack of bilateral and multilateral commitment, resources, and collaborative culture. This results in individuals and some organisations being forced into isolation and 'protecting their patch' for survival. A dominant centralised command and control approach further limits the scope of decision making by many actors.

The RAPs initially provided an opportunity to develop strong interconnected governance arrangements but lacked the commitment for appropriate follow-up and ongoing development. While the lack of resources is frequently cited as the main constraint, this is often a mechanism for avoiding action. The RAP model, with appropriate adaptation, could be revisited and would require longer-term support. Equivalent governance networks could be developed across several sectors to support more effective adaptation to climate change, recognising that collaboration across multiple sectors is required. The opportunity exists for the development of a multilevel cross-sector framework. This would best be grown from within each jurisdiction based on their specific context. A regional approach, as with the RAPs, could provide the core for such arrangements and provide an opportunity to build a MLG system based on a sound theoretical foundation. This

process could explore what such a system, built from the start on MLG theory, would look like, going beyond MLG being just a descriptor of an existing system.

Several external and internal factors influence actors' decision-making. These include, building on the above, a weak culture of governance, ensuring consistency with higher level interests to promote continuity of flow of resources and domination of key people across all levels. The facilitator/practitioner role, as discussed above, adopted by some coordinators is also a key factor. Poor implementation of the enabling processes further constrains participation of new actors and input of alternative views. Internally, many organisations observe governance as a necessary evil, reducing it down to administrative tasks and arrangements. Decision making is often based on 'it is the right thing to do', without any causal connections or reference to stated goals or strategies. That is, the logical interpretation of accepted goals dictate certain actions are not used as the basis of most decision making.

On the other hand, some actors, e.g., some coordinators and consultants, in order to ensure deliver key outcomes, take on higher levels of authority, mostly with endorsement (implicit, by default or otherwise), and play disproportionately powerful roles, beyond their intended position, in the decision making.

More effective application of the enabling processes and negotiating more equitable partnerships through application of a MLG system can contribute to levelling the field and reducing negative influences.

Enhancing governance capacity and praxis requires significant programmes to review contemporary governance activities, develop appropriate education and training packages, institutionalise better governance practice and standards, and maintain an active adaptive approach to strength practice into the future. This all needs to be supported by sustained discourse of governance and governance theory.

8.3.6. Research questions

The following research questions were used to guide the research:

- I. What roles do actors in climate change adaptation decision making play and what are the implications for multilevel governance?
- II. What factors constrain or enhance actors' decision making within their role and place in their networks?
- III. What might this mean for building adaptive governance capacity and organisational resilience to climate change?

8.3.6.1. Research Question I

What roles do actors in climate change adaptation decision making play and what are the implications for multilevel governance?

Actors at different levels take on different governance roles not least of which is because of the types of decisions in which they may be involved. Higher-level bureaucrats, for example, are more likely to be making overarching decisions as part of state policy, sometimes with little consideration of implementation practicalities which are often left to local partners or communities to carry out. The local community members tend to make practical implementation decisions – e.g., what plants to plant where, when, and how.

Collectively the key role of these actors is that of *(facilitator practitioner) practitioner facilitator* (Ison 2010b, p. 80; McClintock 1996) or *governance facilitator/deliberative practitioner* (Bauer & Kastenhofer 2019, p. 36). For Bauer and Kastenhofer the governance facilitator '*builds structures, networks, and procedures ... compiles and synthesizes existing knowledge, brings together different experts...is closely involved in the governance of emerging technologies.*

The deliberative practitioner focuses on:

Representing and systematizing a wider breadth of perspectives, interests, and arguments in the political and public discourse.... draws on participation, engaging various kinds of societal actors, including citizens or lay persons, stakeholders, civil society organizations, scientific experts, and political decision-makers ... values the participatory process as important for more continuous interactions ... for stimulating social learning.

That is, they have two roles; that of practitioner where as individuals, they actually, make decisions more by default and out of practicality, and then that of facilitator where their role is to facilitate decision making by others in more traditional governance roles, e.g., boards and management committees.

Most actors operate somewhere along a practitioner – facilitator spectrum and this varies depending on what they are working on at any one time and the governance context within which they are operating. That is, they can move along the spectrum and/or express multiple positions along the spectrum. Observations from some RAP steering committee meetings suggest that coordinators can switch from practitioner to facilitator almost instantaneously as the need arises and this can occur rapidly under certain conditions, e.g., during steering committee meetings. This makes it difficult to identify the exact decision making point and the decision making mechanism so as to draw the processes together into a consolidated approach. The result is a fragmented governance and a lack of common understanding and agreement on the mechanism.

Implications for MLG include a more complex arrangement where the decision makers have two roles, and it might not be obvious what role they are playing, i.e., facilitator or practitioner. This knowledge comes from having close relationships with the partners and an appreciation of the way in which they operate. Uncertainty about roles influences the interactions between participants and the decision-making processes, which are thus less apparent to those not involved. This may compromise interconnections between levels and promotes isolation and silo operations. Clarity on who is involved in what decisions and how, may facilitate connections and continuity within the MLG system.

Some actors can operate on at least two levels, e.g., within projects they are working on and their substantive position within their organisation. Many RAP coordinators/project officers had at least two positions, (usually within the same organisation); the RAP project officer position and they were often managers of other projects which may or may not be related to climate change. This influenced the expression of governance practice because the coordinator may have higher responsibilities depending on their position.

8.3.6.2. Research Question 2

What factors constrain or enhance actors' decision making within their role and place in their networks?

There are several factors that influence actors in their decision making and these vary according to the level in which they operate.

- I. The actor's position within their organisations describes boundaries within which they operate. This can help define their domain and thus their areas of expertise, authority, and responsibility and on which they are consulted. While their roles are mostly well defined, albeit narrowly, their interactions with other members of their networks are less well defined and often constrain collaborations and limit effective coordination. Some actor's positions are less straight forward. For example, some steering committee coordinators were more independent of their host organisations than other coordinators, especially if they did not have other substantive roles in their organisation. Some coordinators were bound by the organisational culture and other commitments if they held additional positions. Perceptions of who they worked for differed within some steering committees resulting in some tension. Strategies for enhancing interactions between actors are required so as to broaden the scope of actors' roles and blur any hard boundaries. This needs to also be done across all the levels to reduce the silo culture and facilitate cross-sectoral and cross-scale collaborations.
- II. All organisations involved in the RAPs undertook a range of other planning processes, from local council environmental plans to regional NRM plans. Where these organisations were in relation to their planning cycles influenced their decision making. The relationships between these other plans and the RAP were poorly defined resulting in potential conflict or misalignment between the processes, for example in terms of whether an issue was best placed in the RAP or another plan and what interaction between the two there was likely to be. In some cases, this resulted in the RAP being reinterpreted in the regional NRM Plan, for example as in the SAMDB NRM region. The RAPs were therefore limited and focussed on what could be agreed to by all parties. There was clearly a need for the regions to explore the integration of the RAP into the other planning

processes as there was limited consideration of if, and where and how various processes would interact.

- III. The limited discourse and practice of governance procedures meant there was a weak foundation on which to make decisions. Steering committee members relied on their coordinators, government advisors and representatives and consultants to guide decision making. This extended not only to the limited experience in RAP planning but also a limited knowledge of potential climate change impacts and adaptation options.
- IV. The RAP process was directed by the state government with limited resources and tight timeframes. There were insufficient funds and time for participants to develop a stronger understanding of the processes and the consequences.
- V. There was no regional-level organisation dedicated to the implementation of the RAPs. The RAP steering committees were formed for the specific purpose of developing the RAPs with no further discussion about handover, implementation, and reporting. The RAPs were essentially a state policy about producing twelve plans.
- VI. Members of the steering committees held roles in different levels and organisations with differing interests. They therefore often had differing authorities in relation to what they could make decisions on.
- VII. The RAP process was often the first time that these groups of organisations had worked together so there was limited precedence and experience to fall back on.

These factors meant that the overall decision-making processes were fragmented, uncoordinated and focussed on the specific task.

8.3.6.3. Research Question 3

What might this mean for building adaptive governance capacity and organisational resilience to climate change?

The practitioner/facilitator role coupled with the above constraints grounded governance practice in the practical and administrative realms which did not invite

exploration of and innovation for the broader operational contexts and longer timeframes. The focus was on the here and now. Given the limited governance capacity observed throughout the research, any development of adaptive governance would need to be premised on building general governance capacity across all participating organisations.

Adaptive management is similarly poorly executed so drawing lessons from here would be equally challenging. Not least because adaptive management has clearer goals whereas with adaptive governance for adaptation, the goals, and who the decision-makers are is unclear (P16 Researcher).

Building adaptive governance therefore requires a two-pronged, integrating approach; the first prong addresses governance capacity and the second explores the adaptive part of adaptive management and applies it to governance. These two streams are probably best explored separately until there is a clearer appreciation of each where their integration will not generate additional confusion. They then need to be integrated. This may require some iterative steps where for example unravelling monitoring and evaluation of governance practice may require some additional investigation since this is not common practice and adaptive governance is based on the results of the monitoring and evaluation (Holling 1978; Walters 1986). Adaptive governance is based on the results of the monitoring, that is new governance practice develops in response to an assessment of the effectiveness, or otherwise, of previous governance practice and improves it to enhance future practices.

Diversity is a critical component of adaptation and is essential in terms of exploring which governance options may be most effective. Actively building and testing a diverse range options of governance practice will enable stronger comparison and critiques to better assess the most effective approaches. Elements of active adaptive management (McCarthy & Possingham 2007; Probert et al. 2011) have potential applications for adaptive governance. The RAP process, more by default than design, provided an opportunity to take an active adaptive approach to the governance supporting the planning.

Adaptation includes the capacity to respond to changes in the internal and external contexts and as a result of previous actions and interventions. Monitoring critical

features of these changes is important in terms of informing potential future amendments to policy and implementation and governance.

MLG is inherently adaptive due to the emphasis on evolving processes and continuous renegotiation of the respective roles and delegation of authority, responsibility, and resources. Further, any process that takes monitoring and evaluation seriously (Jordan et al. 2015) is also adaptive as this provides the evidence of any changes and achievement of outcomes. Adaptive governance needs to occur across all levels and be cross-sectorial and cross-scale

...so, for me adaptive governance in those areas of climate change that are reflected on ground and industry are best done at the regional level and to do that, you need to make decisions locally and be able to change decisions as situations evolve. I don't think that can happen in isolation from the central system as well, so I see the state, and again you can scale this up and down at the national level, but the states or the Crown needs to be able to provide the framework that enables adaptive governance to happen underneath it and in partnership with its... at the end of the day we shouldn't have an Eyre Peninsula Integrated Climate Change Agreement (EPICCA). We should actually have a form of governance that is at the regional level that cuts across the three stakeholder groups - local government, RDA and NRM, and that group should be where this stuff sits, ... the planning assessment panels ... the regional land-use planning ... where the development of the regional vision and regional long-term plan that moves us to a low carbon economy by 2056 (P7 Po 4 – 8 PCCC LG NRM).

Active adaptive governance promotes diversity and redundancy (Chaffin, Gosnell & Cosens 2014; Folke et al. 2005; Huitema et al. 2009; Low et al. 2000; Ostrom 1999; Streeter 1992), an overlapping of roles and functions which allows for some buffering against changes in the systems and therefore increases resilience of organisations (Folke et al. 2005; Hunter 2022) within the nested networks. Maintaining diversity and redundancy (the duplication of components to increase liability) in complex systems increases the reliability of those systems (Biggs,

Schlüter & Schoon 2015; Kharrazi et al. 2020). Multiple streams or pathways within the overall system promote resilience of those systems.

8.3.7. Limitations of research and methodology

Several limitations of the research emerged during the research. It was only possible to do a snapshot in time and space. This included opportunistically covering the RAP process in two regions. A longer period of time for fieldwork covering the whole state would have provided deeper and richer data allowing for stronger comparative analysis. It was also necessary to focus on one adaptation policy and therefore this excluded exploration of other adaptation to climate change initiatives such as Building Upgrade Finance and the Low Carbon Economy policies. Broader analysis might have enabled greater contextualisation and integration of policy implementation. The regional component of the RAP required the development of new arrangements and partnerships and while in some RAPs key participants brought with them important relationships, this was not always the case. This reduced opportunities of building on existing and past institutional arrangements and for further development of ongoing partnerships. Due to limited time, it was not possible to follow any decision-making processes over time. Repeat interviews with key actors would have provided some longitudinal perspectives. Certain types of actors were more accessible than others e.g., community members and project coordinators. Some public servants (e.g., members of the Senior Officers Group) were less accessible. This can lead to a bias where willing participants are more often engaged because they consider it important to participate.

Following its limited application in this research, the use of participant observation as a research method is still considered an appropriate choice, though additional consideration of its application would have been useful. Participant observation is best used with longer-term research projects and compressing the process can compromise the rigour of the research (Walford 2009). In both the public and private domains outside academia, participant observation is a relatively unknown research method, and this impacted on the

willingness of organisations to consider this option. Agreement to explore this method was limited. Not surprisingly, interest in participating in participant observation decreased with higher levels within the hierarchy, state government being least likely to participate and community groups most willing to participate. Participant observation is also a resource intensive method. This has potential implications in relation to government participation in research, particularly co-designed projects. Government does participate in some research but often wishes to control the outcomes (Wiseman & Bardsley 2013; Wiseman & Bardsley 2015). Government does also take on brief and targeted secondments for very targeted pieces of work which is not generally research focussed. Given the history of working in the NRM sector for the previous 15 years it has been a challenge to fully disregard previous knowledge, experience and networks gained and developed over that period. The adapted autoethnographic approach used here made use of this previous knowledge, which informed what was read and how it was interpreted and influenced considerations of implications of the findings as articulated in the recommendations. Substantial amounts of data were generated through this research. It was not possible to comprehensively analyse all aspects of all the data and to explore ideas considered peripheral at the time. For example, a reference to eco-anxiety (Cunsolo & Ellis 2018; Cunsolo et al. 2020) occurred early on in the interviews, though was not then considered a priority topic. There was also a single early discussion about some differences between decisions and choices which was not able to be followed up as time was limited.

8.4. Application in real life

Gaining a better understanding of current governance practices in South Australia and the context of this practice is a necessary prerequisite in exploring how MLG could be applied. It is hoped that this research will be noted by key people in the government and other organisations and adapted to their contexts. Several agency people have expressed some interest in the results. However, sharing the insights further afield can be difficult. Describing possible transitions from current practices to one based on MLG will require contextualising a process, alignment with government policy and programmes, and articulation in acceptable and

understandable language that is neither conceptually too complex nor intellectually dense. Any transformation must be done at a level and place which relevant organisations can align with. Such an approach would need to be followed up with practical examples and a range of presentations to key people involved in the process. Engagement can be difficult as it is often politically controlled.

Box 8.1 'Fake' policy.

On a separate NRM matter I was involved with a small group in meeting with some senior bureaucrats from DEW. They spoke about the implementation of most of the policies in the Landscape Act and related strategies. What they did not talk about was the policy around decentralisation of decision making for empowering communities. Just before a follow-up meeting our group was joined by a retired longer-term senior officer with a lot of relevant experience including some political astuteness. I was talking with him about the previous meeting and the omission of any reference to decentralisation. I asked him why he thought they had done that. His immediate response was that the government was not interested in empowering people, that the policy was just 'smoke and shadows'. This raised the question of how one knows which policies are real and which are just presented for show and to buy people in but then deferred. They set the scene but are never intended to be implemented - it is just smoke and mirrors. It turns out it might be easy to differentiate between real policies and the 'fake' ones; the fake ones tend to look too good to be true!

8.5. Future practices

The current position is partially a catch – 22, a between Scylla and Charybdis situation; we need a greater understanding of governance practice and praxis to support development of better governance systems and processes. There are no easy answers and no clear pathways; innovation and creativity will be needed to shift the current governance paradigm, as many have called for (Collins & Ison 2009; Hermwille 2016; Morrison et al. 2020).

Some guidelines and recommendations are presented as a primer; each situation and context will require development of their own systems. Some rephrasing may assist in providing greater insights. Perhaps the best that can be done is to raise some strategic questions - what would it take to make the changes that are required to address climate change?

8.5.1. Multilevel governance guidelines

MLG has largely been used to describe, explain, and understand existing complex governance systems. There are few examples of what a MLG system that has been set up from the beginning looks like and fewer still that describe how to set up a MLG system from the beginning. A different frame is needed to design and implement a program using MLG as the foundational theory and the frame of reference from the beginning. That is to use MLG as the basis for the construction of governance and governing systems. How we might go about designing and establishing such a program is not known.

A preliminary set of guidelines is presented to primarily build a new MLG system, but they may also be useful in exploring the transformation of an existing non-MLG system into a MLG system (see briefing paper p. 21) and adapted into a checklist to explore the health of any MLG process.

Transforming an existing system may be more difficult but may be a good learning exercise. If, as some local practitioners claim, many of the processes within the existing system are functioning satisfactorily then it may not be too difficult to upgrade the processes to be a fuller MLG system (Armitage & Plummer 2010; Berkes 2009).

An initial responsibility will be to get the developmental process established and progressing. In this case state government, as leaders, have this obligation but may need to be pressured to do so. An essential early step will be the identification of participants and or stakeholders. Invariably not everyone will be included from the start and a feature of MLG is the flexibility and openness that will allow interested parties to join at any time. A holonic perspective may reduce the risk of the process getting bogged down in local, minor issues. Government also has the responsibility of ensuring the sustainability of the process, that is they must provide the initiative to keep the process going, at least in the early stages.

Designing a MLG process is mostly about establishing and then maintaining a process. Some steps may be iterative, and all steps should be done in a participatory way. The list below is not necessarily sequential – some steps can and should be done concurrently. In the early stages there may be some assessment of existing processes and the appropriation of those parts which may be relevant; other components may need to be constructed from scratch.

Suggested steps include:

1. Build an adequate discourse on MLG and governance per se across all sectors.
2. Review and upgrade communications systems and networks.
3. Design and construct an agreed engagement approach including tools and documentation of the process.
4. Design and construct an agreed mechanism for developing capacity in relevant stakeholder organisations; this may be different for different types of participants at different levels.
5. Build redundancy options into all systems wherever possible (as in active adaptive management).
6. Agree to development (or transformation) steps and schedule.
7. Develop an MLG governance plan. This should include a structured decision making framework as described by Hardisty (2010) and Anthony et al (2020). It should be a plan for governing the program – who makes what decisions, when and how, include running a governance bottega (a studio where less experienced practitioners learn from more experienced practitioners through participating in the work to enhance governance praxis).

8. Ensure relevant governance documents are available, e.g., any constitutions, agreements, strategic plans, standard operation procedures (SOPs), policy documents.
9. Based on the program, identify all potential partners across all levels including those self-nominating (for which there must be a mechanism) and those who are one level on either side of a chosen pathway (that is organisations that may only be peripherally interested), and ensure ongoing communications with these partners.
10. Identify key roles required for the program including awareness of position within the hierarchy and holarchy, which holons are each partly part of.
11. Negotiate who is best placed to take on what roles including application of subsidiarity and informed by program context including allocation of authority and responsibility.
12. Review current capacity with respect to expected capacity required for the program. Ensure relevant capacity and resources are available for each level.
13. Implement engagement and communications processes.
14. Design and implement management plans including meetings, work schedules, timelines.
15. Design and implement participatory monitoring and evaluation processes including those specifically dealing with the governance processes.
16. Review the structure and function of the MLG process as an holonic system ensuring that each holon operates as a whole within itself but also as a functioning part of nested wholes. Figure 8.1.
17. Design and implement monitoring, evaluation and reviewing of plans, activities, and schedules.
18. Review against Ryan's (2010) ten principles of healthy governance.

The inclusion of a governance bottega is to facilitate some mechanism to advance governance thinking and praxis, to explore theory and practice from around the world and consider lessons for our own practice. Such a mechanism may be best supported by an existing entity such as the PCCC and have members from across all levels. A substantial amount of work is required to set up any future MGL systems. However, the cost of not doing it is probably even greater and the sooner it is done the better (Anthony et al. 2020).

8.5.2. Deciding not to decide

Understanding why governance thinking and practice have not progressed significantly is important. Early on in the research when discussing who makes what decisions, the question of who is not making the decisions that should be made arose. That is some decisions are deliberately not being made. One consequence of this is that some actions are not done, and the status quo remains. In the past this has served both political parties at both state and federal levels, each blaming the other for deficiencies.

While the focus here is on decision making and who, when and how makes what decisions, it is also important, given the political nature of human responses to climate change, to consider what decisions are not being made by a range of players. This is not about forgetting to decide but about deliberately not making decisions, that is 'deciding not to decide'. In other words, 'not to decide is to decide' (Bacon 2004; Finkel 1997; Gluth, Rieskamp & Büchel 2013), a quote attributed to Harvey Cox (Cox nd). Increased complexity can attenuate decision making to the point that nothing is done. In these circumstances not making a decision can be a safe and therefore popular option (Hardisty 2010, 2020). Not making decisions can be a powerful controlling mechanism in directing actions, particularly for those dependent on resources. A government may decide to adopt a policy but also decide not to resource its implementation, effectively killing the policy and then leaving the accountability to later - 'we don't have the funds to do everything!' or to another government. The limited thinking and action around the implementation of RAPs could be an example, especially as there have been several further policy statements after the formulation of RAPs rather than a focus on getting the plans implemented. Political imperative comes to the fore as often there are implications, at least, relating to changing governments and political parties undoing and redoing previous governments' programmes (de Groot 2020). Some of this could also be behind the reluctance of many governments to formulate comprehensive climate change policies, preferring to take minimalist approaches (Cheung & Davies 2017), free riding on other governments (Beeson & McDonald 2013), allowing the private sector to bypass the gridlock (Vandenbergh & Gilligan 2015) and procrastinations in arriving at international agreements (Hale & Held 2017).

However, it is difficult to track non-decisions: - it can be just as much about asking what is not there or what is not said.

Analogous to not deciding is the idea that 'delay is the new denial' (Capstick & Steinberger 2020; Johnston 2020) where 'discourses of climate delay' (Lamb et al. 2020; Stern 2020) result in reduced or inefficient actions (Bache, Bartle, et al. 2015; Bache, Reardon, et al. 2015) in addressing climate change.

This could be related to a lack of national policies associated with climate change (Giddens 2008). Giddens (2009, p. 4) goes as far to suggest that '...we have no politics of climate change. In other words, we do not have a developed analysis of the political innovations that have to be made if our aspirations to limit global warming are to become real.' Morrison et al. (2020) point to an analogous need for the development of a new governance paradigm.

8.5.3. Recommendations

The following recommendations are presented in Table 8.1 for discussion and consideration. These recommendations are directed at all levels of organisations as each level has some role to play in each of these actions. It is recognised that senior bureaucrats often have a greater influence, directly or indirectly, in driving such recommendations and they are the primary targets in this case. Some organisations may be better placed to lead responding to the specific recommendations.

Table 8.1 Recommendations for discussion and consideration

	Recommendations
1	Develop an active rigorous dialectic on governance and MLG and embed and institutionalise across all sectors and levels. This may include significant programmes on governance capacity development and is likely to require a new cohort of practitioners. Part of this could be the establishment of a governance bottega or community of practice.
2	Naming and defining MLG as the foundational theory and applying it to all future processes – what does it mean to design and implement a programme using MLG and the frame of reference? This requires an agreed transitioning from the current paradigm to a MLG one including the application of subsidiarity.
3	Build a MLG system, based on theory, to be used for the design and implementation of all future programs.
4	Establish and sustain a network of climate change practitioners.
5	Renegotiate and consolidate roles of different levels of organisations with respect to each other to reduce gaps and overlaps and clarify relationships between these levels. This should be done in two ways; generically across the state (i.e., roles at each level) and specifically at regional level (i.e., roles of each organisation within each region). Set up continuous renegotiation process.
6	Set up comprehensive information and knowledge exchange systems across all levels and sectors.
7	Agree on achieving a bipartisan approach to MLG, subsidiarity and adaptive governance in adaptation to climate change and across another program where possible.
8	Constrain government restructuring of departments and portfolios in both frequency and extent.
9	Secure longer-term resources and reduce competitive access to these resources.
10	Build a MLG system based on theory from the beginning and adapting the RAP model to that system.

Development toward a meaningful express of MLG will be a time-consuming process. Defining MLG for a specific program context and designing a program based on that definition could generate some interesting processes. Some initial foundational conditions would need to be met including having a sound governance praxis, manifesting good enabling processes, demonstrating commitment to longer term resource allocation and a bipartisan approach, agreement on some shared core values and a willingness to negotiate roles and responsibility. Only then could a genuine MLG process have a chance of succeeding.

8.5.4. Future research

This research took an intrepid step into a poorly explored area of governance practices. I was only able to investigate a small area and then only to a limited degree. Further research options include:

- A. Extending the research to the whole of Australia, including a review of all RAP processes through comparison with analogous processes from other states and territories in Australia. This could enhance validity of the analysis and extraction of governance principles which may be applied across the four levels.
- B. Deeper exploration of the relationship between organisations across the levels, (including a process for assessing where every organisation is within its own development) and how these could be improved to develop MLG processes with greater fidelity.
- C. Investigation of the regional level as a more legitimate, formal, and structured level of governance, including a clearer role within the local to federal hierarchy.
- D. Mechanisms to maintain and enhance relationships and partnerships between organisations to sustain equitable negotiations of roles and authority and resources allocations.
- E. Examining the role key individuals make in organisational decision making and how they influence governance practice.

- F. Overcoming the current barriers to more authentic manifestation of the enabling processes, i.e., engagement, communications, capacity development, and monitoring and evaluation.
- G. Exploration of reasons for the limited development and expression of governance theory and praxis across all levels and options for enhancing good governance.
- H. The development of programmes based on MLG theory from inception; what would a programme look like if it was built from a MLG perspective from the beginning?
- I. Exploring the most effective and efficient way of transitioning from the current governance practice to a MLG praxis.
- J. The analysis of the relationship between PCG and MLG which could generate multiple insights.
- K. Monitoring and evaluation of governance processes and MLG (Peel, Godden & Keenan 2012; Rijavec & Pevcin 2018).

This research covered a short period of time (i.e. 2015- 2020) with field work finishing at the end of 2016 toward the end of the development and implementation of a number of climate change policies such as Towards a Resilient State (Government of South Australia 2018c) and Climate Change Action South Australia (Government of South Australia 2016c). The fieldwork finished as the RAPs were completed and the State Plan was released. There was limited expectation by partners of further policy development in this direction; the Plans were completed and the Steering Committees and their partners were expected to advance their implementation. The State Government had little further role in this direction. In March 2018 the government changed and with this change came delays in new policy development and then shifts in emphasis away from climate change. One potential opportunity came in the passing of the new Landscape Act and the related policies which purportedly placed community at the heart of decision making and decentralised decision making. In practice this did not eventuate as discussed above; this part of the policy can be seen as more rhetoric than reality.

A number of climate change-related policies and documents were developed between 2019 and 2021. These include Directions for a Climate Smart South Australia (Government of South Australia 2019a), Climate Change Science and Knowledge Plan for South Australia (Government of South Australia 2020b), South Australian Government Climate Change Action Plan 2021-2025 (Government of South Australia 2020f), and South Australia's Climate Change Challenge and Opportunity (Garnaut 2020). None of these documents include any developments of the RAP process or any significant statements on governance, decentralisation, or regionalisation. The documents were not accompanied by any substantial consultation processes. However, they do address climate change, which is an important shift from previous Liberal party policy. Making any progress on moving towards decentralisation of decision making or building governance capacity seems unlikely. Yet another round of switching policy positions exacerbates the stop-start, stuttering process in addressing the impacts of climate change and developing both adaptations and mitigations.

The new Labor State Government (2022) was the first Australian state to produce a declaration of a climate emergency (Government of South Australia 2022a). While this may be just virtue signalling, the State Government (Government of South Australia 2022b) does link the declaration to pre-existing actions within various action plans, e.g., Carbon Neutral Adelaide (Climate Emergency Declaration and Mobilisation in Action 2022).

State policies likely to be developed will be those that relate to and support economic development or at least do not come at any economic cost. Health, the environment and natural resources, including addressing the losses resulting from natural disasters made worse by climate change, are likely to be low down the priority list. At a federal level the current national and international favour being afforded to the new Labor government may present the best chance for meaningful change. In the end though, both major political parties are much the same colour and it may be independents that manage to put through some real changes in federal parliament.

While the policy environment may have moved on, the various policies contribute to the historic meanderings and ebbs and flows of political thought over the past 35 years. What sits behind these fluctuations; the mechanisms by which

organisations govern, remains relatively stable. This research has sought to explore some of these mechanisms and shed some light on how they could be strengthened to support better governance practice and praxis.

8.5.5. Virtuous cycles

*'We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.
Through the unknown, remembered gate
When the last of earth left to discover
Is that which was the beginning;
At the source of the longest river
The voice of the hidden waterfall
And the children in the apple-tree
Not known, because not looked for
But heard, half-heard, in the stillness
Between two waves of the sea.'*

Extract from T.S. Eliot, from 'Little Gidding,' (Eliot 1943)

The above quote from T. S. Eliot reminds us of the iterative nature of research and multilevel governance, that every end is a new beginning, and we must observe if we wish to understand. This research has partly been a search for MLG in adaptation to climate change in South Australia and has had limited success. There is also little hope of there being any major shift in current practices into the future, at least coming from the centralised powerbrokers. One potential driver is the lower levels of the hierarchy of organisations, specifically community groups and local government. These levels are more likely to make some progress, but any effort will need to be coordinated and integrated into prevailing practices. Critical to any such intervention will be the development of a comprehensive governance community of practice that goes beyond adaptation to climate change and is embedded into all organisational practices. This is going to take substantial commitment from all relevant organisations.

8.5.6. National and international application and implications of this research

This research has focussed on the current practice in South Australia and the recommendations have been focused on this jurisdiction. Many of the recommendations can be applied, in appropriate ways, to other regions and levels. The context of the application will determine the application. The development of MLG systems in other contexts would benefit from consideration of several points, as follows.

Developing an agreed position on MLG nationally including understanding and fully describing the targeted context, all relevant stakeholders, their level of operation and their current roles and relationships. This would require a review of all policy settings and environment and the institutional arrangements. It is thus necessary to acknowledge and operate within the values and culture of the stakeholders, political support (or at least non-interference) with the allocation of adequate resourcing. And development of appropriate operating systems including adaptive management systems and building the enabling processes (communications, capacity development, monitoring and evaluation and stakeholder engagement processes) prior to development will be a pre-requisite.

This research makes a number of contributions to global academic practice, including presenting a perspective on the descriptor / theory tension inherent in MLG, strengthening the place of subsidiarity within MLG, preliminary exploration of the relationship between MLG and PCG (Heinen, Arlati & Knieling 2021) and describing some elements of a possible transformation from current practice to a more theory-based MLG praxis. These, in association with other factors, underpin contemporary governance practice and its future development and evolution. The position taken here is that most studies (Daniell & Kay 2017) on MLG sit within the descriptor space; here MLG is used to describe how the governance occurs. Few studies take a more theoretical approach (Piattoni 2010). Resolution of this tension comes about through shifting from the former to the latter. That is while it is useful to be able to describe what has occurred in the past, it now becomes essential to

use MLG theory to direct future project design and implementation. To do this requires a much more substantial expression of subsidiarity to share the authority and responsibility of governing projects more equitably. This requires a greater understanding of MLG and PCG and the nature of the relationship that may exist in each context and how this may influence project governance. These elements, with the legitimate expression of the enabling processes discussed, will facilitate transformation to more meaningful governance systems that are more likely to contribute to achieving global outcomes such as the United Nations' Sustainable Development Goals (Allen, Malekpour & Mintrom 2023).

Ultimately governance is an expression of power, and current imbalances of power limit the implementation of policy decision making across levels (Di Gregorio et al. 2019; Ishtiaque et al. 2021). Managing these imbalances will be needed to reduce the impact on centralised governance, but this does not seem to be occurring as higher levels of government continue to maintain the status quo. MLG, as discussed here, provides a mechanism for sharing power, strengthening co-dependencies and addressing the increasingly significant challenges from climate change and unsustainable practice.

8.6. The Good Ship Adaptation – What is and what could be

The Good Ship Adaptation has dumped its coal, raised its sails, and plugged the solar panels into the network without significant social or economic interventions. A recent Institute for Energy Economics and Financial Analysis (IEEFA) report (Bowyer & Kuiper 2021) shows that it is possible to have a grid dominated by wind, solar and storage. It has shifted its focus on the way in which the enabling processes are conducted; we have collaboration rather than competition, integration rather than silos, participation rather than consultation, and decentralised rather than top-down decision making. People are working together. None of this requires the creation and development of significantly different tools and radical interventions. Figure 8.2 below provides an illustration of what MLG might look like in the future. Of note is that no major changes for current practices are required, though it is important to make the changes. We already use (to some extent), most of the tools, we just need to change our attitudes and approaches.

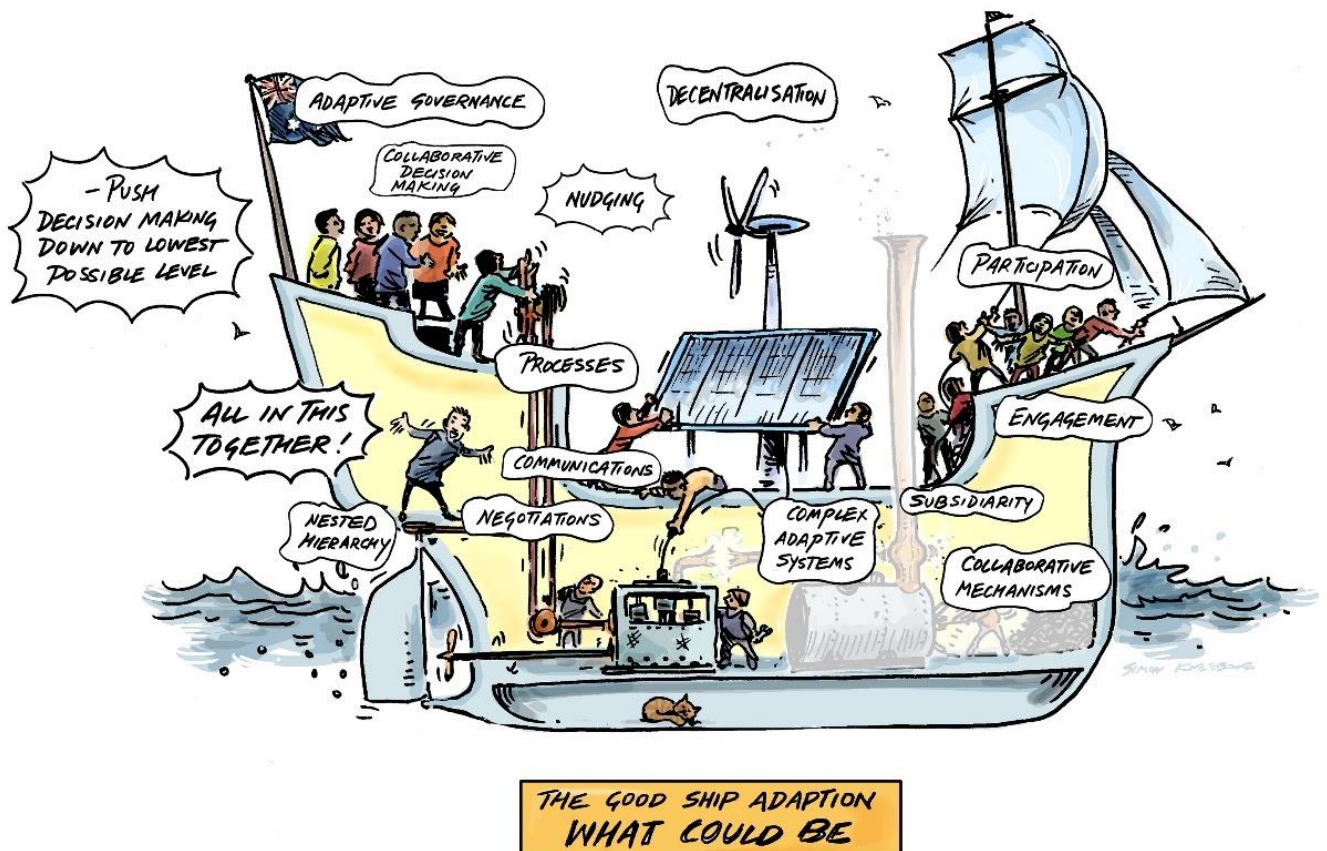


Illustration created by Simon Kneebone 2019, based on concept and text developed by BL

Figure 8.2 The Good Ship Adaptation – What Could Be'

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Appendices

Appendix 1 Ethics approval



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Applicant: Dr M Nursey-Bray

School: School of Social Sciences

Project Title: Co-ordinating climate change adaptation decision making in South Australian NRM: Building an adaptive governance framework for strengthening the roles of institutional actors.

The University of Adelaide Human Research Ethics Committee
Low Risk Human Research Ethics Review Group (Faculty of Arts and Faculty of the Professions)

ETHICS APPROVAL No: H-2015-238 App. No.: 0000021001

APPROVED for the period: 19 Oct 2015 to 31 Oct 2018

This study is to be conducted by Barry Lincoln, PhD candidate.

Thank you for your response dated 15.10.2015 to the matters raised.

PROFESSOR RACHEL A. ANKENY
Co-Convenor
Low Risk Human Research Ethics Review Group
(Faculty of Arts and Faculty of the Professions)

Appendix 2 Interview questions

Research Questions for interviews

Personal information

1. Name (if appropriate)
2. Organisation
3. Position
4. Responsibilities with respect to climate change adaptation

Questions

1. What does climate change mean to you?
2. What does climate change adaptation mean to you?
3. What does climate change / climate change adaptation look like for you in your country/area?
 - 3.1. What are the expected impacts of climate change?
 - 3.2. How do you think things will change?
 - 3.3. How will this affect what you do into the future?
4. What do you do within your organisation to address climate change and support climate change adaptation?
5. What is your role in relation to decision making around climate change adaptation within your organisation?
6. What is your organisation's understanding of climate change and climate change adaptation?
 - 6.1. What is your organisation's mandate or interest in addressing climate change?
 - 6.2. What is your organisation's role and responsibility in addressing climate change?
 - 6.3. What are the implications for your organisation's planning and decision making?
7. What policies, plans and strategies do you have or refer to in addressing climate change?
8. What does governance mean to you?
9. How does your organisation manage its climate change governance arrangements?
10. Does your organisation adapt its governance arrangements and if so how and in response to what drivers?
11. Who else makes climate change adaptation decisions in your organisation?
12. How are these decisions made? - what is the mechanism for making these decisions?
13. Are you or have you been involved in climate change adaptation projects with other partners?
 - 13.1. What are these projects?
 - 13.2. Who are/were the partners?
 - 13.3. What is/was your role in these projects?
 - 13.4. How well did they work?
 - 13.5. What do you think would have made them better?

14. Who else make decisions around climate change adaptation in the region?
15. What decisions do they make on climate change adaptation?
16. How do they make these decisions?
17. Do other organisations make different decisions to your organisation's decisions?
 - 17.1. What are the differences in the decisions?
18. Who decides who makes what decisions?
 - 18.1. How is this done?
19. Are the right organisations doing the right things and making the right decisions for their place and role?
 - 19.1. Are they the best organisations to be making these decisions?
 - 19.2. If not, why not?
 - 19.3. Who should be making what decisions?
20. Would it be valuable for you to know who outside your organisation is making what climate change adaptation decisions?
 - 20.1. In what ways would it be valuable
 - 20.2. How might it change what you do or the decisions you make
21. Are your and their decisions making processes linked, coordinated, integrated in any way?
 - 21.1. If so, how?
 - 21.2. If not, why not?
 - 21.3. What are the barriers to coordinating decision making?
 - 21.4. Would it be useful and/or important if they were coordinated?
 - 21.5. If so, how could they be coordinated or better coordinated?
22. What would help them be more effectively coordinated?
23. Who should do this?
24. What would it take to increase coordination between organisations?
25. How would you know if the coordination is working well?
26. What informs your decision making around climate change adaptation?
 - 26.1. Any plans, policies, legislations?
27. Do you make or not make decisions based on who else might be making similar decisions?
 - 27.1. How does this happen?
28. Have your governance arrangements for climate change adaptation changed in the past few years? If so, how have they changed?
29. How would you describe the capacity of your organisation to change their governance arrangements in relation to climate change adaptation developments?
30. Would a framework for enhancing coordination of decision making be of value to you and your organisation?
31. What might such a framework look like?
32. Who should drive / create or be responsible for it?
33. How would you know if it is working well?
34. How does this all impact on your capacity to adapt to and mitigate the impacts of climate change?
35. Within the context of adaptive management and continuous improvement, how can the governance arrangements between your partners be enhanced and strengthened?

Wrap up

36. Anything else to comments

37. Any other resources or people it may be valuable to talk with.

38. Any additional information

39. Any questions.

40. Next steps

40.1. transcription

40.2. review of transcript.

Appendix 3 Interviewee categories

List of interviewee primary groups, position, and secondary groups. Several interviewees occupied several positions

The Primary group has been allocated according to the position the participant were primarily interviewed in and not necessarily their substantive role. All of the 'Regional' group members are also Government employees.

The selection of participant was limited to NRM, local government and state government personnel. Additional sectors, such as economic development, education, social services, and traditional owners, would have broadened discussions, generating more general data spread over a wider field of topic. This would have reduce the ability to draw out deeper thinking on MLG and governance in climate change in general.

RAP – Regional Adaptation Planning

Interviewee Identification	Primary Group	Position	Secondary Group
0	Other		
1	Community Group	Board member	Government
2	Community Group	Board member	
3	Regional NRM Board	Officer	RAP
4	Consultant	Climate scientist	
5	Community Group	Board member	
6	Other	Academic	
7	RAP	Steering Committee member	Local Government
8	Government	Manager	RAP
9	Community Group	Manager	
10	Community Group	Officer	
11	Other	Elected member	
12	Regional NRM Board	Officer	RAP
13	Regional NRM Board	Officer	RAP
14	Community Group	Officer	
15	Community Group	Board member	Local Government
16	Researcher		
17	Researcher		
18	Researcher		
19	Local Government	Officer	RAP
20	Regional NRM Board	Officer	
21	Regional NRM Board	Officer	
22	RAP	Officer	
23	Local Government	Officer	RAP
24	Local Government	Officer	RAP
25	Government	Officer	

Interviewee Identification	Primary Group	Position	Secondary Group
26	Regional NRM Board	Manager	
27	Regional NRM Board	Officer	
28	Consultant		
29	Local Government	Manager	RAP
30	Regional NRM Board	Officer	
31	Government	Director	
32	Regional NRM Board	Board member	Government
33	Government	Manager	
34	Local Government	Elected member	Community
35	Local Government	Officer	RAP
36	Consultant		
37	Government	Manager	
38	Other	Youth	
39	Other		
40	Local Government	Officer	RAP
41	Government	Scientist	

Appendix 4 MAXQDA codes

The following codes were use in analysing the transcripts from the interview. Significant segments of text were allocated to the relevant themes as appropriate.

1. Barrages
2. Adaptation Governance RAP
3. Context
4. Agency
5. Quotes
6. Transitioning
7. Adaptation
 - 7.1. Adaptation pathways
8. Engagement
 - 8.1. Concept Climate Change Adaptation
 - 8.2. Networks
 - 8.3. Partnerships
 - 8.4. Awareness
9. Governance
 - 9.1. process
 - 9.2. timeframes
 - 9.3. authority
 - 9.4. Adapt govnn frame
 - 9.5. MLG
 - 9.5.1. Multilevel
 - 9.6. Decision making
10. Plans and Strategies
 - 10.1. Plan implementation
 - 10.1.1. MERI
 - 10.2. Uncertainty
 - 10.3. Legislation
 - 10.4. Policy and implementation
 - 10.5. State Plans
 - 10.5.1. accountability
 - 10.6. RAPs
 - 10.6.1. Regional health
11. Communication
12. Resources
13. Coordination and integration
 - 13.1. Mainstreaming
 - 13.2. collaborations
14. Institutional arrangements
 - 14.1. Informal groups
 - 14.2. Power
 - 14.2.1. Subsidiarity
 - 14.2.2. politics
 - 14.3. Regions
 - 14.4. Committees

- 14.4.1. Sector Agreements
- 14.4.2. PCCC
- 14.4.3. Government Communications
- 14.4.4. Steering Committees

15. Roles

- 15.1. Organisations
 - 15.1.1. Government
 - 15.1.1.1. Local Government
 - 15.1.2. Community
 - 15.1.2.1. operations
 - 15.1.3. strategy
 - 15.1.4. Admin
 - 15.1.5. PCCC role
- 15.2. individuals
 - 15.2.1. shifting staff
 - 15.2.2. Representation
 - 15.2.3. Senior influencers
 - 15.2.3.1. Leaders
 - 15.2.4. Consultants
 - 15.2.5. Project Officers

16. Climate Change impacts

17. Miscellaneous

- 17.1. New thinking
- 17.2. Narratives
- 17.3. International
 - 17.3.1. Paris (COP 21)

Appendix 5 Participant observation activities

Table 1. Participation and or observations occurred through the following activities

ID No.	Date	Organisation	Event	Location
1	30 Sep 2015	DEWNR	CC Strategy public consultation	Mt Barker
2	12 Oct 2015	DEWNR	CC Strategy public consultation	Victor Harbor
3	11 Nov 2015	GWLAP	Board meeting	Strathalbyn
4	10 Feb 2016	GWLAP	Board meeting	Strathalbyn
5	11 Feb 2016	NR SAMDB	Meeting	Mt Barker
6	13 Apr 2016	GWLAP	Board meeting	Strathalbyn
7	3 May 2016	RH&C	SC meeting	Mt Barker
8	18 May 2016	NR SAMDB	Regional Planning workshop	Murray Bridge
9	19 May 2016	NR SAMDB	Regional Planning workshop	Mt Barker
10	27 May 2016	NR SAMDB	Board meeting	Murray Bridge
11	31 May 2016	PCCC	RAP Forum	Adelaide
12	8 Jun 2016	GWLAP	Board meeting	Strathalbyn
13	15 Jun 2016	RH&C	Leaders Forum SC	Stirling
14	23 Jun 2016	NR SAMDB	Board meeting	Goolwa
15	2 Aug 2016	RH&C	SC	Goolwa
16	10 Aug 2016	GWLAP	Board meeting	Strathalbyn
17	22 Sep 2016	NR SAMDB	Board meeting	Berri
18	13 Oct 2016	RH&C	SC	Strathalbyn
19	27 Oct 2016	RH&C	SC	Mt Barker
20	9 Oct 2016	GWLAP	Board meeting	Strathalbyn
21	9 Nov 2016	GWLAP	Board meeting	Strathalbyn
22	9 Dec 2016	RH&C	RAP Launch	Mt Barker
23	23 Feb 2017	RH&C	SC	Yankalilla
24	10 May 2017	GWLAP	Board	Strathalbyn
25	14 Jun 2017	GWLAP	Board	Strathalbyn
26	15 June 2017	RH&C	SC	Strathalbyn
27	1 Jul 2017	GWLAP	Board	Strathalbyn
28	2 Aug 2017	RH&C	SC	Goolwa
29	9 Aug 2017	GWLAP	Board	Strathalbyn
30	23 Aug 2017	RH&C	SC	Mt Barker
31	8 Nov 2017	GWLAP	Board	Strathalbyn
32	14 Mar 2018	GWLAP	Board meeting	Strathalbyn
33	13Jun 2018	GWLAP	Board meeting	Strathalbyn
34	11 Jul 2018	GWLAP	Board meeting	Strathalbyn
35	8 Aug 2018	GWLAP	Board meeting	Strathalbyn

Source: DEWNR – Department Environment Water and Natural Resources, CC – Climate Change, GWLAP – Goolwa to Wellington Local Action Planning Association, NR SAMDB – Natural Resources South Australian Murray Darling Basin, RH&C SC – Resilient Hills and Coasts Steering Committee.

Table 2. Meetings with key individuals as part of the research. Meetings with several project officers including RAP coordinators, local government officer and government staff were held to support participation in a range of activities and leading up to participant observation events. These meeting were useful in keeping informed about a range of activities and ongoing developments. These meetings helped build relationships and connections with the various organisations, but continuity was often lost with changes in staff, restructuring and new governments.

	Date	Organisation or person	Location
1	4 Aug 2015	Alexandrina Council, RH&C	Goolwa
2	21 Oct 2015	Ex Government Officer	Adelaide
3	3 Dec 2015	Ex Government Officer	Adelaide
4	23 Feb 2016	RH&C	Goolwa
5	18 Mar 2016	LGASA	Adelaide
6	30 Mar 2016	DEWNR	Adelaide
7	30 Mar 2016	Ex Government Officer	Adelaide
8	4 May 2016	DPTI	Adelaide
9	27 May 2016	LGASA	Adelaide
10	20 Jun 2016	NR KI Officer	Adelaide
11	26 Jul 2016	DEWNR	Adelaide
12	2 Aug 2016	RH&C	Goolwa
13	25 Sept 2016	DEWNR	Adelaide
14	19 oct 2016	Ex Government Officer	Adelaide
15	23 Nov 2016	Consultant	Adelaide
16	20 Jan 2017	Ex Government	Adelaide

LGASA – Local Government Association of South Australia, DPTI – Department Planning Transport and Infrastructure, NR KI – Natural Resources Kangaroo Island

Table 3. While not classified as PO, participants in several events provided insight into the research domain.

	Date	Organisation	Event	Location
1	15 -16 Sep 2015	LASA	State Landcare Conference	Waikerie
2	17 Sep 2015	AMLR	CCA forum	Adelaide
3	14 – 16 Dec 2015	ESG	Conference	Canberra
4	14-15 Apr 2016	NRM Science	Conference	Adelaide
5	5-7 Jul 2016	NCCARF	Conference	Adelaide
6	19-26 Aug 2016	IGC	Conference	Beijing, China
7	7 Sep2016	Will Steffen	Seminar FU	Adelaide
8	23 Mar 2017	SAMDB	RAP launch	Murray Bridge
9	8 – 20 Oct 2017	ESG	Conference	Lund Sweden
10	23 -24 Nov 2017	DEWNR	Conference	Adelaide
11	7-10 May 2018	NCCARF	Conference	Melbourne
12	30 Aug 2018	DEWNR	Landscapes launch	Mt barker
13	13 Nov 2019	Paul Ehrlich	DEWNR	Adelaide
14	11 Feb 2021	SH&F Landscape	Community Landcare workshop	Mt Barker

IGC - International Geographical Congress

Appendix 6 Documents reviewed

The following is a list of additional (to those listed in Table 3.1) documents reviewed for this research. These are primarily but not exclusively government documents, produce by government or on behalf of government.

No.	Date	Title
1	1961	'Constitution Act, 1934',
10	1999	'Local Government Act 1999 '.
22	2013	Local Government Association of South Australia Sector Agreement,
23	2013	Water sensitive urban design,
24	2014	Transitioning Adelaide to a water sensitive city,
25	2015	Community Consultation Summary Report,
35	2015	Reforming democracy: Deciding, designing, and delivering together.
36	2015	South Australian Public Sector Values and Behaviours Framework,
48	2019	Proclamation of Planning Regions Recommendation Report by the Minister for Planning,
49	2019	Code of Ethics for the South Australian Public Sector,
50	2019	Landscape directions, Landscape SA Bill 2019,
51	2019	'Landscape South Australia (Transitional Provisions) Regulations 2019',
57	2020	National and international engagement,
64	2021	Regional Health Services. Our regional local health networks,
65	2022	South Australia declares climate emergency,
66	2022	Unpacked: South Australia's climate emergency declaration,

Appendix 7 Explanation of Adaptation Pathways process.

ATTACHMENT D - ADAPTATION PATHWAYS ANALYSIS

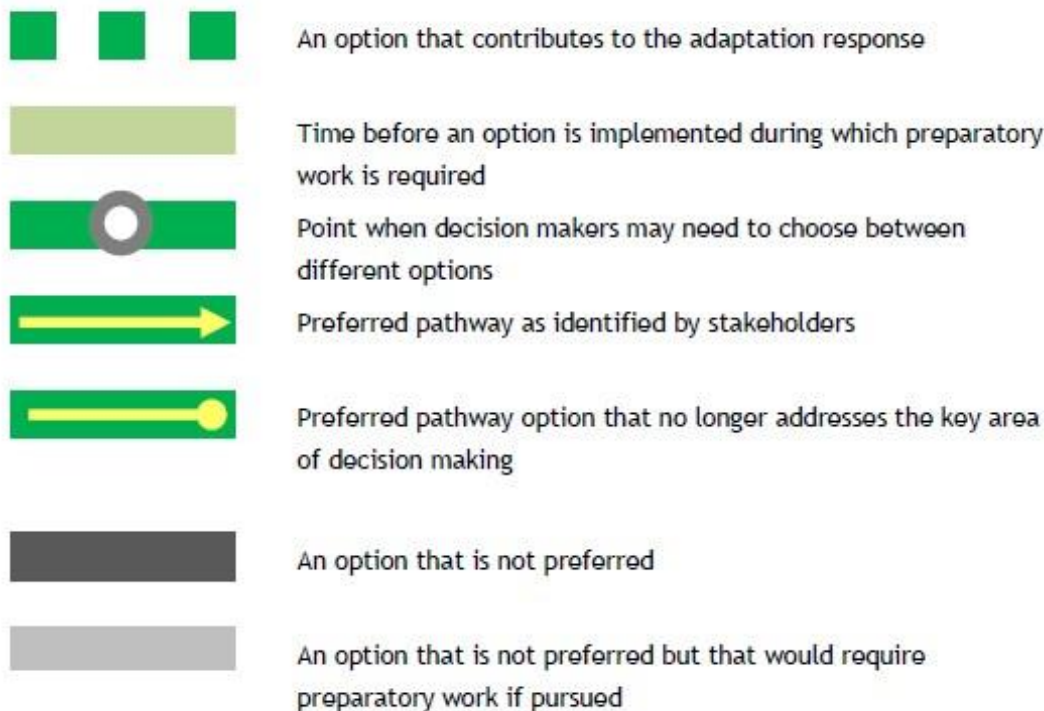
Adaptation pathways provides a way of considering and visualising adaptation options. Rather than being limited to identifying the best single set of adaptation options for a limited set of climate change scenarios, it enables decision makers and communities to consider a range of possible actions, how they will be impacted by climate change through time, and whether any options have a 'use-by-date' (i.e. a point in time at which they are no longer viable or useful for addressing the impact being experienced).

Pathways maps enable the exploration of what combination of options are most suitable for adapting to future climate change and how these could be sequenced over time (i.e. what should be done now, versus what can be delayed). This type of analysis can break down the disempowering sense that 'everything' will be affected by climate change, or that everything needs to be done at once. (Siebentritt & Stafford-Smtih, In review)

The horizontal axis of the pathway shows both a timescale, and expected changes to the climate that are relevant to the key area of decision making. The range of adaptation options identified for the key area of decision making are listed on the vertical axis of the pathways map.

Figure 17 describes the symbology used on each pathways map. A vertical line through 'decision point' circles identifies a point in time at which a decision needs to be made between different options. The timing of the decision is indicative relative to the x-axis. This is based on the premise that as climate changes some options will become less suitable as adaptation measures and so new ones may be required. The length of the horizontal lines shows how long the option can be expected to effectively address the key area of decision making.

The preferred pathway (yellow line/s, see Figure 17) identifies which options should be progressed now and into the future based on currently available information and preferences for implementation, including information provided by stakeholders at adaptation workshops. The preferred pathway does not preclude current actions that contribute to future adaptation from continuing but rather indicates actions over and above current practice that are required to enable adaptation to climate change impacts.



Source: Resilient Hills and Coasts 2016b

