The Need for Effective Community Participation in Catchment Planning in Australia

Submitted By

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I certify that the thesis entitled

The Development of a Framework to ensure Effective Community Participation in Catchment Planning in Australia

submitted for the degree of
Doctor of Technology

is the result of my own work and that where reference is made to the work of others, due acknowledgment is given.

I also certify that any material in the thesis which has been accepted for a degree or diploma by any other university or institution is identified in the text.

Full Name: Gregory Thomas Turner

Signed

Date
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Note with Regard to Time Frames

During the period of my research, catchment planning processes were being overhauled by the Commonwealth and State Governments. This meant that this project needed to finish as planning was being rapidly amended. The planning issues considered in my research are current only up to September 2004. Issues such as the implementation of water reform packages in Victoria occurred after this point in time.
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Chapter 1: The Role of People in Effective Catchment Planning

1.0 Introduction

Throughout the world, people are becoming involved in catchment planning at local, regional, state, national and international levels. For the time being, catchment planning can be considered as the management of human impacts on natural resources within our environment to ensure that these impacts are sustainable in the longer term. If catchment planning is considered to be the management of people and how they interact with the environment, it is vital that people are involved to allow them to understand and accept why planning processes are in place.

If appropriate planning is not in place, resources will continue to be utilised at unsustainable levels. Technology and the need to feed an ever-growing world population has meant that some people could continue to exploit all natural resources until they are exhausted – unless there are processes in place to manage these impacts. Catchment planning is a process that can be used to manage human impacts on natural systems.

If people do not understand why they are being asked to change the way they do things, they will loathe to comply with the planning that is put into place. This research seeks to understand the role of the community in effective catchment planning and how it might be used to improve catchment planning to ensure sustainable ecosystems.

With regard to catchment planning, the public is often informed about plans that a catchment planning agency proposes to put in place and perhaps chooses to seek their involvement in discussions over available options. The agency then considers it has consulted or engaged the public but then still does what it planned to do before the public was engaged.
Gregory (2001) postulates that the following ingredients are essential elements of good catchment planning:

- Good value for investment
- Technical soundness
- Community ownership and involvement.

Historically, in Australia, there have been high levels of involvement of people in catchment planning. This is especially so in Victoria with the introduction of salinity or land and water management plans in the last twenty years.

The challenge is to ensure the ongoing participation or involvement of all stakeholders in catchment planning to ensure ongoing ownership and effective implementation of catchment management activities within our catchments.

The effectiveness of current catchment planning structures and procedures needs to be examined and avenues explored to determine whether the current structure allows appropriate community involvement in catchment management.

In the northern part of the State of Victoria, Australia, members of the local community have been actively involved in catchment planning through salinity programs since 1988 (Wilkinson and Barr 1993). In recent times, the way in which the Loddon Murray community has been involved in catchment planning has changed significantly. This is due to the introduction of Catchment Management Authorities in the State of Victoria. In my view, the ability of the community to influence decision making appear to have diminished due to the addition of another layer of bureaucracy to catchment management.

It is this change that prompted me to undertake this research.
1.2 Aim of this Research Project

The aim of this research is to examine the effectiveness of existing catchment planning frameworks and assess if they have appropriate levels of community participation.

This research examines the effectiveness of ways of improving existing catchment planning processes that involves the community. The answers to this first question will be used to determine if there is a more efficient way to conduct catchment planning. If there is, the final step is to put forward an improved catchment planning framework that could be used primarily in Victoria and perhaps applied more widely across Australia and elsewhere.

Chapter 2 outlines the need for community engagement and explores how the community is and has been involved and engaged in catchment planning at all levels within Australia and overseas.

Chapter 3 outlines the institutional arrangements in place in Austria to enable and underpin effective catchment planning.

Chapter 4 outlines my role as a researcher, the approach I have used and the research methods used. There is discussion of the alternatives available for researching social issues and the rationale for the approach that I have adopted.

Chapter 5 considers the results of the research and discusses some of the outcomes therein. There is also a detailed consideration of the main case study – the Loddon Murray Strategy. How was it developed? How well did it involve community participation and how well does it contribute to effective catchment planning at the larger scale?

Chapter 6 discusses the implications of my research may have for natural resources management and catchment planning agencies.
Chapter 7 offers recommendations and a framework for appropriate catchment planning in the future with appropriate involvement of the community in effective decision making.
Chapter 2: Catchment Planning – the Need for Community Involvement

2.1 Introduction

Chapter One has introduced the need for this research. For ease of analysis, catchment planning processes fall into two main areas – the involvement of the community and the use of institutional arrangements. In this chapter the importance of effective community involvement in catchment planning is investigated. The institutional arrangements that make up the other part of catchment planning are outlined and discussed in Chapter Three.

2.2 Catchment Planning - What Is It?

Integrated catchment planning has been discussed for a long period of time and has various names - watershed planning in the United States (Heathcote 1998), river basin planning in the United Kingdom (Hennessy 1995, Mostert 1999) and landscape planning in Europe (Luz 2000).

Barrow (1998) outlines efforts by Sir William Wilcocks to coordinate demands within a basin when regulating the Nile River in the late 1890's. Barrow also discusses the use of Command Area Development Areas as units or areas of land that were managed for the allocation of irrigation water by the British in Colonial India in the nineteenth century. This type of planning is described by Barrow as similar to 'top-down' river basin development planning and management. 'Top down' planning refers to agencies carrying out works with little or no community participation and therefore little account of the interaction between people and the environment.

One of the outputs of my project is to develop a catchment planning framework that will improve catchment planning. In the context of this project, a catchment planning framework can be considered as the process that enables effective, sustainable catchment planning.

It is worth exploring the concept of catchment planning and putting it into context. A definition of catchment planning is difficult
given that it is related to scope. Any human activity that occurs within a catchment or a river basin could be subject to catchment planning processes.

Heathcote (1998) points out that watershed planning (a term synonymous with catchment planning in North America) is a sequence of activities that occur over time. Planning initiatives begin with the awareness of a problem and progress through information gathering stages to a final decision or action. Johnson et al. (1996) also note this confusion over the definition of terms such as 'comprehensive watershed planning and management' and 'unified river basin management in discussions of integrated catchment management.

Johnson et al. (1996) state that the development of a catchment planning strategy requires a complex process of strategic planning and negotiation on the use and management of the catchment's resources. Rhoades (1997) also discusses multipurpose participatory watershed projects at varying scales that could be, in descending scale, catchments, landscapes, river basins and buffer zones. Ewing et al. (2000) describe a change in catchment planning from the management of land and water assets to the incorporation of social and economic issues and hence argue for the need for public participation in land and water or catchment planning.

This concept distinguishes between catchment planning and natural resource management. Natural resource management and catchment planning are interchangeable to some extent but there is a greater involvement of people in catchment planning. Managers that are involved in natural resource management often make more decisions independently of public input. Catchment planning is more about managing human impacts on natural resources where the utilisation of natural resources management, for example, forestry, mining or agriculture could be seen as the creation of that impact. Durham and Brown (1998) point out that public participation was seen as enhancing the quality of decision making in watershed planning in
the United States. This is because the catchment planning approach provides the public with the opportunity to contribute pertinent information and ownership. If the actions of people, including resource managers from outside the community, are being managed, it would be logical that those people would like some say or consultation in that process, that is, community consultation.

The previous statement points to some of the problems associated with community consultation in catchment planning.

Sarkissian (1999 p. 11) discusses the following two points when examining good catchment planning:

- How much power is being transferred to the community?
- What are the expectations, roles and responsibilities of all people involved?

The answers to these questions vary according to the stakeholder concerned and how prepared they are to share their management responsibility (true collaboration) with the community or merely tell it what it is doing.

In 1993, Wilkinson and Barr (1993) reviewed the success of the salinity program in Victoria. The Murray Darling Basin Commission has identified the salinisation of land and water as the biggest environment problem in the Murray Darling Basin. The Loddon Murray area, in the State of Victoria, is in this basin. One of their recommendations was to make sure that the objective of public participation was clearly stated and that people needed to know the level of power being offered to them (Wilkinson and Barr 1993). Even though the recommendations were made a decade ago, they are still appropriate, relevant and worth reiterating.

It is necessary to explore the context in which catchment planning is developed and implemented. In the planning process involved with the strategies mentioned above, the question needs to be asked – what is catchment planning? Catchment planning might be skewed more toward the social and economic accounts but would certainly not disregard the environmental account as can be seen in
the following definition of catchment planning that is used in my research project:

*Catchment planning is the collaborative management of land and water within the given boundaries of a catchment that integrates social, environmental and economic issues.*

This definition addresses the Triple Bottom Line, that is the addressing of social, environment and economic issues, that was put forward by the United Nations Earth Summit, Agenda 21 (UN 1992). If catchment planning is to address the three dimensions discussed above, a way needs to be found to involve the community to ensure acceptance and ownership of the planning process and its outcomes.

Ideally, catchment planners should go further to ensure that the needs of all stakeholders are addressed at an appropriate level. To achieve collaborative management, catchment planners need to actively engage and work with the relevant community and make decisions that address the needs of the catchment planning agency involved as well as the needs of the members of that community. Natural resource managers, on the other hand, can be seen to have a greater reliance on legislative requirements when undertaking their planning. Natural resource management might perhaps be more skewed towards the environmental and economic aspects of the Triple Bottom Line discussed above and could also be governed by policy and does not allow those natural managers the flexibility to involve the community or not. As discussed later in this chapter, it was seen as unnecessary and superfluous.

Too often in the past, resource managers have ignored proper community involvement and engagement in their planning. Shindler (1999 p. 7) has noted the three 'I's' of catchment management that has happened in North America:

- Inform the public
- Involve the public and then
- Ignore the public
This approach is no longer acceptable in contemporary catchment planning.

2.3 People and Catchment Planning

People’s expectations of catchment planning have changed with time. Until the mid 1980’s, society's 'leaders' planned for the 'good of the people'. Government departments or agencies would decide on a plan of action and then commence implementation – assuming that this was in the best interests of all. Barrow (1998) points out that the structure of some government departments made it very difficult to enable public participation – especially with river basin development management. The specialists, for example engineers and scientists, did not wish to share their expertise and power with members of the public or were not trained to do so. This ‘top-down’ type of planning underwent a major change in the Victorian Government’s approach to catchment planning with the development of community-based land and water planning in the early 1980’s. One reason why this happened is associated with the proposed Mineral Reserves Evaporation Basin Scheme in northern Victoria.

The Victorian State Rivers and Water Supply Commission (SR&WSC) decided to add this scheme to existing salt evaporation basins based at Lake Tutcheewop also in northern Victoria in the early 1980’s further to the east. The SR&WSC acquired land to construct a delivery channel to divert saline water to the proposed evaporation basin mentioned above and actually constructed bridges and subways for the channel under a railway line.

The people who owned land adjacent to the site of the proposed evaporation basin were opposed ot its construction. They felt that the value of their land would be eroded and there was also the perception that the basin could leak and salinise their land and they took legal action. Eventually, the local landholders lost a class action against the

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1 The State Rivers and Rural Water Supply Commission was split up into rural water authorities in 1995. The Goulburn Murray Water Authority has this role in the study area.
SR&WSC in the Victorian Supreme Court seeking to halt this scheme. Nevertheless, the Victorian Government received a very clear message that the community demanded to be involved in catchment planning (Wilkinson and Barr 1993). Whilst the bridges can still be seen along the channel route, the construction of the Mineral Reserves Evaporation Basin Scheme was halted by the Victorian Government.

People are now testing what the 'good of the people' actually means through participative management. Konisky (2001) in Australia.

Catchment planning in Australia encompasses a group of management processes that are driven by community groups such as Landcare Groups\(^2\), user groups such as the Victorian Farmers' Federation\(^3\), Commonwealth, State and Local Government and other non-government agencies, for example, the Trust for Nature\(^4\). In a discussion of community catchment management, Kellert (2000) points out the importance in the achievement of conservation goals through the provision of social and economic incentives and the use of local knowledge or conventional wisdom amassed over a long period of time - perhaps several generations.

**2.3.1 Catchment Planning and the ‘Triple Bottom Line’**

It is important to consider the success of the outcomes of catchment planning processes. Australia has committed to the incorporation of Agenda 21 (UN, 1992) into all levels of planning. Inherent in that commitment is that catchment planning must address social, environmental and economic considerations (DEH 2004).

The first North Central Regional Catchment Strategy (NCCALPB(VIC) 1997 p. 9) states in its introduction:

\(^2\) Landcare is a quasi-government organisation established in the late 1980’s, generally groups of local people involved in land protection

\(^3\) The Victorian Farmers’ Federation is a farmer-based organisation that has local branches throughout Victoria, Australia
A Regional Catchment Strategy should provide a sound strategic long-term basis for natural resource management underpinned by sustainable environmental, economic and social benefits for regional development.

The revised strategy (NCCCMA (VIC) 2003) examines the role of people and the need to strengthen their skills and motivation to continue their work in improving catchment management. This process is now known as community capacity building. Fortunately, it is now recognised that people are an important part of catchment management at a local level.

Outside Australia, the role of people has been discussed for many years. Duram and Brown (1999) pointed out that public participation is very important for good watershed planning in the United States. It had a positive effect on reaching consensus on goals and legitimising final plans. Glicken (2000) also discussed the importance of public participation in the planning stage. Kondo (2000) noted the importance of the increasing role of people in planning in Japan, pointing to the opposition of the Friends of Lake Biwa to new major development projects and the need to restore the natural ecosystems that filter out harmful nutrients.

**Issue 1:**

There is a need to assess the effectiveness of existing catchment planning processes, and how they address the need to equitably address Triple Bottom Line accountability.

Rhoades (1997) pointed out that participatory planning resulted in the completion of projects that were not receiving the desired results using conventional top-down processes.

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4 The Trust for Nature mission statement states that it will strive to ensure that all significant natural areas in private ownership in Victoria are conserved (TFN, 2004 #304)
2.4 The Role of People in Catchment Planning

Gregory et al. (2001 p. 37) have identified that in any natural resource management framework that allows for public participation there are three basic premises:

- A pledge to incorporate stakeholder values, especially groups negatively affected by the process,
- The use of good science and
- The undertaking that funds will be wisely used.

Many catchment management projects fail because two of the three premises are compromised. Quite often projects do not start because the community is not convinced that the project can be justified economically or scientifically. The important point is that the three premises need to be addressed and incorporated into a planning process as early as possible.

In catchment planning, the need to address social, economic and environmental issues still holds true. In most cases, 'stakeholders' and 'community' tend to be interchangeable words. Community participation is a concept that needs to be examined as it is seen to underpin catchment planning process. Heathcote (1998) points out that community participation in catchment planning was relatively unheard of twenty-five years ago. It was seen as 'unnecessary and superfluous, if not downright invasive by many decision-making bodies' (Heathcote 1998). Even ten years ago, it was still only just becoming popular.

Kapoor (2001) points out that today community participation is seen as being decentralised, community-oriented and holistic in its view of the environment. It is also seen as being inclusive and localised. There are risks that the community engagement could be too inclusive. Important information and people could be excluded as they are seen to be not part of the process or target area if community engagement is not planned appropriately.

There are important power relationships operating in any catchment planning model. The interactions between local, national
and global issues are significant, as is the interrelationship between government, the private sector and community. Kapoor (2001) points out that these issues as well as gender relationships and issues relating to race are perceived as being addressed with the use of community participation. When looking at the quality of community participation, the question needs to be asked - who participates and how? How are participants chosen for a role in catchment planning and are they appropriate people for that task.

Catchment planning involves people having a say in managing the environment in which they live. Part of it is institutional process - the legislation, policy and infrastructure that is used to drive catchment planning. The other part is the role played by people. Who decides to undertake an action? Why should that course of action take place and if so, when and finally how will it be done and who will pay for it?

While community involvement is important if any planning framework is to work, it is important to examine the existing frameworks that relate to catchment planning. Planning frameworks exist at all levels and vary in purpose. Reimold and Singer (1998) discuss the importance of community capacity building as part of the catchment planning process. This occurs through collaboration and cooperation and the gaining of a sense of common purpose to develop lasting solutions. The same authors vary the Triple Bottom Line of social, environmental and economic benefits, talking about the environmental, community and economic benefits of a catchment planning approach. Community participation in catchment planning is seen as essential, as is its integration into wider catchment management planning.

Konisky et al. (2001) believe that collaborative watershed management is a loose set of stakeholder arrangements with individuals representing a diverse set of interests working together to manage a watershed. Pratt and McNitt (1998) point out that successful integration of local programs with state and national
programs could be the hardest challenge to the implementation of effective catchment planning. This is not good news for catchment planning in Australia given that catchment planning structures are quite complex and involve a range of government departments and agencies at various levels of Government.

It is significant that the responsibility for leadership has been distributed between the Commonwealth and State Governments and regional catchment bodies and Local Government. Another observation is that regional and local planning is seen as a major role of the regional catchment bodies and Local Government. It is seen as a State Government’s jurisdiction to undertake natural resources management extension and capacity building programs.

**Issue Two:**

The issues of leadership, good planning and community engagement are very important to be able to achieve effective catchment management.

Sometimes, an honest attempt to involve community people in catchment planning can go awry because planners have not thought about the role of those people in the final outcome. The community may have been consulted to keep them informed about proposed works rather than being given the power to decide on the nature of those works. This is outlined in the next section.

**2.4.1 An Example of Inappropriate Community Involvement**

It is possible for the ‘wrong community’ to be involved in a catchment management project. I was involved in a project to manage water quality in Lake Elizabeth in northern Victoria. In line with common practice at the time, a steering committee was formed in 1997 and charged with the production of a wetland management plan. Scientists and engineers developed a concept involving the diversion of saline water out of the lake to a salt harvesting operation nearby and replacing the water with fresh water from the irrigation system.
The concept was agreed to by a steering committee that included members of the local community that lived close to the lake. This committee also agreed to an appropriate height or operating level for this lake.

When environmental water was let into the lake as agreed, there was an uproar from the same people that had land adjacent to the lake. In hindsight, it appears that the aim of some of these people on the steering committee was to see the lake dry out. Legally, the deliberate drying out of this lake was not an option. It could destroy a population of a species that is listed is vulnerable or could become extinct under the schedules of the Environment Protection and Biodiversity Conservation Act 1999. This species is a small fish known as the Murray Hardyhead (Craterocephalus fluviatilis). Whilst this action would also need to address Victorian legislation, the Wildlife Act 1975 and the Flora and Fauna Guarantee Act 1988, it is the representativeness of the community that needs closer examination.

All of the local community members that were on the steering committee were adjacent landholders. As Lake Elizabeth is a terminal lake, water cannot leave the lake naturally. When it receives floodwater, it can cause expensive inconvenience to the people immediately adjacent to the lake as the lake is perceived to be too high. Their land is either inundated with water or the groundwater levels beneath their land are increased because the hydraulic pressure of the higher water levels in the lake adds water to the water table. In terms of priorities, the welfare of the lake and the fish within it were not a high priority for the landholders trying to farm land adjacent to the lake.

These higher levels reduce the productivity of their land through salinisation, waterlogging or both. The question needs to be asked - was this group truly representative of the larger community? Lake Elizabeth is listed in the Directory of Important Wetlands (ANCA 1996)

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5 There is an allocation of 27,600 megalitres of water for the mid-Murray lake system that forms part of Victoria’s environmental water allocation.
and is used by species of migratory birds that are listed under international treaties between Australia, Japan and China. Did the members of the community on the Lake Elizabeth Steering Committee truly serve the interests of all Australians when looking at the best way to manage the lake?

In 2002, the steering committee was reconvened and its membership was changed to ensure that a wider range of interests were represented on the committee. The reforming of the steering committee is contentious when looking at the literature. What was the steering committee supposed to do? Was it reformed because the right outcomes were not achieved? Who decides what the right outcomes should be? Is the steering committee being given the power to decide or is it being consulted with the final decision resting with land managers and technical experts.

The previous discussion raises the issue of types of community involvement. It could be argued that the community group discussed in the previous paragraph was reconvened as the Victorian Government had to achieve a certain goal. The first group had been working within their set of values. Unfortunately, those values did not align with the values or the policies of the Victorian or Commonwealth Government. The second committee had a different set of values that would address the needs of the government. It still involved the community and also had representatives from Local and the Victorian Government.

In the previous example, adjacent neighbours were asked to be involved in planning that had international ramifications. The simple question had not been asked – why is the community being involved?

Obviously there are different types of community participation. The people in the previous example were initially given the delegated power to decide on the best level for the lake – they thought they were making the decisions. This level of involvement was reduced to a consultation level and produced a different outcome. The different types of community involvement are discussed in the next section.
2.4.2 Citizen Participation

For the purpose of my research, I am using the terms of citizen participation and community involvement interchangeably.

Table 1 outlines various types of community involvement and is known as Arnstein's Ladder of Citizen Participation.

Table 1. Arnstein's Ladder of Citizen Participation (Sarkissian 1999 p. 11).

<table>
<thead>
<tr>
<th></th>
<th>Degrees of citizen power</th>
<th>Degrees of tokenism</th>
<th>Degrees of non-participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Citizen control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Delegated power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Partnership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Placation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Consultation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Informing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Manipulation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sarkissian et al. (1999) point out that this concept is very simplistic in approach and has stood the test of time. This model was developed in 1969 and is still valid in its approach today. The community members on the Lake Elizabeth steering committee initially had community involvement that could be described as a partnership. The members on the second committee had diminished involvement that could be described as consultation or perhaps even placation.

The type of community involvement needs to be matched to a required outcome. Whilst citizen control is always seen as desirable for good catchment management, Government policy may mean that it cannot be a reality in some instances. The need for planned catchment planning is discussed in the next section.
2.4.3 Roles and Responsibilities and Community Engagement

The Department of Natural Resources in the State of Queensland, Australia, conducted a review of community engagement in the development of its Water Allocation Management Plans in 2000 (DNR(QLD) 2000). A major point made by the review was the importance of clarifying roles and responsibilities. What is the community being asked to contribute? How much responsibility is the relevant authority going to give the community group? Heathcote (1998) points out that quite often the community is not consulted until long after the planning process has started – either at the implementation stage or even kept to a consultative role with no active participation.

Arnstein’s Ladder, (Table 1) was used as a basis for the Victorian Government’s Department of Sustainability and Environment (DSE)\(^6\) Community Engagement Framework that is shown graphically below (Figure 1).

The concept of increasing power or influence being transferred to the community is implicit in the DSE model and Arnstein's Ladder, moving from a role of informing or non-participation through to empowerment or a high degree of citizen power. All of the four types of involvement that are listed in the outer rings are still seen as appropriated methods of community engagement in their own right. (DSE/DPI 2004).

In mid 2003, the Department of Sustainability and Environment (VIC) started the launch of its community engagement framework - consisting of the documentation of a framework and a resource kit called the Community Engagement Workbook. This framework was centred on a model called the Wheel of Community Engagement, shown in Figure 1.

\(^6\) In November, 2002, the Department of Natural Resources and Environment was split into the Department of Sustainability and Environment (managing natural resources) and the Department of Primary Industries.
Senior managers within the former Department of Natural Resources and Environment in Victoria had become very concerned that many of its officers were engaging the community with little planning or forethought. Officers would start thinking about how they would engage with the community and neglect to think about why they were engaging with the community. This may have been a mistake with the Lake Elizabeth example. Staff may have been too keen to get the community on board but did not think about the long-term consequences. Why was the community being involved when the final say was out of their hands? In looking at the Wheel of Community Engagement, perhaps this community should only have been consulted. Figure One is the model currently being used by the Department of Primary Industries and Department of Sustainability and Environment in Victoria.
With this model, the type of community involvement moves around the four quadrants from 'Inform' to 'Empower'. This model puts forward the idea that any one of the quadrants still represents real community engagement. The act of informing a community about a certain proposal can be seen as a form of community engagement. The epitome of community engagement is the point at which government agency officers are no longer required to be involved in community engagement processes - the community drives the whole process as it now has been empowered to understand the benefits associated with the project continuing.

The adoption of the Community Engagement Framework within the Department of Sustainability and Environment and the Department of Primary Industries in Victoria is a good step forward in ensuring community involvement in catchment planning. It can only work when the relevant community is fully aware of their level of involvement in the decision-making processes associated with catchment planning. Hopefully, this tool receives wider acceptance among Victorian catchment planning agencies as it provides many ideas and yet a common approach to good community engagement.

The final workbook was released in January 2004. To highlight its importance, it was released jointly by the Department of Sustainability and Environment and Department of Primary Industries in Victoria.

It is important that the participants in community engagement efforts are clear about their roles and responsibilities and what is being promised when they are engaged. Trust can be eroded if the method of community engagement is inappropriate or a promise of a level of involvement or decision making is not delivered. In other words, power is promised but not delivered. The importance of these principles can be seen in the development of the Loddon Murray Strategy that is outlined in Chapter Five.

The setting of roles and responsibilities is important and was one of the reasons for the success of the early development of the Loddon
Murray Strategy. Over one hundred people were involved in the development of the strategy. At the launch of the Strategy, the roles, responsibilities and expectations of the various groups were outlined (Turner and Shanahan, 2001). The feedback from this exercise was very positive. Participants were happy to be involved because they knew the level of involvement, the time commitment required and how their work would contribute to the final outcome.

Wilkinson and Barr (1993) point out that most of the early salinity management groups took between 30 and 40 meetings over three or four years before presenting a draft salinity management plan. The groups working on the new Loddon Murray Strategy were asked to do an equivalent task in nine months. The launch to start the development of the plan took place in November 2001. The first draft of the strategy (LMF 2002) was submitted to the Victorian Government on 30 June 2002. The location of the Loddon Murray region and the previous four land and water management plans can be seen in Figure 2.

Whilst there was previous work to build on, the commitment by community was excellent. As will be discussed in Chapter 4, the participants worked in the groups that addressed nine major groups of issues. The previous planning had involved groups that were locality based. A comment was made several times by different task group members that the meetings of the task groups were quick and focussed. Meetings of the previous land and water management planning groups could take up to four or five hours as they were receiving information and considering issues over a wide range of topics such as salinity disposal options for the whole area and the water requirements of a local wetland. Importantly, the members of the task groups knew their roles and responsibilities and expected outcomes at the commencement of their work. The groups were thus focussed and committed to meeting their dead-lines.
Figure 2. Loddon Murray region in northern Victoria, Australia
During the development of the Loddon Murray Strategy, the community identified with Arnstein’s Ladder (see Table 1) and understood that their participation in catchment planning had changed from citizen participation to tokenism (LMF 2002). As stated above, the community engagement model adopted by the Department of Sustainability and Environment has the four essential elements within - inform, consult, involve, empower.

When activities are being undertaken that involve the community, the type of community engagement needs to be identified. How is the community being engaged and for what purpose? Is the community that is to be engaged just being told what is going to happen or is the community being given control of a project? The opportunity for community ownership may not be available if the community is being informed rather than being involved. The Government may not wish the community to have any control over the project but still wants that group to know why a particular course of action is being undertaken.

**Issue Three**

It is important that community involvement is planned and appropriate to the activity being undertaken or the desired outcomes sought. How is the community involved and for what purpose?

Whatever the level of community engagement, the participants must fully understand their level of involvement. If full collaboration is not being sought, this must be made very clear to the participants. Otherwise people are working with the expectation that they have more control or a higher level of power or influence than is actually the case. Is the group being asked to make decisions, offer recommendations for another body to make decisions or has it been convened so that an agency could share information with a group of stakeholders in a project that it is undertaking?
These three scenarios offer very different levels of responsibility, each with an associated set of expectations. If these expectations are not met, people can become angry and disenfranchised and actually attempt to stop the project so that it has to be recommenced with a different frame of reference that suits their own set of objectives. This is known in the literature as Solomon’s Trap (Sarkissian and Walsh 1999). In their review of salinity management in Victoria in the 1990’s, Wilkinson and Barr also recommended that people need to be aware of the level of power being offered to them (Wilkinson and Barr 1993).

Another issue in public participation is the issue of justice. Decisions e made, while still involving the public, are not seen to be made fairly. Smith and McDonough (2001) point out that the problem often lies within the actual process. People must be able to attend, initiate discourse, be involved in the debate and influence the final collective decision. They must have access to information and what it actually means and be able to understand this information. The information put before a group by an agency is often set to a desired outcome that suits the agency concerned.

Often agency experts will develop alternatives or scenarios and then have the group consider these options. Most of the planning that is carried out usually puts forward several scenarios. These include a 'do nothing' scenario and various versions culminating in a scenario where resources are endless and the perfect outcome is achieved. Smith and McDonough (2001) believe that this process implies that the crucial decisions have been made and thus public involvement is merely for comment.

McCoo and Guthrie (2001) point out that planning must integrate scientific information, publicly held knowledge and also the policy and processes that government agencies must incorporate into planning. An example of good community participation is the development of Landcare Networks in Australia.

The Landcare movement started in the late 1980’s in Australia when Commonwealth and State Governments levels actively
promoted the establishment of Landcare groups. Bob Hawke, the Australian Prime Minister at the time, declared 1990 the ‘Year of Landcare’ and the next ten years the ‘Decade of Landcare’ (Mack 2001). The governments did not foresee that some of the Landcare Groups would develop Landcare Networks able to capitalise on some of the benefits that arise from being a bigger body. Some of the benefits included being able to attract more funding to appoint facilitators to assist with the implementation of on-ground works, more political power and the ability to be independent of government.

Sobels et al. (2001) discussed the emergence of the Landcare networks in Australia at the start of the new millennium. These networks had developed the capacity to provide the advice and direction that was previously supplied by government agency officers. Sobels et al. (2001) propose that this unexpected development forced government agencies to become full partners in these networks. These networks were powerful enough to force government to address their concerns. Previously, government agencies may have listened to these groups but still had a choice in how they addressed those concerns.

McCool and Guthrie (2001 p. 312) describe successful public involvement programs as those that

- involve collaborative decision making
- build relationships with participants
- involve communication across agency/non-agency boundaries
- result in measures of social and political acceptance of proposed actions

Success can be interpreted differently. Scientists may see success if their knowledge is used to develop a final outcome. Agencies may see success if change is achieved that they can manage within their governance structures.

A community person may view the abandoning of a proposed project as success (McCool and Guthrie 2001). An example is the
abandoning of the drainage scheme that was discussed earlier where a local community was able to halt a multi-million dollar project.

2.5 Community Involvement in the Loddon Murray Region

In Victoria, Australia, much of the catchment planning has taken place under the banner of salinity or land and water management planning. Russ (1995) points out that groups were coming together to manage salinity and drainage as early as 1974. The Kerang Irrigation Region Drainage Action Committee (KIRSAC) was formed in 1976. Further to the east, its equivalent formed in the Goulburn Catchment two years before that. The KIRSAC group was a major influence in the development of the four salinity management plans that were present in the area ten years later.

Between 1986 and 1997, 17 salinity management plans were developed in Victoria. In the Loddon Murray region, four land and water management or salinity management plans were in place. The development and implementation of these plans is discussed in the next section.

2.5.1 Historical Perspective.

In the Loddon Murray area, four land and water management plans have been developed and involve extensive community participation. Once a local community saw the need to establish a formal group to manage their salinity problems, a consultative structure was set up to gather detailed local community input using Local Action Advisory Groups (LAAGS). These groups were formed at local levels to gather information on local issues and concerns and reported to Community Working Groups (Wilkinson and Barr 1993). The Community Working Group worked in collaboration with a Technical Working Group - whose members were technical experts and agency staff - to ensure the plans were technically robust and achievable and the final plans were forwarded to Government for endorsement. This process is illustrated in Figure 3.
Once the plans were endorsed, an implementation group was formed to manage the new salinity or land and water management plan.

**Figure 3. Community Involvement in Salinity Management Planning in Northern Victoria.**

Note: The double-headed arrows indicate where there is dialogue between the different groups.

Wilkinson and Barr (1993) point out that each of the four groups had more than seventy meetings before they could agree on their final plan. This was because the issues were complex and needed a great deal of research before the groups were prepared to put forward the many land and water management activities that make up their plan.

Prior to 1998, a group within the former Victorian Department of Natural Resources and Environment, the Salinity Bureau, oversaw the approval of salinity management plans on behalf of the Victorian Government. The approval process included the endorsement of each salinity management plan's activities and goals by the Victorian Government and also the cost sharing suggested in the plan - how much funding was the Victorian Government prepared to contribute to the plan. The salinity management plans had a 30 year time frame and included both short and long term goals, indicative funding and agreed targets.
The Community Working Groups were usually geographically-based with people representing different areas. There were also representatives from Local Government and special interest groups such as people with an interest in environmental matters. Whilst there were also representatives from government agencies (the former Department of Natural Resources and Environment and Goulburn Murray Water), these people did not have voting rights. Agency staff were seen as either supplying support to the group or as technical experts.

In the Loddon Murray area, the following catchment management plans were in place (the year they were endorsed by the Victorian Government is in brackets):
- Draft Tragowel Plains Salinity Management Plan (1990)
- Draft Boort West of Loddon Salinity Management Plan (1994)

These groups were primarily committed to salinity management, changing their names to land and water management groups when the issue of salinity temporarily lost some of its appeal to funding bodies in the late 1990’s in Australia. These groups were politically quite powerful as the Chairs had direct access to State Ministers and senior public servants. There was a Chairperson’s Forum that met quarterly. State Government Ministers and senior public servants participated in this Forum.

The four groups were amalgamated as part of the development of the Loddon Murray Land and Water Management Strategy in 2002.
2.5.2 Current Perspective

By the middle of 2003, the Kerang community was being asked to be involved in major new strategies at a range of levels. They included:

- The Living Murray discussion paper (MDBC 2002) that involves the Commonwealth Government of Australia, the states of Victoria, New South Wales, South Australia and the Australian Capital Territory
- *Securing Our Water Future* (DSEV 2003c) that involves the State of Victoria
- *North Central Regional Catchment Strategy* (NCCCMA(VIC) 2003) that involves planning in the North Central Catchment
- *Loddon Murray Strategy* (Turner and Shanahan, 2002) that covers the Loddon Murray sub-region
- *Future Land Use Change Pilot* that involves a large portion of the Shire of Gannawarra\(^7\).

All of these documents, except for the Loddon Murray Strategy, have caused varying levels of concern in the Kerang community. In my view, they may have not been the best examples of good catchment planning in that they have not engaged the community most directly involved – the people or groups that will feel the impacts of those plans. I have been involved in workshops and public meetings that have considered all of the above strategies. As you work down the list, the geographical area covered by each strategy or document diminishes.

\(^7\) The Future Land Use Project is a pilot project looking at land use change. An options report was submitted to the Victorian Government in July 2004
The Living Murray program applies across five states and is managed by the Murray Darling Basin Commission. Securing Our Water Future is a Victorian government initiative that is being implemented by the Victorian Department of Sustainability and Environment and is discussed in detail in Section 2.9. The North Central Regional Catchment Strategy is at a regional scale and is being undertaken by the North Central Catchment Management Authority and its partners. The Loddon Murray Strategy is an action plan under North Central Regional Catchment Strategy and the Future Land Use Change Pilot is being developed or implemented by the Loddon Murray Forum. The role of the Loddon Murray Forum is discussed in detail in Chapter Five.

The communities in the Loddon Murray area were being asked to respond to five strategies that should be achieving the same overall objective – good catchment management. This has not been the case because the timing of the different strategies is out of step with each other. Furthermore, four of the strategies have come under scrutiny from the local community because of the way they were engaged. The groups working on these strategies have not been able to engage a wide enough section of the community and have received criticism because of that.

How every person in a catchment can be addressed is an ongoing and unanswered question. Quite often, it is not until a person feels threatened by a change suggested by a plan that they will react. Unfortunately it is usually quite a volatile reaction based on personal circumstances. There is always the assumption that people want to be involved but individuals may not have the resources to be involved or simply choose not to be involved.

The Victorian Government actually changed their approach between the release of the Green Paper on Water Reform, “Securing

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8 The Murray Darling Basin Commission is the operations part of the Murray Darling Basin Ministerial Council. The Council’s representatives are State Ministers, their Commonwealth counterparts and senior agency representatives from each State or Territory in the Murray Darling Basin.
Our Water Future” (DSEV 2003c) to the release of its White Paper in June 2004 (DSEV 2004) on the same topic. When the Victorian Government reviews major legislation, the process is that a Green Paper is released for initial discussion. Comment is received and then a more specific document is developed that is known as a White Paper. Finally, after further comments, the results are incorporated into legislation.

The approach was to release parts of the proposed White Paper to the relevant group prior to its final release. The content of Chapter Four of that paper that are relevant to irrigation were released to Water Service Committees for comment in April 2004 (pers. comm. member Torrumbarry Water Services Committee⁹, April 2004). I was advised that this approach was being used to test the level of response from the community on a range of issues related to the White Paper on Water Reform (pers. comm. senior manager, Department of Primary Industries).

Given that water reform is an issue that is relevant to all Victorians, it is very hard to engage with all groups. By engaging with relevant and informed groups, the Victorian Government was able to determine how their proposals will be accepted and what would need to be done to help the community accept changes that it may not fully accept.

During the development of this project, the importance of social research was soon recognised. Catchment management is now strongly focussed on managing for economic, environmental and social outcomes.

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⁹ These groups are advisory groups that have input into Goulburn Murray Rural Water Authority policy
The need to implement Agenda 21 of the Rio Convention (UN 1992) on Sustainability at all levels of catchment planning can be seen in the following planning documents:

- National Action Plan on Salinity and Water Quality program (AFFA 2000b),
- Victoria’s Salinity Management Framework - Restoring our Catchments (DNREV 2000a)

Although these strategies claim to address social, environmental and economic issues, they do not clearly explain how they might be addressed. In the Victorian salinity management program, it is much easier to prove that the economic and environmental issues have been addressed. It is not as easy to demonstrate that the social issues have been addressed to the same extent.

During the development of the Loddon Murray Strategy, the Loddon Murray Forum\(^{10}\) identified the addressing of social issues as a high priority. To date, economists and extension staff have been working with community groups to facilitate the economic and environmental programs. These programs use monitoring data and economic assessments to demonstrate their effectiveness. This information has not been as readily available for the social issues. Further work is needed to identify the important and relevant social issues and how they might be managed and measured.

\(^{10}\) The Loddon Murray Forum is consists of community people and government agency representatives. Its major role was to oversee the development of the Loddon Murray Strategy.
2.6 Summary

In this Chapter, several issues have been identified in the literature. These are outlined below. I have also set out how these issues relate to my research questions that were initially listed in Chapter One.

**Issue 1:**
There is a need to assess the effectiveness of existing catchment planning processes, and how they address the need to equitably address Triple Bottom Line accountability.

- *How well do current catchment planning processes perform and do they involve communities appropriately?*

**Issue 2:**
The issues of leadership, good planning and community engagement are pivotal points in my research.

- *Do catchment planning agencies believe they involve the community in their catchment planning at an appropriate level?*

**Issue 3**
It is important that community involvement is planned and appropriate to the activity being undertaken or the desired outcomes sought. How is the community involved and for what purpose?

- *What changes might be needed to ensure good catchment planning with good participative planning?*
Whilst the wording in the text boxes is not replicated in the wording of the research questions, the justification for posing these questions is very strong as they do address the issues set out in the three text boxes.

This will be achieved by exploring the following questions:

- *How well do current catchment planning processes perform and do they involve communities appropriately?*
- *Do catchment planning agencies believe they effectively involve the community in their catchment planning at an appropriate level?*
- *What changes might be needed to ensure good catchment planning with good participative planning?*

A recurring point in this chapter is that community involvement is important if we want to have good catchment planning. In examining the various processes underway, it can be seen that they are very complex and vary substantially. Catchment planning is underway across Australia and the rest of the world. It addresses a complex range of issues and involves lots of different types of stakeholders with different backgrounds and interests. Even so, there are some important principles that emerge from the literature. The need for good leadership, appropriate community involvement, groups and people involved in catchment planning with clear roles and responsibilities and good honest communication are clearly important for effective catchment planning. These areas are examined as part of the development of my research in Chapter Four.

In Chapter Three, the institutional frameworks that are in place to support catchment planning are discussed in detail. The need to understand how people interface with these structures is also discussed.
Chapter 3: Institutional Arrangements in Australia

As of 2004, there are institutional arrangements at five levels of catchment planning in Australia – Commonwealth Government, State Government, regional catchment bodies, sub-regional strategies and Local Government. The level of government with prime responsibility for each planning activity is outlined in Table 2.

At a Commonwealth level (Australian Government) land and water management is delivered through two programmes - the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust. These programs are underpinned legally with the Environment Protection and Biodiversity Conservation Act 1999. In the State of Victoria there are a range of programs that relate to water quality management, land and water management, pest plants and animals management are examples. Relevant Victorian legislation to assist in the regulation of these activities include the Water Act 1987, the Catchment and Land Protection Act 1986, the Planning and Environment Act 1987 and the Flora and Fauna Guarantee Act 1988.

At a regional level, planning bodies such as Catchment Management Authorities undertake catchment planning. All Catchment Management Authorities have vested responsibilities under Victorian legislation, including waterway management, floodplain management, water quality management and land and water management. Sub-regionally, action plans such as the Loddon Murray Strategy are underway and finally there are municipal planning schemes administered by Local Government agencies\(^\text{11}\). This is described more completely later in this chapter.

\(^{11}\) In Australia, in rural areas, Local Government is usually administered by the local Shire Council, for example, the Shire of Loddon. Larger urban areas have City Councils, for example, the City of Melbourne.
Table 2  Planning Activities of Each Level of Government in Australia (after Report of Inquiry into Catchment Planning, Australia 2000 p. 74).

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Commonwealth Government</th>
<th>State Government</th>
<th>Regional Catchment Management Authorities</th>
<th>Local Government</th>
<th>Individuals/ Corporation s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adherence to international/ national conventions</td>
<td>■■</td>
<td>■■</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Leadership and catalysing change</td>
<td>■■</td>
<td>■■</td>
<td>■■■</td>
<td>■■■</td>
<td>■</td>
</tr>
<tr>
<td>Administer land and water regulation and legislation</td>
<td>■</td>
<td>■■</td>
<td>■</td>
<td>■■</td>
<td>■</td>
</tr>
<tr>
<td>Undertake regional and local planning</td>
<td>■</td>
<td>■■</td>
<td>■■■</td>
<td>■■■</td>
<td>■</td>
</tr>
<tr>
<td>Support for research and development</td>
<td>■■</td>
<td>■■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Development of national natural resource management policy</td>
<td>■■</td>
<td>■■</td>
<td>■</td>
<td>■■</td>
<td>■</td>
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<tr>
<td>Natural Resource Management extension and community capacity building</td>
<td>■</td>
<td>■■</td>
<td>■■</td>
<td>■■</td>
<td>■</td>
</tr>
<tr>
<td>On-ground management (except for public land)</td>
<td>■</td>
<td>■■</td>
<td>■■</td>
<td>■■</td>
<td>■</td>
</tr>
<tr>
<td>On-ground management of crown lands</td>
<td>■■■■</td>
<td>■■</td>
<td>■■■</td>
<td>■■■■</td>
<td>■</td>
</tr>
</tbody>
</table>

**Key to Table Two – Levels of Responsibility**

Levels of responsibility

- Not relevant
- Low
- Medium
- High
In 2003, the New South Wales State Government also adopted the Catchment Management Authority model with the passing of the Catchment Management Authorities Act 2003 and then established Catchment Management Authorities as statutory authorities in the autumn of 2004 (DIPNRNSW 2003). The Department of Infrastructure, Planning and Natural Resources, New South Wales, oversaw the replacement of the existing Catchment Management Boards that had no statutory authority.

In April 2004, the South Australian State Government passed the Natural Resources Management Bill 2004 that recommends the establishment of eight Natural Resource Management Boards that are managed by the Department of Water, Land and Biodiversity Conservation, South Australia. These Boards have statutory responsibilities (DWLBCSA 2003).

There are fifteen regional natural resource management bodies in the State of Queensland. In a process overseen by the Department of Natural Resources, Mines and Energy, Queensland, these groups have been identified in an bilateral agreement with the Commonwealth Government for funding purposes as part of the requirements of the National Action Plan for Salinity and Water Quality program and the Natural Heritage Trust program (NRM and EQ 2003).

Most States in Australia were reviewing their natural resources management structures through 2003. The above changes were a result of these reviews and by and large, the model that had been established in Victoria was followed. It is no accident that Catchment Management Authorities were established in New South Wales. The senior manager who established them in Victoria during the late 1990’s transferred to the New South Wales Government in 2003 and played a major role in their introduction in that State. A major driver was
the requirement by the National Action Plan for Salinity and Water Quality program to develop bilateral agreements with regional natural resources management bodies rather than directly with State Government natural resources management agencies (AFFA 2000b)

Table 3 outlines the groups that are involved in catchment planning in Australia in 2004. Some examples of catchment planning strategies have also been included. All of these groups have a role in catchment planning and many of these roles have overlaps that are often not well understood.

Table 3. Groups involved in Catchment Planning in Australia.

<table>
<thead>
<tr>
<th>Level of Government</th>
<th>Responsible Authority</th>
<th>Group and Plan or Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Department of Agriculture Food and Fisheries, Department of Environment and Heritage</td>
<td>National Action Plan for Salinity and Water Quality, Second Generation Natural Heritage Trust</td>
</tr>
<tr>
<td>Victoria</td>
<td>Department of Sustainability and Environment</td>
<td>Native Vegetation Management Framework, Nutrient Management Strategy</td>
</tr>
<tr>
<td>Regional</td>
<td>Catchment Management Authority, Rural Water Authority</td>
<td>Regional Catchment Strategy and others</td>
</tr>
<tr>
<td>Sub-regional</td>
<td>Catchment Management Authority - Implementation Committees, Department of Primary Industries, Department of Sustainability and Environment</td>
<td>Land and Water Management Strategy, Second Generation Salinity Management Plan Management Plans, Landcare Action Plans</td>
</tr>
<tr>
<td>Local</td>
<td>Local Government (Shire of Loddon, Shire of Gannawarra, Shire of Campaspe, Rural City of Swan Hill)</td>
<td>Local Government Planning Scheme</td>
</tr>
</tbody>
</table>
3.1 Catchment Planning – Commonwealth Government level

As already stated, the Commonwealth Government implements its policy through two major natural resources management programs - the National Action Program for Salinity and Water Quality (AFFA 2000b) known as the National Action Plan or NAP and the various programs under the Natural Heritage Trust such as Murray-Darling 2001 and the Bushcare\(^\text{12}\) Program. The projects tend to be regional in scale. The National Action Plan has a framework to link or integrate with the plans that exist at the state and regional levels. The major features of the plans are the following requirements:

- All parties to the partnership must sign bilateral agreements between the Commonwealth and State Governments.
- Each Catchment Management Authority was asked to develop an Interim Implementation Agreement by the end of July 2001.
- Each catchment was asked to develop a Regional Catchment Strategy or Integrated Catchment Plan - accredited by both the State and the Commonwealth Government.

The second generation of the Commonwealth Government’s Natural Heritage Trust has the same mechanisms in place.

Cross-state planning such as the Murray Darling Basin Commission’s Draft Basin Salinity Management Strategy 2001-2015 (MDBC 2000a) and Draft Integrated Catchment

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\(^{12}\) Bushcare is a Commonwealth program that aims to restore native vegetation across Australia through a network of coordinators and an incentives system. It is Commonwealth funded and matched locally dollar for dollar.
Management in the Murray-Darling Basin 2001-2010, Delivering a Sustainable Future, (MDBC 2000b) or the Lake Eyre Basin Strategy (LEBC November 1999) involves several States coming together to produce basin-scale plans. The Murray Darling Basin Council includes State Government Ministers and senior government representatives from the Australian Capital Territory and the States of New South Wales, Queensland, South Australia and Victoria. The Murray Darling Basin Commission is funded from these States and Territories. The community input comes from the Murray Darling Basin Community Advisory Council.

The Lake Eyre Basin Coordinating Group is made up of community representatives from New South Wales, Queensland South Australia and the Northern Territory produced the Lake Eyre Strategy. In this case, the coordinating group developed their strategy with assistance from state government agencies. The development of the Lake Eyre Basin Strategy (LEBC November 1999) was developed with assistance from the Commonwealth Government through the Natural Heritage Trust.

Although the Murray Darling Basin Strategy and the Lake Eyre Basin Strategy cross Australian State borders, most of the catchment planning occurs independently, within States.

The Inquiry into Catchment Management, the National Action Plan released by Prime Minister John Howard on October 21, 2000 (Howard 2000) and the associated document released later reflects a change in direction in the way the Commonwealth government funds rural programs. (AFFA 2000b). This enquiry recommended that funding from the Commonwealth Government is directed to regional bodies rather than being channelled through the governments of the various states and territories.
3.2 Catchment Planning - Victorian Government

In 2000, the Commonwealth Government launched an inquiry into catchment planning and released a report entitled ‘Coordinating Catchment Management - Inquiry into Catchment Management’ (AFFA 2000a).

The former Victorian Department of Natural Resources and Environment made the following points:

➢ The Department of Natural Resources and Environment was responsible for catchment management in Victoria where it is defined as ‘Integrated Catchment Management’ (ICM).

➢ The principal ICM legislation in Victoria is the Catchment and Land Protection Act 1994. The Victorian Catchment Management Council, nine regional Catchment Management Authorities (CMA) and a Melbourne metropolitan Catchment and Land Protection Board (CALP) have been created under this Act.

➢ Regional Catchment Strategies (RCS) have been developed for most of the state. These are recognised as the over-arching strategy for the development, management and conservation of land and water resources in each region.

This inquiry recommended a regionalised approach to catchment planning in Australia - using the Catchment Management Authority or Catchment Management Board Model (Australia 2000a). This is why South Australia, Queensland and New South Wales eventually established regional catchment management bodies.
3.3 Catchment Planning - Regional Management Agencies

Ewing et al. (2000) point out that in the State of Victoria, integrated catchment management underpins the statutory framework for land, water and vegetation management. In Victoria, catchment planning is undertaken through partnerships involving government agencies, rural water authorities and the Catchment Management Authorities and non-government organisations such as the Victorian Farmers Federation and other industry-based organisations. This forum is the Victorian Catchment Management Council.

In 1998, the Victorian Government established nine Catchment Management Authorities (CMA’s) across the State. These are shown in Figure 4.

Figure 4. CMA Boundaries in Victoria, Australia
The Catchment Management Authorities are the end point of a long evolution. The principal Victorian Government legislation applying to catchment planning in Victoria is the *Catchment and Land Protection Act 1994*. This legislation established local advisory boards to advise government on catchment planning issues. Prior to this legislation, Land Protection Advisory Boards existed at a local level with the Land Protection Regional Advisory Council to providing advice on catchment planning at a regional level.

The North Central Catchment Management Authority (NCCMA) has responsibility over an area that includes the Loddon Murray area. In June 1997, the North Central Catchment Management Authority launched the North Central Regional Catchment Strategy (NCCALPB(VIC) 1997). The strategy amalgamated eight local land and water plans that had been developed by local land and water groups over the preceding ten years.

This strategy identified six major programs (NCCMA 1999 p. 46)

- Salinity Program
- Biodiversity Program
- Waterways and Water Resources Program
- Soil Health Program
- Pest Plant and Animal Program
- Regional Development Program

In December 2003, the North Central Catchment Management Authority revised its Regional Catchment Strategy, as it is required that all CMA’s review their strategy every five years under the *Catchment and Land Protection Act 1994*. The development of that strategy is discussed in Chapter 4.
In the Regional Catchment Strategy that the North Central Catchment Management Authority launched in 2004, there was a change in the way natural resources management was to be conducted with the adoption of an assets-based approach.

Figure 5 shows the plots of asset-value against service-value per dollar for 32 projects that were underway. Projects in the top right hand corner of the diagram represent high asset value and low cost projects.

![Asset-Service Assessment Diagram](image)

**Figure 5. Asset-Service Assessment (DSEV 2003a p. 22)**

The graph in Figure 5 is useful to capture the nature of an assets-based approach. Moving up the y-axis increases the value of an asset and a movement along the x-axis increases the amount of services achieved per dollar spent (DSEV 2003a p. 22). A project that appears in the top right corner would have a higher priority because of its higher value and the services it provides. In terms of planning, there is now a strong linkage between ecosystem services and maintenance or improvement on the land and investment. The role of investors and agency
partners in this structure is quite well defined. The role of the catchment community in the development of the Regional Catchment Strategy was not as well defined.

Returning to the three points made by Gregory (2001, p. 37), the development of the North Central Regional Catchment Investment Plan has addressed the need to have a strategy that will be a good investment and has scientific rigour. This may be at the expense of community ownership and involvement. I actively participated in the development of the Loddon Murray component and its integration into the North Central Regional Catchment Investment Plan. I was present at a meeting where consultants developing the North Central Regional Catchment Strategy were requested to identify local communities as an asset by the people in the room.

Until that point, those consultants saw the community as an asset service. In my view, this perception may have also been the result of inadequate community engagement. The group eventually endorsed my belief that the asset-service model outlined above does not sufficiently address the importance of community involvement.

The only community people involved in the Regional Catchment Investment Plan were the Authority’s Board members. There was no involvement from community members of the Catchment Management Authority’s five implementation committees (there were no implementation committees meeting in the North Central Catchment Management between June 2003 and May 2004) or its Landcare network members. It can be argued that the community was involved in the Regional Catchment Strategy, as Board Members were involved. People from the community submit a nomination for a Board position and Government endorses their nomination.
The election of representatives to this type of position is always a point of contention and has its pros and cons. From a personal point of view, I believe that members from the implementation committees should have been involved at some level. My observation was that the process was more about the aggressive negotiation of agency staff for their program rather than a catchment wide program.

Catchment planning occurs at four main levels. To this point, discussion has mainly concentrated on national, state and regional processes. My involvement was with the production of a sub-regional strategy in the Loddon Murray region. This strategy is discussed at length in Chapter 4.

3.4 Catchment Planning - Sub-catchment Level

In 2002, the four plans in the irrigation area in the north of the North Central catchment were reviewed and combined to produce the Loddon Murray Strategy. This strategy has five major themes:

- Biodiversity Enhancement
- Land Management
- Planning and Development
- Social Capacity
- Water Management

The interesting point to note is that the 1997 North Central Regional Catchment Strategy contained no mention of programs in the area of social capacity. In 2002, this theme had gained far more importance on rural agendas. The need to improve social capacity is highlighted in the National Action Plan for Salinity and Water Quality (AFFA 2000b).

The Loddon Murray Strategy (Turner and Shanahan, 2002) also saw the need to increasingly engage Local Government in catchment planning. There were two areas where Local Government could be very effective in catchment
planning – using its legislative powers and its access to a wide range of local networks.

3.5 Catchment Planning – Local Government

There are several opportunities for public participation in the statutory planning by Local Government. Public comment is invited when Local Government planning schemes are developed or revised. The draft planning scheme is made available for public comment. The plan is a set of zone and overlay provisions that apply to particular areas and sets out what that land can and cannot be use for in terms of use. Usually, people tend to comment on the fine detail that may impact on their current or future land use plans.

The Shire of Gannawarra (1999) has the following purposes in its planning scheme:

To provide a clear and consistent framework within which decisions about the use and development of land can be made.

To express state, regional, local and community expectations for areas and land uses.

To provide for the implementation of State, regional and local policies affecting land use and development.

The first point relates to a consistent and equitable decision-making framework. The second point is important as it discusses the concept of community expectations at a State, regional and local level. The final point discusses the implementation of State, regional and local policy. Given that the planning scheme is a requirement under Section 4(1) of the Planning and Environment Act 1987, the Victorian Government has ultimate sign off for each Local Government planning scheme. From a pragmatic point of view, the only time there is a major change in planning schemes is at the time when they are reviewed. This occurs every five years.
Local Government planning schemes have been set up to manage development at a local level throughout Victoria. The Municipal Strategic Statement section was really the only opportunity that Local Governments had to manage unique local planning issues relevant to catchment planning. This type of planning is aimed at the management of new developments. Control over existing activities and land use is difficult – especially if it relates to traditional use of land – a concept known to be ‘as of right’.

In my Local Government area, the Shire of Gannawarra requires landholders establishing rice paddies to obtain a planning permit. Landholders wishing to establish dairy farms do not need a permit because it is deemed ‘as of right’. This is contentious in that the Local Government planning schemes are supposed to be looking after the environment. Rice paddies, new to this area, are seen as a potential contributor to groundwater and are subject to stringent control in an effort to minimise the contribution to an increase in the height of groundwater levels or leakage to the groundwater. Dairy farming is traditional to the area and not seen as a threat even though there is possibly the same potential leakage to groundwater because of over-irrigation although it would be over a longer period through the year.

The opportunity for public involvement in the planning permit process is through the appeal provisions. Under this process, government agencies have referral obligations under the Planning and Environment Act 1987. The interesting point is that people appeal against activities rather than processes. People can appeal against a new development and force amendments or withdrawal of the planning permit. The planning permit is issued by the Shire Council. The Council is made up of representatives that are elected by the residents in that Shire. If a Council issues a planning permit, there is a
further opportunity for participation in decision making in that there are further appeal provisions.

If a person (or group of people) is not satisfied with the issuing of a planning permit, the issue can be referred to the Victorian Civil and Administrative Tribunal. The major justification for an appeal to that tribunal is that the proposed use is not in accordance with the zoning of the area under the local municipal planning scheme (Eccles 1999). Whilst social and economic considerations can be grounds for appeal, they cannot be applied to a personal situation. If a new development places existing development at risk, it can be considered as grounds for appeal (Eccles 1999). The only source of appeal beyond the Victorian Civil and Administrative Tribunal is the Victorian Supreme Court and then only on the grounds of improper legal procedure, that is *how* the appeal was conducted that than *why* it was lodged in the first place.

The ability to appeal against the issuing of a planning permit for a new development is also present in the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. This also has legislative power in controlling proposed activities rather than existing processes within a catchment.

There are also provisions for referrals to other relevant Commonwealth and State Government agencies and individuals can appeal against a proposed action. As with the Local Government process, proposed actions are placed in newspapers, informing the community of activities that may impact on them or their environment. Unless there is a good opportunity for community participation when Local Government planning schemes are reviewed, opportunities for further involvement are quite limited and can be expensive for those involved. This is because the public can seek legal
advice and make personal presentations to the Victorian Civil and Administrative Tribunal.

Within the State of Victoria, Local Government planning schemes would be a logical way to ensure that good planning is taking place. This is because the Local Government Shires have legislative responsibility under the Planning and Environment Act 1987 and the Victorian State Planning Policy Framework and Shire staff work with people at a local level. In the Loddon Murray area, the Shire of Loddon (1999) and the Shire of Gannawarra (1999) have implemented their own planning schemes. These planning schemes are a requirement of the Planning and Environment Act 1987 and the Planning and Environment (Planning Schemes) Act 1996. The Victoria Government has also released its Victorian Planning Provisions (DOI(VIC) 1999) that oversee the development and structure of local planning schemes.

Eccles (1999) discusses two types of planning that have evolved within Local Government in Victoria - statutory planning and strategic planning. He talks about the two types of planning as being compartmentalised and institutionalised at local levels. The two forms of planning are now conducted in isolation from each other, rather than being integrated to allow for research, policy development and evaluation of how well the planning is being implemented. The major reason is that the statutory planning process in Victoria is closely controlled by the Victorian Department of Sustainability and Environment through the Victorian Planning Policy. Strategic planning is still undertaken by Local Government and the linkages with Government policy at a higher level is not as strong and there is a higher level of local control. This strategic planning sits alongside the statutory planning framework discussed above.
The role of Local Government in the catchment planning partnership has not been as strong but will need to change as a result of the National Action Plan (AFFA 2000b).

At the 2001 Murray Darling Association Salinity Summit, I participated in several forums where the linkages between Local Government, state government and Commonwealth government were seen as being poorly developed by speakers representing Local Government.

It was interesting that the forum on policy had two lines of debate:

- A resistance from the Murray Darling Association to the development of a fourth layer of government as the National Action Plan focussed on dealing with Regional Catchment Authorities or Boards.
- The desire to be recognised by the Commonwealth and state governments as a tier of government.

13 The general tone of the salinity summit was that Local Government had been largely left out of catchment planning to date and needs to be involved. Local Government is closest to the people who have to implement these plans – their rate-payers.

*If ratepayers saw their rates being spent on catchment planning, they would see the need to become involved in catchment planning to ensure the funds were used appropriately. (pers. comm. Planner, Shire of Gannawarra, 2003).*

There was some tentativeness due to the ongoing issue of resourcing and monitoring expressed by Local Government speakers. There was also the need for Local Government to
engage other catchment planning bodies - Catchment Management Authorities or Boards and State and Commonwealth government agencies.

3.6 The Review of Victorian Water Policy


As most of the primary production in northern Victoria is based on irrigated agriculture, the Green Paper and subsequent White Paper (DSEV 2004) on water reform were extremely important. Seventy-five percent of the water harvested in Victoria is used for irrigation (DSEV 2003c). One of the proposals was the ‘unbundling’ of water. This refers to the separation of water allocation from land title, known as a water right and the introduction of high and low security water. The initial water right would be converted to high security water and the low security water would be water that was previously known as ‘sales’.

The Victorian Government has been able to supply most irrigators with water right for ninety-seven years in one hundred. It had also been able to supply extra water that was surplus as sales up to seventy percent of the time. Irrigators had to pay for their water right every year – whether it was supplied or not. Sales water was paid for as it was used. Another feature of ‘unbundling’ was the introduction of a site-use licence and a formal capacity share of the delivery infrastructure. All of these features would have a capital cost component (DSEV 2003c). Whilst this will give the irrigation industry some flexibility, my concern with the White Paper is that this was driving change even before formally being adopted as Victorian Government Policy.
The following statement appears in large print in the document (DSEV 2003c p. 117):

*The Government is not interested in change for the sake of change with institutional reform. Institutional reform should be driven by the need to best meet the objectives and policies of Government, including those proposed in the Green Paper…*

This was reassuring to me as I had a concern that irrigators would be asked to accept this change and not have sufficient information. The Green Paper addressed all sectors of the water industry and put forward many changes in approach to long-term sustainable water management. There was a shortfall in that it does not describe how the community would be engaged. There is another statement in the document that is listed as a preferred outcome (DSEV 2003c p. 11):

*Communities that truly appreciate all the services water provides and are able to make considered choices about how those services are to be valued and delivered.*

This does not address how people will be given the information that is needed to make the ‘choice’ discussed in the outcome. Another point that needs to be made about the Green Paper is that another layer of catchment planning was also proposed. The concept of ‘sustainable water plans’ was put forward. The scope of these plans in the Green Paper was unclear, as was their alignment with the Regional Catchment Strategies that the Catchment Management Authorities completed in 2003-04 or the Loddon Murray Strategy that was completed in 2003. The question of scope was debated by the Northern Water Forum\(^{14}\) when it met with the Expert Advisory Task Force at a meeting I attended in March 2004.

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\(^{14}\) The Northern Water Forum is composed of the Chairs and CEO’s of the North Central, Goulburn Broken and North East Catchment Management Authorities, senior officers from Goulburn Murray Water Rural Water
In the White Paper (DSEV 2004), the Victorian Government indicated that it would develop Regional Sustainable Water Strategies across that State. Those regions are Gippsland, Northern Victoria, Wimmera and Glenelg, South West, and the Central Region including Melbourne – the capital city of Victoria. The scale of these plans is large and involves many people. The plan for the Melbourne area could potentially affect nearly three million people.

The topic of how these communities would be engaged also arose. My view of the consensus of the meeting was that the management of social issues was in the domain of Victorian Government Departments rather than Catchment Management Authorities or Rural Water Authorities. This is a somewhat different approach to that adopted by people in the Loddon Murray area who were keen to share the management of social issues. This issue is discussed in depth in Chapter 4.
3.7 Current Catchment Planning Arrangements in Victoria, 2003

Until late 2002, the NCCMA had established the following organisational structure to continue catchment planning (see my interpretation in Figure 7). The organisation chart shows that the four existing land and water management plans reported through the Loddon Murray Forum, the Loddon Implementation Committee and then the CMA Board. Previously these groups had direct access to Government.

![Organisational Chart](image)

**Figure 7. North Central Catchment Management Authority Organisational Structure prior to 2004 (developed by writer)**
Originally, the Catchment Management Authorities were given statutory responsibility in the areas in the following areas:

- Management of rivers and waterways, including beds and banks
- Water quality management
- Floodplain management

Since 1999, the Commonwealth Government has funded the CMA's to employ people to facilitate the Bushcare program, the Natural Heritage Trust program and the Landcare program. Since 1996, the NCCMA has developed the strategies outlined in Table 4.

Table 4. Strategies Developed by North Central Catchment Management Authority 1996-2003

<table>
<thead>
<tr>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The North Central Regional Catchment Strategy 1997 (NCCALPB(VIC) 1997)</td>
</tr>
<tr>
<td>Draft Native Vegetation Management Framework for the North Central Catchment completed in 2002</td>
</tr>
<tr>
<td>Draft Nutrient Management Strategy for the Loddon Catchment completed in 1996 and reviewed in 2002</td>
</tr>
<tr>
<td>Loddon Flood Study 2001</td>
</tr>
<tr>
<td>Loddon Surface Water Management Strategy 1999 (Sinclair-Knight-Merz 1999)</td>
</tr>
<tr>
<td>North Central Regional Catchment Strategy 2003</td>
</tr>
<tr>
<td>Loddon Murray Strategy 2002</td>
</tr>
<tr>
<td>North Central Dryland Salinity Management Plan 2002</td>
</tr>
</tbody>
</table>
The following Whole of Catchment Plans were produced to provide linkages between the Regional Catchment Strategy and existing salinity or land and water management plans. Given the establishment of the Loddon, Campaspe and Avoca (included the Avon-Richardson Group) Implementation Committees, the North Central CMA Board produced the whole of catchment plans listed in Table 5.

Table 5 Whole of Catchment Plans in the North Central Catchment

<table>
<thead>
<tr>
<th>Plan Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Loddon Whole of Catchment Plan 2000</td>
</tr>
<tr>
<td>The Campaspe Whole of Catchment Plan 2000</td>
</tr>
<tr>
<td>The Avoca Whole of Catchment Plan 2000</td>
</tr>
<tr>
<td>The Avon-Richardson Whole of Catchment Plan 2002</td>
</tr>
</tbody>
</table>

These plans are all strategic in nature and represent planning at a whole of catchment scale. This structure also meant that the four salinity or land and water management plans were now seen by the North Central CMA Board as action groups, rather than implementation committees, with less responsibility than they previously had before the formation of the North Central CMA.

An ongoing issue is that of compliance. Various groups continue to develop and implement strategies and yet it is difficult to achieve good adoption of some of activities associated with these strategies. Whilst an activity may have been seen as beneficial to good land or water management, its adoption is harder to achieve. Land managers may be loathe to adopt activities if they cannot see any benefit in changing the way they do things - no matter how good it may be at perhaps a landscape scale, for example, the construction of irrigation reuse systems to recycle water and nutrients.

In the North Central Catchment, the major partners in catchment planning are the North Central Catchment
Management Authority, the Department of Primary Industries, the Department of Sustainability and Environment (Victorian Government Departments), Goulburn-Murray Water (a rural water authority managing irrigation water delivery systems under a service contract with the Victorian government), Local Government, and the community.

In Victoria, the Department of Sustainability and Environment has the lead role in catchment planning, working in partnership with the Catchment Management Authorities and other agencies at the State level. The Department of Environment and Heritage and the Department of Agriculture Food and Fisheries Australia provide direction at a Commonwealth level and fund the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality programs. The Department of Primary Industries, rural water authorities, Local Government (for example, the Shire of Gannawarra, the Shire of Loddon or the Rural City of Swan Hill) and local communities deliver catchment planning programs at a local level.

Catchment planning relies on the goodwill of all participants for its success. When people do not comply with expectations, legislation is seen by people enforcing it as not effective enough and not readily used for compliance for a range of land and water issues. This highlights the need to work around the sole use of regulatory or legislative frameworks by working more with community.

**Issue 4**

An ongoing issue is being unable to achieve compliance with catchment management programs.
The Loddon Murray Surface Water Management Group consists of representatives from agencies and community. It is charged with developing an integrated drainage program that maximises both water utilisation and ensures the ongoing health of natural features. The Loddon Murray Surface Water Management Strategy (Sinclair-Knight-Merz 1999) outlines at length difficulties in dealing with landholders that do not manage their drainage water responsibly - those irrigators that cause damage to wetlands when they dump excess irrigation water into them. This erodes downstream landholder confidence in the program as these people are seen as not being appropriately dealt with by institutions after extension and education has failed. This group developing the strategy has explored many options to develop a tailwater management strategy. The best way appears to be to better inform landholders about the detrimental effects of irrigation tailwater as a first option and resort to legal avenues if that effort fails. This is locally known as ‘using the big stick’, using regulatory activity when other community engagement activities fail to achieve an outcome.

3.8 Issues with Current Institutional Frameworks

One of the most perplexing things about trying to implement catchment planning is the issue of disjointed funding. In 2003, the funding of land and water action plans was based on the completion of the process outlined in Figure 8.

The task is more complex at the local or action plan as funds are spread over complex implementation and research projects that involve the engagement of staff and community in the implementation of projects.

This model was developed between the group managing funding for the National Action Plan for Salinity and Water
Quality program and the Catchment and Water Services Divisions of the Victorian Department of Sustainability and Environment. Both groups were contributing funding to the regional management plans. Unfortunately, whilst a lot of time was spent developing this process, the question of funding was not so well explored.

Figure 8. Regional Catchment Planning Process 2002-2003

The expectation from the regional agency staff was that budgets would be developed at a regional level once the regional management plan was signed off. The Commonwealth National Action Plan for Salinity and Water Quality budget was managed in this way. The state funding body, Department of Sustainability and Environment, was
advised of major budget cuts by the Victorian Department of Treasury and Finance before Regional Catchment Investment Plans were finalised. Budgets were being reduced by a Department outside the regional process before this process had been allowed to run to completion. Communication within Government clearly had not happened.

The question is immediately asked – why undertake this planning if Government is not going to service its part of the agreement. I have been hearing this question from community working groups since my first exposure to land and water management in 1995. To answer it, one needs to attempt to work out what are the drivers are behind Government policy.

When the Prime Minister announced the National Action Plan for Salinity and Water Quality in May 2000, the States were expected to match the Commonwealth Government contribution. For every dollar that is given to regional communities by the Commonwealth National Action Plan for Salinity and Water Quality (AFFA 2000b)program, fifty cents of it is contributed by the relevant state – in this case, Victoria. In 2001, the Prime Minister announced the second round of the Natural Heritage Trust. Under this program, the state’s cost share is also fifty percent. The difference is that the state has control of its contribution. In the first round of the Natural Heritage Trust regional bodies used to match the state allocation to land management activities with Natural Heritage Trust funding on a dollar per dollar basis. Depending where you sit, there appears to have been a cost shift. At first impression, the cost shift is from the state government to the Commonwealth government. In fact, it is the other way round in the long term.

**Issue 5**
Funding is disjointed and not timely enough.
Under the National Action Plan for Salinity and Water Quality program, the states have lost this control. This program deals directly with regionally based catchment management authorities. It is possible that the states could even be contributing to projects that are contrary to their policy. The concept of government policy and its integration into catchment planning is not always transparent – especially when people believe that they are implementing catchment planning on the ground. Whilst the difficulty of government trying to keep catchment planning in line with its policy has already been discussed in the national context, there is also a problem at the local level.

During the 2004-05 development of the Regional Catchment Investment Plans, regional bodies were asked to produce projects with three year timeframes and a strong commitment to fund them for the life of the project. This goes some way to address the issue of disjointed funding. Unfortunately, some Catchment Management Authorities, including North Central, still adopted an annual review, stating that this was better project management.

In Figure Nine, I have attempted to lay out graphically the way catchment planning is delivered in Australia, especially in Victoria. The separate funding sources (Commonwealth and State) and the importance of regional bodies in the allocation of resources is quite obvious.
The arrow represents the amount of resources that is required to develop the plans at each level.

Figure 9: My Perceived Existing Catchment Planning Frameworks in Australia
Through the 1990’s, government departments went through a stage of reinvention. Cavaye (2000) puts forward a cycle beginning with excellence in delivering clients’ needs, rationalisation, finally ending up with a strong focus on service delivery and ‘customer’ needs. Delivering what the clients perceive they need is only part of government’s role. Cavaye further points out that service delivery is only half of the clients’ requirements of government. There is a need to restimulate rethinking, using social networks and leadership to build the ability of communities to manage change – social capacity building. Whilst there may be a need for government to encourage community capacity building, policy will still be a key driver for catchment planning.

Figure 9 attempts to describe how the current Department of Sustainability and Environment (Department of Natural Resources and Environment in the diagram) aligns the activities that it funds with the policy of the Victorian Government. The point needs to be made that governments are very keen to align the outcomes of any natural resources management or catchment planning with government policy. To return to Cavaye’s point, any catchment planning framework must recognise the importance of government policy as an important driver for government investment. The diagram shows policy coming from Commonwealth, State and regional government. If the implementation of policy is not proceeding to the satisfaction of government, government has used several strategies put things back on line. One way was to withdraw funding from those activities that are not seen as aligning with policy.

The major policy of the Victorian Government entitled Growing Victoria Together (DPCV 2001) was released in 2001 after the Victorian Labor Party was returned to Government
with a record majority in both houses. In recent times, the Victorian Government has used key government initiatives to ensure its policies are implemented. By establishing new funding initiatives, the Victorian Government can step outside traditional frameworks to implement a change in policy. Water policy in Victoria is a good example with the release of the two papers on water policy reform.

3.9 Conclusion

The importance of community involvement in good catchment planning was discussed in detail in Chapter 2. The need for effective leadership with appropriate community involvement was highlighted. There was also a need to have these roles and structures underpinned with good institutional frameworks at National, State, Regional and Local levels was outlined in this Chapter.

I believe all of the above items were found to be in place in Australia in 2004. The next Chapter outlines research into whether the community feels that catchment planning and its associated institutional frameworks are actually ‘working’.
Chapter 4: Methods

4.1 Introduction

Chapter 3 outlines the catchment planning and associated institutional and legislative frameworks that were in place in 2004. These frameworks are discussed in depth at a Commonwealth, State, Regional and Local level. All of these frameworks are driven by Government. It is not clear that these frameworks have good support and a reasonable level of understanding from local communities. I have undertaken some research to answer the questions listed below.

In this chapter, the research methodology used to find information and the justification for the approach that was used is outlined. As discussed in Chapter 1, the aim of this research is to develop a catchment planning framework that has appropriate levels of community participation.

This will be achieved by exploring the following questions:

- **How well do current catchment planning processes perform and do they involve communities appropriately?**

- **Do catchment planning agencies believe they involve the community in their catchment planning at an appropriate level?**

- **What changes might be needed to ensure good catchment planning with good participative planning?**

To be able to assess the involvement of the community in catchment planning, some research was required. What were the views of the community in relation to catchment planning? Were there any areas that were of special significance and were there some different ideas about how catchment planning could be implemented?
4.2 Research Approach

Two approaches were used to address the research questions. The first was to use social research within the Loddon Murray\textsuperscript{15} (see Figure 10) community to establish how well current catchment planning is working and the level of community participation and two case studies. The social research was accomplished by asking the leaders undertaking catchment planning and members of the public for their thoughts on this point.

Secondly, two case studies have also been used. Firstly, the Loddon Murray Land and Water Management Strategy (Loddon Murray Land Strategy) was developed between over the twelve months prior to November 2002. This strategy is an Action Plan under the North Central Regional Catchment Strategy that was completed in November 2003. The latter document is used as it is the link between the Loddon Murray Strategy and catchment planning at State and Commonwealth levels of Government. The North Central Regional Catchment Strategy is the second case study but is examined in far less detail.

The development of the second case study is included to allow comparison in the way the community was engaged in its development with that of the Loddon Murray Strategy.

4.3 The Role of the Researcher

I have been heavily exposed to catchment planning since 1979. My involvement ranges from detailed comment on the development of Shire or Local Government planning schemes (Gannawarra 1999, Loddon 1999) to comments on referrals for Local Government planning permits for new infrastructure or large-scale agricultural developments.

\textsuperscript{15} The Loddon Murray area is the floodplain at the north end of the North Central Catchment.
I have been involved in the development and submission of successful funding bids under Victoria’s Salinity Program and the Bushcare\(^{16}\) and Murray Darling 2001 components of the Australian Commonwealth program known as the Natural Heritage Trust. I have participated in Technical Assessment Panels on behalf of the North Central Catchment Authority to examine the technical rigour of funding applications submitted by a range of community and agency groups since 1996.

My previous job role was as Leader - Environment Team with the former Department of Natural Resources and Environment\(^{17}\). The Environment Team was charged with the implementation and facilitation of the environment program of local land and water management plans as part of the Loddon Murray Strategy.

Because of my close association with catchment planning, there is a high risk of personal opinion biasing my outlook on the effectiveness of existing catchment planning. The best way to overcome this bias was to go back to the community and seek its current views on catchment planning to ground-truth any views on catchment planning that I may have.

In April 2003, I moved to the role of Leader – Social Capacity within the Victorian Department of Primary Industries. The community groups that assisted with the development of the Loddon Murray Strategy identified social capacity as extremely important. During the first year of the National Action Plan for Salinity and Water Quality program, the Social Capacity Project received funding under the Loddon Murray Strategy. The project was charged with implementing a

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\(^{16}\) Bushcare is a program under the Commonwealth Natural Heritage Trust and focuses on the protection and regeneration of native habitat.

\(^{17}\) To reiterate, the Department of Natural Resources and Environment was split in 2002 into the Department of Sustainability and Environment and the Department of Primary Industries.
community engagement strategy, an education program in local schools, continuing our community leadership program and developing a community capacity strategy. In January 2004, I was promoted to the position of Program Manager – Sustainable Irrigated Landscapes, North Central within Department of Primary Industries of Victoria.

Over the last ten years, I have observed people actively participating in catchment planning. In 1995, there were four land and water management groups in the Loddon Murray area involving perhaps sixty people in catchment planning and countless more people in its implementation. In the North Central Catchment, there were a total of nine groups planning in a similar way. By 2003, this number had reduced from nine to four and the degree and style of participation had changed. All four of these plans were in the Loddon Murray region and most of the people involved with these groups were also involved in the development of the Loddon Murray Strategy. This is discussed at length in Chapters 4 and 5.

The importance of community engagement, participation and collaboration to the long term success of catchment planning can be demonstrated around the world. My view is that current catchment planning processes in Victoria do not involve adequate community participation. I was keen to research whether this is actually the case and if so, if it can be rectified. Community capacity building could be a way to ensure this happens.

Whilst my research was underway, I was jointly responsible for the development of the Loddon Murray Strategy. Between November 2001 and September 2002, I was part of a project management team of two people that was given the task to update and combine four existing salinity or

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18 A definition of community capacity is to provide the community with the
land and water management plans into a single local land and water management strategy. The result was the Loddon Land and Water Management Strategy (LMF 2002). The work involved reviewing the four existing land and water management plans, determining any gaps of knowledge or information and then working with the community to produce a new overall strategy.

During December 2002, the then Victorian Department of Natural Resources and Environment was broken up into three Departments, the Department of Primary Industries, the Department of Sustainability and Environment and the Department of Victorian Communities.

In the Loddon Murray region, the Department of Primary Industries and the Goulburn-Murray Water Rural Water Authority\textsuperscript{19} facilitate most of the land and water management activities on behalf of the local salinity or land and water management plans and the North Cemta Catchment Management Authority.

There were strong synergies between the development of the Loddon Murray Strategy and the methodology being used for my doctoral research. The work undertaken as part of my research served to inform my work on the Loddon Murray Strategy in the early part of the strategy and vice versa as the strategy moved from development through community consultation and eventually to implementation. The production of the strategy is discussed in detail in Chapter Five - Results and Discussion.

\textsuperscript{19} Goulburn-Murray Water is a rural water authority and has its major role as the distribution of irrigation water to landholders in the northern Victoria.
4.4. Study Site

The study area is known as the Loddon Murray area and is in northern Victoria, Australia between the Avoca and Campaspe Rivers. The boundary area extends from Torrumbarry to the east down to south of Pyramid Hill, then west to the township of Boort and fianly swings in an arc to the north-west of the Rural City of Swan Hill. The Murray River is the northern border of the area.

There are four Local Government areas within the study site. These are the eastern part of the Rural City of Swan Hill, the Shire of Gannawarra centred at Kerang and Cohuna, the
western part of the Shire of Campaspe centred at Echuca and the northern half of the Shire of Loddon. The Shire of Loddon includes the townships of Pyramid Hill and Boort and adjacent areas to the south.

The areas and major land use activities for the four Shires are listed in Table Six. The people in this area have been involved in catchment planning since 1988 and should have a good insight into how and why it should be done. The Shire of Gannawarra was chosen for the major part of my research because I had access to demographic data and its electoral roll.

Table 6. Total Area and Principal Land Use of Shires (Local Government Areas).

<table>
<thead>
<tr>
<th>Name</th>
<th>Area(km²)</th>
<th>Land use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shire of Campaspe</td>
<td>4,525</td>
<td>Dairying, cropping, tomatoes, tourism, viticulture, rice</td>
</tr>
<tr>
<td>Shire of Gannawarra</td>
<td>3,737</td>
<td>Dairying, cropping, tomatoes, pigs, rice</td>
</tr>
<tr>
<td>Shire of Loddon</td>
<td>6,700</td>
<td>Dairying, cropping, tomatoes, viticulture, pigs</td>
</tr>
<tr>
<td>Rural City of Swan Hill</td>
<td>67,700</td>
<td>Dairying, cropping, tomatoes, tourism, viticulture, horticulture (stone fruits)</td>
</tr>
</tbody>
</table>

Source: Home pages of listed Shires

Because only parts of the Shire of Loddon and Campaspe and the Rural City of Swan Hill are covered by the Loddon Murray Land and Water Management Strategy (Loddon Murray Strategy), it is difficult to determine their population using Australian Bureau of Statistics data. The population of the Shire of Gannawarra was just over 10,100 according to its 2002 electoral roll.

Given that most of the area is located on the alluvial plain of the Murray River, there are no major variations in topography. Most of the change in elevation is due to wind action blowing soil from the west to form sand dunes and
lunettes. The sand dunes and lunettes are free draining and were utilised to establish diary farms and horticultural enterprises many years ago.

There is some demographic variation associated with these enterprises and localities. Many of the people engaged in horticulture in the Swan Hill area are of European descent. People emigrated from southern Europe to work on the Snowy Scheme in the late 1950’s and settled in this area at the completion of that project. Most of the people in the Shire of Gannawarra are descended from people from the British Isles. Much of the land has been owned by the same family for several generations. Names that appear on the early Parish Plans still appear today.

4.5 Research Approach

Various catchment planning frameworks within and external to Australia were examined as part of literature research and are discussed in Chapters Two and Three.

To be able to undertake an evaluation of current catchment planning processes, I needed to know how well existing processes were working. There are many catchment planning processes underway in the Loddon Murray area. There are various levels of land and water management planning as well as the planning undertaken by Local Government – its strategic business planning and its land use or statutory planning functions.

This information was needed to test my ideas about catchment planning. A second part of my research was to interview people who have been involved in catchment planning over a long period at a professional level in a range of organisations.

Whilst this research was underway, joint project manager for the Loddon Murray Land and Water Management Strategy. A review of the development of this strategy was undertaken.
as part of my project. Rather than review the whole strategy, I have focussed on the methods that were used to engage the community in the development and implementation of the strategy and ensure the long term ownership and involvement of the Loddon Murray community.

In examining social research literature (de Vaus 1990, Neuman 2000), I decided that the best way to conduct the research component of this project was to use the 'grounded theory' approach (Punch 1998). This approach uses the data obtained from various sampling techniques to develop a theory rather than putting forward a hypothesis and using sampling techniques to prove or disprove the hypothesis as might occur in an experiment.

4.5.1 Grounded theory

The need to remove any bias or preconception that I may have is outlined earlier in this Chapter. I have been involved in catchment planning since 1979 and obviously have some personal views and perhaps some biases that I am not aware of that could impact on my findings. A good way to reduce bias and the influence of personal opinions was to use the grounded theory approach.

Punch (1998 p. 162) defines grounded theory as a research technique that uses the data to generate a theory. Rather than run an experiment where a hypothesis is put forward and the data are then gathered to prove or disprove that hypothesis, grounded theory is using the data or information gained to generate theories. It could be proposed that a high level of experience with catchment planning would result in actions based on plain common sense and there would not be room for much error.

Neuman (2000) points out that the possession of common sense or personal experience can have some drawbacks. Neuman discusses four errors that can occur with
relying on personal experience - overgeneralisation, selective observation, premature closure and the halo effect. In summary, people can use personal experience to promote what they think is good, condemn the things that they perceive to be not quite as good and generally not question things to the degree that is usually required by scientific inquiry. This is the type of bias that was of concern to me in this study.

The main way to manage this bias was to use a technique that removed my input into the early development of a theory. Using the grounded theory technique meant that any findings are driven by the evidence that exists in the data, not from my insights or biases. Three different research methods were used to enable the process of triangulation to further ground truth the data. The three research methods were the use of workshops, the community survey and semi-structured interviews. Punch (1998) and Livesey (2004) list triangulation as one way to combine and validate qualitative and quantitative research.

4.6 Review of Available Methods

There are a number of research techniques that can be used when attempting to learn the views of people on various matters. The methods that are used are dependent on the outcomes being sought and the resources available to the researcher in terms of skills, time and money. Additionally, do the people in the sample have the ability and knowledge to be able to respond appropriately to the questions being put forward?

My approach was to evaluate existing catchment planning processes and perhaps suggest improvements or different approaches if they were felt to be desirable. I elected to use grounded theory to generate questions and answers.

There are a range of survey techniques that can be used to establish the views held by a given set of people or
community. These can include telephone surveys, household surveys, mailing out questionnaires, workshops, study groups, moderated forums, citizens’ juries and public meetings. The limiting factor is the resources that are available to develop and conduct these activities and then to subsequently process or the data or information that is generated.

4.6.1 Qualitative or Quantitative?

In the social sciences, there are two extremes of social research on a continuum - quantitative and qualitative research. In simple terms, quantitative research involves the use of numerical data; qualitative research involves the use of words. Punch (1998) states that quantitative data are numerical, expressing information about the world in the form of numbers and that qualitative data can be defined as empirical data about the world.

As the world does not occur as numbers, quantitative data are about the expression of human thoughts or responses as numbers. Qualitative data allow the researcher to gain a direct insight into how the respondent is thinking or reacting to a question or comment.

Punch (1998 p. 244-245) points out that there are six considerations to be kept in mind when deciding on whether to use quantitative or qualitative analysis.

- What are we trying to find out?
- Do we want standardised comparisons or do we want detailed information about the people involved?
- Is the literature available to support this work and how much does it align with this work?
- Are there adequate resources to do the job - funding, access to people, availability of data?
- Will we learn more using one method over the other?
The final consideration is about style - what has a good feel about it.

Additionally, I was keen to establish the views or perceptions of others in relation to catchment planning. By adopting the grounded theory approach, I have removed the temptation to put forward my hypothesis and then test it as occurs in a conventional scientific approach. Once a methodology was established, the next step was to develop a body of data. These data would be used to develop a theory or framework related to catchment planning. The next question that arose related to the type of data that I would use. Qualitative data consider diversity and ranges of opinions that can be difficult to manage or process when reporting findings. Quantitative data relate to numbers and are easier to process using a range of statistical techniques or software packages.

I had access to community groups because of my involvement in land and water management in the Loddon Murray area. I also had access to people working with government agencies to assist me in developing the methodology for this research – as well as the wider community. My approach was to work with community groups to help scope some of the issues that the community held about catchment planning. This information was used to develop a questionnaire that was sent to five hundred people in the Shire of Gannawarra that were randomly selected from that Shire’s electoral roll. These two steps were designed to give me the views of the local community about catchment planning.

The community groups could identify the agencies that they thought were involved in catchment planning. These data would then be used to develop a set of semi-structured interview questions that were put to senior officers working within the agencies that are involved with catchment planning.
The interviews were then used to gain the views of those officers of their agency’s role in catchment planning and the views of the interviewees on who should be involved in catchment planning and why. The methodology of the research component of this project can be seen in Figure 11.
Figure 11. Research Methods

Literature based on social research was used to determine the best approach for this research. The final approach for my research is outlined in the Table 7. I elected to undertake my research based on a mix of quantitative and qualitative techniques – facilitated workshops, a community
survey of randomly chosen people in the local area and semi-structured interviews with agency staff working with catchment planning.

Table 7. Outline of Methodology and Activities for this Research Project

<table>
<thead>
<tr>
<th>Step</th>
<th>Research Question</th>
<th>Activity</th>
<th>Format</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Workshops (3) with land and water management groups</td>
<td>Brainstorming and labelling of catchment planning activities</td>
<td>To determine some of the issues and agency groups that may be present in the community and develop a questionnaire for community based on this information</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Community questionnaire</td>
<td>Mail out questionnaire to 500 randomly selected people</td>
<td>To determine how the community views catchment planning, determine if they believe their concerns and issues are addressed and how they believe various agency groups are performing.</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Semi-structured interviews with agency staff</td>
<td>Semi-structured interviews based on themes that were found in data from step 2.</td>
<td>To determine the views of agencies and their perception on community views</td>
</tr>
<tr>
<td>4</td>
<td>2,3</td>
<td>Examine Case Studies</td>
<td>Loddon Murray Strategy North Central Regional Catchment Strategy</td>
<td>To evaluate recent planning to determine its effectiveness and the degree of community participation</td>
</tr>
</tbody>
</table>

There are three interviewing techniques that I could have used – structured interviews, focus or unstructured interviews and semi-structured interviews. Structured interviews involved the use of pre-established questions and pre-set responses (Punch 1998). Their limitation is that as they are delivered in a
standard way, there is little room for flexibility or different views to arise. According to May (1993) focussed or unstructured interviews allow the interviewee to talk within their own terms of reference. They can give a greater understanding of the interviewee’s point of view. According to May (1993), this technique requires a lot of skill on the interviewer’s behalf to manage the interview without being too assertive with the participant. This could result in the person feeling intimidated and not revealing the detail of information that was being sought.

4.7 Choice of Methods

In developing the methodology for my research, I was eager to gather people’s insights into how they believed catchment planning worked. It was assumed that these insights would vary with the circumstances of the people concerned and their level of exposure to the catchment planning processes. Some people have been working with land and water management for many years.

At the other end of the spectrum, people may have no idea about the processes associated with catchment planning. I felt it was necessary to address the views and concerns of people as members of our community if I was to evaluate existing catchment planning processes.

I concluded that the best way to gain these views would be to combine quantitative and qualitative research methods. Punch (1998) makes two points regarding the use of the combined approach. Firstly, you need to be clear about what you want to find out. Secondly, you cannot get the scope and depth of the research when only using one technique. In other words, you will not get the insights into how people think by only using a quantitative or a qualitative technique.
The method used for the community survey was to undertake a mail out sending a questionnaire to five hundred people within the Shire of Gannawarra. Given the size of the sampling frame or population, this was the best use of my resources. As discussed elsewhere, other techniques are available such as personal interviews and telephone surveys but they need a lot of resources to implement, document and evaluate.

I elected to use semi-structured interviews as a good compromise. Whilst formal questions are still used, the interviewer is free to pursue new relevant points as they arise. This allowed me to gather the insights of the participants that were different. Whilst these people worked for an organisation, I was keen to obtain their personal views. All of the people that were interviewed had been working in their area of expertise for twenty years or more.

Whilst I was seeking the insights of the local community, I wanted to keep an open mind about those views. Given that, the best way to start my research was to use community groups to help start to define these views or issues. These groups had been working in land and water management for a long period of time. The Tragowel Plains and the Boort West of Loddon Land and Water Management Groups had been meeting since 1986 (Wilkinson and Barr 1993) and the Kerang Landcare Group since 1995.

This approach might result in a framework or some suggestions on how to enhance existing catchment planning processes. I felt that this methodology was appropriate to my needs and within the limits of my resources.

This project uses both qualitative and quantitative approaches depending on the information required. The workshops were a qualitative research as the views of the workshop members were sought. The issues of resourcing in
this instance were not relevant given the small scale - working with ten or so people at a time. The community survey used both - dependent on the information being sought. Background questions about postcode, age and gender can be managed quantitatively as they can be easily converted to numbers.

Questions seeking views are qualitative in nature as the responses were in the respondents' own words.

4.8 Data analyses

I gathered both quantitative and qualitative elements. The quantitative data results as shown as numbers against the relevant question. The qualitative data has been coded using QSR NVivo and reduced to the information shown in Appendix Two. NVivo is a software package that allows one to select passages within a document and assign a heading or theme to that passage. There is provision for sub-heading or sub-themes. This gives the researcher the ability to group responses in words and give them a quantitative figure. NVivo uses nodes as themes and child nodes as sub-themes.

Any responses of a qualitative nature, that is they were words rather than numbers, were typed up and then coded using the NVivo program. When the coding was completed, NVivo generated reports listing themes and sub-themes and the number of passages that is related to each. These reports were exported as text files for use with Microsoft Excel to allow further analysis.

The manipulation of the data gained from the three survey methods is different. Whereas quantitative data can be tabulated and compared quite easily using various statistical tools, qualitative data are coded into several themes or nodes. This grouping of responses only allows for some low level comparison in terms of numerical relationships.

Detailed statistical analysis was not undertaken because the information being sought was the views held by the people
being surveyed. These views did not need to be representative of the wider community to be still useful to my research. The data was quite simple and yet still had obvious trends. The size of the samples was not sufficiently large enough to apply statistical analyses with any degree of accuracy.

4.9 Community Workshops

Each of the four Land and Water Management Plans that were present in the Loddon Murray area had implementation groups that had met on a regular basis for over ten years. Only two implementation groups actually met during the time that the research for the project was underway, that is, in the last half of 2001.

I approached the executive support officers of the two land and water management groups and asked if I could run a workshop session as part of the next meeting of their group.

When the chairperson of the Torrumbarry East of Loddon Land and Water Management Group (that was not meeting at that point in time) was approached, he suggested that the Kerang Landcare Group be involved as it had a few members that were part of former group. The views of this range of people are outlined in the data gathered at that workshop and are discussed below. All data was recorded on half sheets of A4 paper. No names or other details were recorded on those pieces of paper.

Before any research commenced that involved people, there was a requirement that my research methodology and the management of personal information be cleared by the Deakin University Human Research Ethics Committee. All participants have agreed in writing to be involved in my research. These people have received a description of the aim of my research and the research method that I would be using with them. The names of the participants in the three stages
have not been recorded in a way that a particular statement can be traced to an individual.

Three workshops were conducted and their details are shown in Table 8.

Table 8. Details of Workshops

<table>
<thead>
<tr>
<th>Name of Group</th>
<th>Date of Meeting</th>
<th>Location</th>
<th>Number of workshop participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tragowel Plains Land and Water Management Group</td>
<td>7 June 2001</td>
<td>Pyramid Hill</td>
<td>10</td>
</tr>
<tr>
<td>Kerang Landcare Group</td>
<td>9 August 2001</td>
<td>Kerang</td>
<td>14</td>
</tr>
<tr>
<td>Boort West of Loddon Land and Water Management Group</td>
<td>11 September 2001</td>
<td>Boort</td>
<td>12</td>
</tr>
</tbody>
</table>

Note:
The Tragowel Plains Land and Water Management Group formed in 1988 to address major salinity issues in an area that centres on Pyramid Hill and Calivil in northern Victoria east of the Loddon River. The group met on a more or less monthly basis until 2001 when the group’s plan was amalgamated into the Loddon Murray Land and Water Strategy that was discussed in Chapter 2. The Boort West of Loddon Land and Water Management Group had a similar role west of the Loddon River centred on the town of Boort and had the same fate as the previous group. The group started in 1990. The Kerang Landcare Group operates at a smaller scale than the Land and Water Management Groups. It was working on revegetation projects and the control of weeds and pests at a neighbourhood level. The group was meeting when I arrived at Kerang in 1995 and still meets today.

4.9.1 Modified Nominal Group Technique

The main rationale for the use of the Modified Nominal Group Technique was to use a methodology that kept my bias in the process to a minimum. It allowed me to facilitate the workshops with a much lower level of personal contribution. This process is outlined in Table Eight and I have received extensive training in delivering this technique. The techniques
could also be repeated as there are planning pro formas that are used each time the workshop is conducted (see Appendix Four). The workshops were used to assist in the development of the questions for the community survey.

I have slightly modified Spencer's (1989) process and did not assign priority to the items raised by the groups. This was a brainstorming process seeking to find contextual information for the next part of my research.

The Modified Nominal Group Technique (Spencer 1989) p. 58) was conducted using the steps shown in Table 9.

Table 9. Process Used to hold a Modified Nominal Group Workshop

<table>
<thead>
<tr>
<th>Step in the Modified Nominal Group Technique</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rational aim - what was the workshop being held for?</td>
<td>The rational aim on the work sheets developed was to document the group's views and ideas on catchment planning process.</td>
</tr>
<tr>
<td>Context</td>
<td>To let the group know what was being asked of them, why the data were being sought and how this data was to be managed and to reiterate that all names would be kept confidential (a requirement of the Deakin University Human Experiment Ethics Committee)</td>
</tr>
<tr>
<td>Brainstorm - each participant was individually asked to put forward any points that were important to him or her in the context of catchment planning. This process continued until there were no new points being raised.</td>
<td>All points were written onto numbered half pages of paper and attached to a wall for all participants to see.</td>
</tr>
<tr>
<td>Consolidating - all of the points present on the wall were cross-checked for accuracy, ambiguity or to clarify their meaning.</td>
<td>The participants were then asked to consolidate the pieces of paper into headings or themes. The heading or themes were sought from the group - not put up by me as convenor</td>
</tr>
<tr>
<td>Assign priority - normally the participants would be asked to prioritise the themes in terms of their importance to catchment planning</td>
<td>This did not occur as the points being put forward were being used as context to the next phase of the research and prioritisation was felt not to be necessary.</td>
</tr>
<tr>
<td>Consensus and summary - the participants were asked to review the themes raised and comment on anything that may have been left out.</td>
<td>Finally, I summarised the themes to ensure that the group was happy with the title or heading of each theme.</td>
</tr>
</tbody>
</table>
The information that was gained from the three workshops was used to develop the questions for the community survey that was conducted in the form of a questionnaire mailed out in late 2001.

4.10 Community Survey
The community survey was conducted in the Shire of Gannawarra. The location of the Shire of Gannawarra can be seen in Figure 12. The survey was conducted between 15 November and 31 December 2001.

Figure 12. Boundaries of Local Government in the Loddon Murray Area showing the location of the Shire of Gannawarra in relation to the State of Victoria and its capital city of Melbourne.

The survey (included as Appendix Two) had three parts. The questions in Part A were designed to assess the knowledge of the local community of catchment planning processes. The questions are based on the issues of responsibility for catchment planning, groups involved in catchment planning and how effective these groups are, and the issues of coordination and leadership.
The words in brackets are provided for clarification and
were not part of the original questions.

In Part B, survey participants were asked to identify ways
to improve catchment planning.

Part C consisted of questions about demographic
information - gender, location, age and type of employment.

The questions in Parts A and B were based on the
themes that were identified by the groups involved in the
workshops outlined in Section 4.9. The themes are as listed
below:

Leadership  Coordination
Community    Vision
Education    Management (Planning)
Communication Processes/ structure

4.10.1 Determination of the Survey Sample

The next step was to conduct the community survey. I
needed to determine who should be involved in the survey –
my survey sample. Neuman (1997) states that random
sampling is most likely to yield a sample that represents the
population.

A simple random sample was chosen for this study.
Neumann (1997) also states that a randomised sample is
unbiased. The researcher’s interests do not enter into the
selection of the sample. Dillman (2000) supports this statement
pointing out that characteristics of a population can be
estimated with precision with larger samples returning higher
degrees of precision.
Dillman points out there are four types of error that need to be considered when conducting a survey:

- sampling error
- coverage error
- measurement error
- non-response error

Sampling error may result in missing out on some of the elements of the population as not all people are surveyed. Coverage error results when all members of the population do not get an equal chance to be surveyed. For example, not all people may be on the current electoral roll. Measurement error can occur when the questions asked are poorly worded and produce inaccurate or uninterpretable answers. Non-response error is the difference in opinion that may occur between the people who respond to a survey and those that do not (Dillman 2000).

The electoral roll for the Shire of Gannawarra was used as the sampling frame. Collis and Hussey (2003, p. 155) define a sampling frame as a list or record of a population from which samples are drawn. According to Neumann (1997) a statistically relevant sample should be about ten percent of the total population – unless it is a very small population, for example ten out of one hundred people. He also notes that there are three things that need to be taken into account when determining sample size – the degree of accuracy, the degree of diversity or variability in the population and the number of variables being examined in the data analysis.

I was interested in the diversity of opinions and had no way to check accuracy in any detail. I decided to use a sample size of 500 that results in a sample ratio of five per cent as there are just over ten thousand people on the electoral roll of the Shire of Gannawarra.
As the roll was not available digitally, the roll was scanned using an optical character recognition program and a document scanner. The file was saved as a text file, transferred into a word processing program to tidy up loose columns and checked for accuracy. The first column was numbered and the roll was in alphabetical order. The amended file was then cut and pasted into a spreadsheet using Microsoft Excel.

This spreadsheet was used to generate five hundred random numbers between 1 and 10,178 (the total number of voters on the electoral roll). The list of random numbers was then sorted into numeric order and matched against corresponding numbers in the first column of the electoral roll. These entries were then cut and pasted into my final mailing list. Form letters explaining why this research was being conducted were generated using a word processor and then the letter and a copy of the interview questions and a consent form were sent out in November 2002. A stamped and self addressed envelope was enclosed with an entry form to win a prize as a further incentive to return the questionnaire.

4.10.2 Accrued Return Statistics for Community Survey

As stated above, survey forms were sent to 500 randomly selected people in the Shire of Gannawarra. 69 people filled out all or part of the survey and 59 survey forms were returned 'return to sender'. Another 13 people returned their form stating they could not or would not partake in the survey. Those people who provided notes with regard to their not participating in the survey generally spoke about their lack of knowledge of catchment planning or felt they were too old to contribute to the survey. This is summarised in Table 10.
Table 10. Summary of surveys returned

<table>
<thead>
<tr>
<th>Details</th>
<th>Number to January 8, 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forms Returned</td>
<td>69</td>
</tr>
<tr>
<td>Cover letter or letter returned electing to not partake in survey</td>
<td>13</td>
</tr>
<tr>
<td>Filled out consent forms</td>
<td>44</td>
</tr>
<tr>
<td>Surveys marked &quot;Return to Sender&quot;</td>
<td>59</td>
</tr>
<tr>
<td>Follow up letters marked &quot;Return to Sender&quot;</td>
<td>61</td>
</tr>
</tbody>
</table>

The response rate to the survey was nine per cent if just counting completed forms or 12 per cent if one includes the forms where people elected to not participate. This was very disappointing. Nevertheless, the information that was received was enough to serve its purpose – the respondents gave me enough information to form some judgements about catchment planning from the eyes of the local community.

There are two ways to improve the level of confidence in data – increase the size of the data sample or to increase the numbers of different methods to be able to cross check or test data from different sources. Livesey (2004) calls this process *method triangulation*. Livesey states that this process can assist research in three ways:

- It allows the collection of different types of information (qualitative and quantitative data)
- It helps to check that data collected in one form (for example, through a structured interview) is both reliable and valid.
- It helps to verify (that is, "confirm") that any data collected is accurate.

Even though the response rate to the community survey was low, it was only one part of my research. By also conducting community workshops and semi-structured
interviews, I was still able to use the information from all phases to confirm some final trends for my research.

4.10.3 Discussion – the Low Rate of Participation in the Community Survey

There is the need to recognise that there may be a message in the number of surveys returned - was the low participation rate an indication of apathy or lack of knowledge on the subject of catchment planning? It may be a case of respondents displaying a lack of interest in reading the questionnaire and then responding in the written form.

66 questionnaires were returned. A further 13 letters were returned stating that the respondent would not or could not take part in the survey indicating that they felt they were too old, too uninformed or physically unable to participate. 59 letters were returned and marked ‘return to sender’.

Another letter was sent out as there was a mistake in the first letter in that it had two deadlines. The second letter was designed to clarify the deadline and to act as a prompt to get people to return their questionnaires. 61 items of the second letter were returned marked ‘return to sender’. This usually means that Australia Post could not deliver the letter to the address on the envelope.

In other words, only nine percent of the surveyed people expressed any thoughts on catchment planning - given that 440 people have received both a questionnaire and follow up letter.
4.10.4 Preliminary Conclusions – Community Survey

The following major points identified from data gathered:

- Coordination between agencies or organisations involved in catchment planning at Commonwealth, state and local levels was seen to be not as good as it could be.
- Leadership in catchment planning should come from all persons concerned in catchment planning.
- Responsibility or accountability for catchment planning. Who does what in the catchment?
- The community was keen to have access to information and education to enable it to make better decisions about catchment planning issues.

These points were used to develop the questions for the semi-structured interviews. Questions were developed to determine how the interviewee thought the community would perceive each theme, what their organisations’ perceptions were and their own. Furthermore, they were asked how they might do things differently.

This process has produced a lot of rich information to enable some conclusions to be derived from it – a feature of the grounded theory approach. The knowledge gained from this survey was also used in the development of the Loddon Murray Land and Water Management Strategy (Turner and Shanahan 2001). The inclusion of community capacity projects and the reintroduction of community education into this strategy were a direct result of this part of my research.

4.11 Semi-Structured Interviews

The semi-structured interview approach was adopted because of the need to gather rich qualitative data. I was more interested in the depth of information rather than the number of pieces of information. Punch (1998) discusses the point that
qualitative data captures a person’s *lived* experience. It allows people to talk about their experience in their own lives. This is not possible using a highly structured survey technique such as a questionnaire.

Neumann (2000 p. 5) puts forward four areas that can bias this type of data:

*Overgeneralisation* where people might extrapolate their ideas to other different situations.

*Selective observation* where people talk about specific events in a longer time frame.

*Premature closure* that is based on the first two points. The researcher thinks they have all of the answers and do not listen or seek any further, new information.

*Halo effect* where information is seen to be highly positive or negative and yet the information being used is incomplete.

These four points are important when coding passages obtained through interviews. There is a tendency to prejudge evidence rather than consider it on its own merits (Neuman 1997). I have previously discussed my concern that my experiences in catchment planning, good and bad, may bias this work. These four errors sum up this unease quite well and give it some definition. When I was conducting the interviews, it was very hard to avoid premature closure on some points because I thought that I already knew the answer or where the person being interviewed was coming from.

I noticed when reviewing and coding the transcripts that there were still occasions where I unintentionally closed a discussion prematurely. Quite often, I have asked the participants whether they had more to say on a certain point in an attempt to avoid this situation.

The semi-structured interviews were conducted in mid-2003. Ten interviews were conducted with key people working in a range of organisations working in catchment management.
These organisations included:

- Catchment management authorities (2 participants)
- Local Government (1 participant)
- Department of Primary Industries (2 participants)
- Department of Sustainability and Environment (Crown Land Management) (1 participant)
- Parks Victoria (1 participant)
- Urban water authority (1 participant)
- Rural water authority (2 participants)

Several people were interviewed as the breadth of issues that were managed by a particular agency meant that some people were not fully aware of all of the operations of their employer. These organisations were identified as being involved in catchment planning by my community survey. I wrote to the senior management of each organisation asking to interview specific people within their structure. I wanted to interview people with a good level of experience in catchment planning rather than a newly appointed person who might not be able to answer my questions with appropriate detail.

A package was sent to each senior manager comprising the following documents:

- A covering letter outlining the purpose and procedure of the interviews
- A consent form asking for the consent of the relevant manager in writing specifying dates and people
- A list of the questions being put to interviewees

At the time of interview, the people being interviewed were also asked to sign a consent form and were given a covering letter and the list of questions. The management of tape recordings and avoiding the use of names without individual and organisational permission was stressed. The right to withdraw from the interview if the individual felt compromised or uncomfortable was also stressed.
Participants were asked to set aside one hour for the interview. The interviews averaged one hour in length of time.

Each interview was taped with the interviewees’ permission (one did decline to be interviewed but was happy to supply typed answers to the questions in the survey). Six people were interviewed at their place of work. One person was interviewed at my place of work and two people were interviewed over the telephone and taped. Each tape was numbered (DU 1 to 4 and 6 to 10). No names can be associated with the relevant tape to protect that person’s confidentiality and to fall in line with human ethics responsibilities. The nine tapes were then transcribed.

4.11.1 Data Analyses of Semi-structured Interviews

The nine transcriptions and the notes from the tenth person were then coded using the NUD*ST computer software that allows passages to be coded or placed into themes. I used the same software to analyse the responses to questions in the community questionnaire that is discussed earlier in this section.

After coding was completed and the data transferred to the Excel program, the information was ranked by the total number of responses to the same theme. This allowed me to compare the results from the community survey with the results from the semi-structured interviews and how well they are aligned with one another. In examining the information gained from the semi-structured interviews, sets of information were present. One set showed existing issues in catchment planning. The other set was suggesting ways to improve catchment planning. Some of the points raised within the two sets of information are summarised in Table 11.

Table 11. Breakdown of Issues – Semi-structured Interviews

<table>
<thead>
<tr>
<th>Part A – Issues in Catchment</th>
<th>Part B – ways to refine</th>
</tr>
</thead>
</table>

96
<table>
<thead>
<tr>
<th>Planning</th>
<th>Catchment Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Which groups are involved in catchment planning?</td>
<td>• Effectiveness of communication</td>
</tr>
<tr>
<td>• How effective are those groups?</td>
<td>• Effectiveness of good coordination</td>
</tr>
<tr>
<td>• Who should be responsible for catchment planning?</td>
<td>• Effectiveness of community education</td>
</tr>
<tr>
<td>• What are the catchment management issues?</td>
<td>• Effectiveness of good leadership</td>
</tr>
</tbody>
</table>

4.11.2 Structure of Interviews

The interview questions were structured in two parts. The first part was to check whether the interviewees’ views were aligned with the results of the community survey in terms of who should be doing what with regard to effective catchment planning. The second part expanded on some of the behaviours that the first two stages of my research, the workshops and the community survey, had indicated were important to good catchment planning.

Because some interviewees discussed the same topic several times, I believe there was a tendency to bias data a little.

To determine the most important issues to the interviewees or informant, I initially ranked the responses as discussed in Section 4.11.1. I then examined the number of individual responses to a certain theme or topic and discarded any responses where less than five of the ten people had discussed a certain topic. For example, ten people discussed the importance of leadership coming from within the community (score = 10). Three people working for the state government may have discussed the importance of leadership
coming from various state government policies on four different occasions (score = 12).

Although this generated a higher score, the other line where all ten people discussed the same topic should receive a higher ranking as it is much more significant. All participants discussed the same issue, rather than only three of them discussing a favourite point on four occasions. This way of ranking may offset some inbuilt biases held by the participants.

Because many points were only raised once and may have been unique to personal circumstances, I decided to rule out any scores that were less than four. In examining the tables, I discovered that where the scores was less than four that the point was usually raised by only one person. When I referred to the transcripts of that person, the discussion often appeared to be very specific to that person rather than a ‘wider picture’ issue. I must also stress that some of these points were still important in some context and were not totally discarded.

4.12 Conclusion

My research method involved three community workshops, a mail out survey to 500 people and a semi-structured interview to ten catchment planning professionals. I used both quantitative and qualitative techniques. As I was more concerned about the range of information rather than its abundance, the information that was returned by the community survey was deemed to be sufficient for the purposes of my research.

At the end of Chapter Two, several themes were seen to arise from the literature. These themes have been incorporated into the structure of all steps of my research with people. To reiterate, these themes examine the aspects in involvement, responsibility, communication, effectiveness and leadership in
good catchment planning. In Chapter Five, the results of this research is analysed and any linkages between the research and the literature are discussed.
Chapter 5: Results and Discussion

In this Chapter, the results of each component of the research, the workshops, community survey and semi-structured interviews, are discussed. The Loddon Murray Land and Water Management Strategy (Loddon Murray Land Strategy) and the North Central Regional Catchment Strategy are also put forward as case studies.

The aim of this research is to develop a catchment planning framework that has appropriate levels of community participation. To enable this to be done, my research questions that have already been set out in Chapters 1 and 2 will receive closer analysis. The questions are:

- How well do current catchment planning processes perform and do they involve communities appropriately?
- Do catchment planning agencies believe they involve the community in their catchment planning at an appropriate level?
- What changes might be needed to ensure good catchment planning with good participative planning?

The results of my research are then compared to the processes that were used to develop the strategies that make up my case studies. In conclusion, there is discussion about how these learnings are relevant to contemporary catchment planning and the involvement of the community in that planning.

5.1. Issues in Catchment Planning – Community Workshops

The three community workshops were held to gain an understanding of the views of the community on catchment planning and then to use this information to develop questions for the next stage of my research – the community survey. These were brainstorming sessions that were conducted to
reduce the impact of my personal views that could be a source of bias in this research.

At the three community workshops, I asked the participants to brainstorm any issues relevant to catchment planning. The participants was then asked to place the issues raised into categories and then finally these categories were labelled, for example, one was labelled as ‘coordination’. As a cross check, all of the information from the three workshops was coded using the software program, NUD*ST 5 20 that is often used in the evaluation of qualitative social research.

At the end of their workshops, the participants had arranged their issues under the headings that are listed in Table 12. The headings require further clarification. The Kerang Landcare Group proposed headings that are obvious and related to good communication, community education and training and some discussion about the processes and structures that underpin the Landcare network. The other groups also raised communication and education as headings. The Boort West of Loddon Group was very concerned about the need for good coordination and planning. The Tragowel Plains group also discussed project guidance and the need for strategic vision.

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20 NUD*ST 5 is another version of the QSR NVivo computer program
Table 12. Points of discussion raised by community workshops

<table>
<thead>
<tr>
<th>Kerang Landcare Group</th>
<th>Boort West of Loddon Land and Water Management Group</th>
<th>Tragowel Plains Land and Water Salinity Management Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sustainability of the Triple Bottom Line21</td>
<td></td>
</tr>
<tr>
<td>Education and training</td>
<td>Education</td>
<td>Communication</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td>Weaknesses</td>
</tr>
<tr>
<td>Community</td>
<td>Funding</td>
<td>Success</td>
</tr>
<tr>
<td>Drainage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processes/structure</td>
<td>Coordination</td>
<td>Project guidance</td>
</tr>
<tr>
<td>Management (Planning)</td>
<td></td>
<td>Negative forces</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vision</td>
</tr>
</tbody>
</table>

In Table 11, the themes labelled as **funding** and **weaknesses** relate to reduced levels of funding and a gradual loss of profile or reduced public awareness of land and water management planning. Poor coordination across catchment planning agencies and lack of leadership within agencies was also listed under **Weaknesses**. An interesting comment from this group under the **project guidance** heading was listed the point ‘sea of bureaucracy – who to ask?’ In my view, the participants perceived leadership, coordination and responsibility as part of **project guidance**.

The Boort West of Loddon Group also raised this point under another heading – **coordination**. These points were about a lack of coordination across agencies and lack of

21 The group felt that this was relevant to all the headings.
coordination between the various levels of Government and put up the point ‘confusion-coordination needed’.

All three groups had common concerns and raised communication, cooperation, planning, resourcing and leadership as discussion points. These points have already been discussed in detail in Chapter Two. McCool and Guthrie (2001) discussed the need for learning, responsibility and relationship building as important for good public participation in catchment planning. Sobels et al. (2001) conducted research with Landcare networks in Australia. They found that the most effective networks had similar features – efficient coordination, good communication structures, good education, ongoing levels of funding or resourcing, professional management and effective leadership. These points further confirm the points that arose in the community workshops.

The main requirement from the workshops was to put forward data to inform the development of the community survey.

5.2 Community Views on Catchment Planning - Survey

The questions in the survey were organised as themes based on the information received from the community workshops. The survey had a three part structure. The questions in Part A were the views of the community on catchment planning and the agencies involved – what were they, should they be responsible and are they effective?

The themes that were identified from the data from the three workshops were communication, community education, coordination, leadership and responsibility (for catchment planning). These were recurring themes in all three workshops and were seen as a good approach to the development of a questionnaire based on these themes. Question 1.1 asked the respondents to identify groups involved in catchment planning. Question 1.2 asked the respondents to rate the effectiveness
of these groups and Question 1.3 asked the respondents to identify who they believed should be responsible for catchment planning.

The data for Question 1.1 is shown in Table 13. The data indicate the number of times participants saw each agency as being involved in catchment planning. Respondents identified the North Central Catchment Management Authority (42 responses), the Department of Natural Resources and Environment (43 responses) and Goulburn Murray Water (41 responses) as the more effective stakeholders in the Loddon Murray Area. Local Government was identified as involved in catchment planning as a stakeholder by fewer than half of the people surveyed.

Table 13. Number of responses where the participants perceived the listed agencies as being involved in catchment planning (n=53)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Central Catchment Authority</td>
<td>42</td>
</tr>
<tr>
<td>Dept. Natural Resources and Environment</td>
<td>43</td>
</tr>
<tr>
<td>Local Government (Shire)</td>
<td>29</td>
</tr>
<tr>
<td>Goulburn Murray Water</td>
<td>41</td>
</tr>
<tr>
<td>Parks Victoria</td>
<td>24</td>
</tr>
<tr>
<td>Urban Water Authority (Lower Murray Water)</td>
<td>25</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
</tbody>
</table>

The questions in Part B were seeking information on how to improve catchment planning. How do catchment planning agencies coordinated and communication with each other and the community? How applicable was the concept of leadership and who should carry this role?

In terms of the effectiveness of these agencies (how well were they doing their job?), the data concur with the list in the Table 14. Given that a score of four is the mid point in the range between one and seven, it is assumed that scores of five and above indicate that an agency is seen as effective in the area of catchment planning. The score between five and seven
were totalled to ascertain the efficiency of the various agencies. Goulburn Murray Water (27) was perceived as slightly more effective than the North Central Catchment Management Authority (26), the Department of Natural Resources and Environment (22) and decidedly more effective than Local Government (13).

The agencies that were scored as being effective in catchment planning by participants and the actual score is listed in Table 14.

Table 14. Agencies seen by respondents as being effective in catchment planning (n = 53) Scores less than four were not included as this indicates that the respondents did not believe these agencies were performing adequately in catchment planning.

<table>
<thead>
<tr>
<th>Rating by participant</th>
<th>North Central CMA</th>
<th>Natural Resources and Environment</th>
<th>Local Government</th>
<th>Goulburn Murray Authority</th>
<th>Parks Vic</th>
<th>Urban Water Authority</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (agree)</td>
<td>10</td>
<td>11</td>
<td>8</td>
<td>8</td>
<td>2</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>13</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7 (strongly agree)</td>
<td>10</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total Response</td>
<td>26</td>
<td>22</td>
<td>13</td>
<td>27</td>
<td>9</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

The community responses indicate that all of the agencies listed in the headings in Table 13 have an effective role in catchment planning. In terms of who should be responsible for catchment planning, the scores in Table 15 endorsed the view that it should be the North Central Catchment Management Authority (32 responses).

The former Department of Natural Resources and Environment (27 responses) and Goulburn Murray Water (27 responses) were still seen as having responsibility for catchment planning.
Table 15. Agencies seen by Respondents as Responsible for Catchment Planning (n = 53)

<table>
<thead>
<tr>
<th>Rating by participant</th>
<th>North Central CMA</th>
<th>Natural Resources and Environment</th>
<th>Local Government</th>
<th>Goulburn Murray Water Authority</th>
<th>Parks Vic</th>
<th>Urban Water Authority</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (agree)</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>7 (strongly agree)</td>
<td>19</td>
<td>12</td>
<td>6</td>
<td>10</td>
<td>2</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total Responses</td>
<td>32</td>
<td>27</td>
<td>17</td>
<td>27</td>
<td>11</td>
<td>15</td>
<td>2</td>
</tr>
</tbody>
</table>

Scores less than five were not included as this indicates that the respondents believe these agencies should not be responsible for catchment planning.

The data indicate that participants believe that the North Central Catchment Management Authority is a major stakeholder in catchment planning in the Loddon Murray area. Other agencies that were seen by participants as possessing a major responsibility for effective catchment planning included the former Department of Natural Resources and Environment and Goulburn Murray Water. A concern with this survey is that respondents may have related more with the words ‘catchment Management’ in the title of the North Central Catchment Management Authority rather than its role as a stakeholder. I believe that as the latter two agencies have a much higher profile in the local area, those agencies would be perceived by the respondents as being more effective.

This can be seen in the data relating to effectiveness, where Goulburn Murray Water is seen to be more effective that the former Department of Natural Resources and Environment. Goulburn Murray Water is the rural water authority that delivers all of the irrigation water in the Loddon Murray region. The people completing the survey would work with, know or are customers of Goulburn Murray Water. The
officers working with the then Department of Natural Resources and Environment (DNRE) in the Shire of Gannawarra work mostly in land and water management. There would not be the same level of exposure to DNRE activities by people in the urban communities as catchment management has a lower impact on them.

Question 1.3(b) sought a qualitative response, asking ‘why the agency or group was nominated in Question 1.2(a). The responses fell into three main themes – responsibility, integration and coordination. 11 respondents discussed an integrated approach to catchment planning. 15 respondents thought catchment planning was the North Central Catchment Management Authority's responsibility whilst eleven thought it was the former Department of Natural Resources and Environment's responsibility. 11 respondents thought that catchment planning was the Commonwealth Government's responsibility and another eleven respondents felt it was Goulburn Murray Water's responsibility. This reinforces the fact that there are many players in catchment planning and that coordination and integration is essential. Six respondents discussed the role of Local Government in catchment planning.
Some examples of responses from different participants were as follows:

The NCCMA should be the governing body for all waterways. Like a peak group with all other bodies forming the umbrella structure underneath. One group has to be responsible. Cut out the internal politics and power play from other groups (Resident, Shire of Gannawarra, February 2002).

Catchment Management Authority is charged with catchment management. Shire has statutory planning authority. DNRE and Goulburn Murray Water has expertise. DNRE, Parks, Goulburn Murray Water, LMW are referral authorities (Resident, Shire of Gannawarra, February 2002).

They should all be responsible but I don’t know which should be more responsible (Resident, Shire of Gannawarra, February 2002).

North Central Catchment Authority looks at the overall area. Goulburn Murray Water provides irrigation water to the area and Lower Murray Water provides our urban supplies – they are the most relevant to planning in the region (Resident, Shire of Gannawarra, February 2002).

Question 1.4 asked the respondents to tick the issues that they felt relevant to catchment planning.
The results are set out in Table 16.

Table 16. Issues considered by respondents to be relevant to catchment planning (n=53)
Scores that are in brackets are the total of the boxes ticked by respondents for each management issue. The percentage figure is the total respondents for a given issue as a percentage of the total response (53).

<table>
<thead>
<tr>
<th>Issue</th>
<th>Total Responses</th>
<th>Issue</th>
<th>Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterway Management</td>
<td>89% (47)</td>
<td>Floodplain Management</td>
<td>87% (46)</td>
</tr>
<tr>
<td>Salinity</td>
<td>87% (47)</td>
<td>Drainage</td>
<td>81% (43)</td>
</tr>
<tr>
<td>Weeds and vermin</td>
<td>77% (41)</td>
<td>Nutrient Management</td>
<td>66% (35)</td>
</tr>
<tr>
<td>Land Management</td>
<td>70% (37)</td>
<td>Biodiversity</td>
<td>51% (27)</td>
</tr>
<tr>
<td>Social Issues</td>
<td>45% (24)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data indicate that the traditional areas of catchment planning such as vermin and noxious weeds, and salinity were well represented. Local drainage and land and water management groups have expended a lot of resources in salinity management, land management, nutrient management and drainage. The North Central Catchment Management Authority has floodplain management and waterway management as its core functions. The former Department of Natural Resources and Environment had been working with landholders to assist in the management of pest plants and animals for many years.

The scores for biodiversity and social issues were, by comparison, quite low and need more discussion. The importance of social issues in the Triple Bottom Line that was identified by the United Nations in 1992 (UN 1992), ‘Biodiversity’ is a relatively new concept in the wider community. According to the Ecological Society of America (ESA), the term was first used at the National Forum on BioDiversity held in 1986 in the United States. According to
Kotilainen (1997), the word found widespread use after the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. This was the same United Nations conference that the concept of the Triple Bottom Line was introduced. The Victorian Government released its Biodiversity Strategy (DNREV 1997a) in 1997.

In a companion document, the Victorian Government states that biodiversity is a relatively new word (DNREV 1997b, p. 2). The document also states that biodiversity is linked to Victoria’s biological heritage that is essential for its economic, cultural, social and spiritual well-being. Even though the term ‘biodiversity’ has been in use in Victoria since 1997, I think it still a relatively new term outside the scientific community, and a contributing factor to the low score in the survey results.

Perhaps there is also a problem with the definition of social issues. Responses were extensive in their discussion of the importance of community involvement and local ownership. It would be interesting to follow up on whether the respondents felt social issues were about social welfare issues rather than issues for society at large.

In working with the Loddon Murray Strategy, there was a need to discuss biodiversity at some length. Even though the term has been in use for ten years or more, its context was not fully understood by members of the Loddon Murray Forum. In terms of current government programs, the Victorian Government and the Commonwealth Government have placed high priorities on the protection of biodiversity and the need to address social issues through various community capacity programs. This has already been discussed in Chapter One.

Questions 2.1(a) and (b) (see Appendix 2) sought the views of participants regarding communication in catchment planning. Six respondents (11 per cent) felt that there was good communication between catchment planning agencies
and the community and 44 (83 percent) disagreed. In the qualitative data, 6 responses discussed poor communication, 11 responses stressed the importance of community awareness and 5 responses discussed the need for open and honest communication. Some examples are as follows:

*Each group is planning for its own benefit – not a joint approach. There should be a coordinating body/person.*  
(Resident – Shire of Gannawarra, February 2002).

*Majority of people don’t know of the NCCMA or what they are about. People don’t understand their catchment or the reality of what is happening in the upper catchment effect us and vice versa.*  
(Resident – Shire of Gannawarra, February 2002).

*Communications are too in-house, amongst people and groups interested: it doesn’t percolate out to the general public much.*  
(Resident – Shire of Gannawarra, February 2002).

Questions 2.2(a) and (b) sought the views of the participants regarding *coordination* on catchment planning. Twenty-seven people (51 per cent) indicated that there was *coordination* in catchment planning and 18 (40 per cent) indicated otherwise. In the qualitative data, 12 responses (23 per cent) discussed the importance of an integrated approach and 9 (17 per cent) discussed the need for *coordination* between groups involved in catchment planning.
Some examples in this instance included:

One coordination body, representatives on this from each. Then we may get some efficiency. At present too much individual influence. (Resident – Shire of Gannawarra, February 2002)

There is no coordination. Each group is pushing its own barrow. They don’t look at the big picture. (Resident – Shire of Gannawarra, February 2002)

There is some coordination but it could be better. There are some sections of DNRE who seem to hold up brick walls rather than cooperating on issues (Resident – Shire of Gannawarra, February 2002).

Questions 2.3(a) and (b) discussed the importance of community education in relation to catchment planning. 49 people (92 per cent) felt that it was important and one person (two per cent) did not. In the qualitative data, 21 respondents (40 per cent) discussed the need for community awareness and 4 discussed the need for community consultation. A few of the responses discussed that they would like to know what was happening and why but did not seek active participation.

People need to be aware of catchment quality – this requires time – it’s a new concept and this has to grow – similar to environmental issues. . (Resident – Shire of Gannawarra)

The community at large needs to understand the issues and what is happening (or could happen) to improve our resources, in order for them to accept change and implement changes for the overall good. . (Resident – Shire of Gannawarra)

People need to understand how the actions affect the environment and catchment. Acceptance of decisions is greater when people have the correct information. . (Resident – Shire of Gannawarra)
Questions 3 (a), (b) and (c) sought views on leadership in catchment planning. Is it important? Who should do it and why? 46 (87 per cent) felt that it was important and 2 (4 per cent) did not. In terms of which agency should be the source of leadership, the respondents were given six choices - Commonwealth (Australian Government), State (Victorian Government), Regional (North Central Catchment Management Authority), Community and other.

I have assumed that respondents who scored the various groups as ‘3’ were undecided. The modified results are as set out in Table 17 and indicate whether respondents agreed or not on which agencies should show leadership in catchment planning.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Common-wealth Government</th>
<th>State Government</th>
<th>Regional Government</th>
<th>Local Government</th>
<th>Community</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;3 (disagree)</td>
<td>24</td>
<td>13</td>
<td>17</td>
<td>22</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>3 don’t know</td>
<td>2</td>
<td>13</td>
<td>9</td>
<td>14</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>&gt;3 (agree)</td>
<td>20</td>
<td>22</td>
<td>23</td>
<td>9</td>
<td>23</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 16 illustrates the point that leadership in catchment planning really needs to come from all parts of the community - Commonwealth and State Government, regional bodies and the community. 22 respondents (41 per cent) did not believe that leadership should come from Local Government whereas 9 (17 per cent) felt that it should.

Question 2.4(c) sought qualitative views on why respondents felt that leadership should come from a certain group. The responses were extensive and varied. 3 responses (6 per cent) were about coordination between groups, 7 (13
per cent) felt that it was a North Central Catchment Management Authority responsibility, 5 (9 per cent) indicated it was a Department of Natural Resources and Environment responsibility and 10 (19 per cent) thought it was an Commonwealth Government responsibility. One person definitely felt that it was not the Commonwealth Government's responsibility. Some examples of those responses follow:

*Everyone in the catchment has a role to play. The NCCMA must harness build and lead all of the partners in this difficult and lengthy rehabilitation task. (Resident – Shire of Gannawarra, February 2002)*

*Unless leadership is given at a national level, planning will be piecemeal and uncoordinated eg the Murray Darling basin covers four states. (Resident – Shire of Gannawarra, February 2002)*

*Commonwealth Government re the main body running the country followed by the State Government and they should provide the main leadership role. (Resident – Shire of Gannawarra, February 2002)*

The final question in Part C of the questionnaire asked respondents for any closing comments. The responses were varied and related to the need to monitor the ‘big picture’. In other words, keep everything within its context with good coordination of activities at the right scale. The other areas included water quality, again an integrated approach, coordination between groups and good communication – catchment planning not only concerns farm-based people.

Some examples of responses included:

*The community is becoming aware of environmental issues. Catchment planning is part of it. I think all groups need to work closely together when they are looking at common issues. All have the same aim of preserving our waterways for future generations, with as little impact as possible on the environment (Resident – Shire of Gannawarra, February 2002).*

*The relationship between catchment planning and getting the community on side is crucial. The former can only be
effective if you achieve the latter (Resident – Shire of Gannawarra, February 2002).

The difficulty for catchment planning will be everyone to participate without one ‘side’ seeing it as an imposition on the other side. And for everyone to see the importance of everybody participating not just one group – farmers (Resident – Shire of Gannawarra, February 2002).

I was interested to determine the mix of participants based in urban areas and those based in rural areas. The reason was that there is a need to involve urban people in catchment planning. Anecdotally speaking, it could be assumed that urban-based people are not generally aware of catchment management issues.

In trying to determine whether respondents living in an urban area or a rural area could affect the results, the database was examined to determine the split between urban and rural addresses. 70 per cent of the addresses were in urban areas. I assume that rural people have more exposure on a day to day basis with agencies working in catchment planning.

In terms of gender, 47 percent of the people surveyed were male. Of the recipients who declared their gender on the returned questionnaires, 27 (51.9 per cent) were male and 25 (48.1 per cent) were female. The Australian Bureau of Statistics indicates in the 2001 Census that there were 11,394 people living in the Shire of Gannawarra. In terms of gender, 5,674 (49.8 per cent) were males and 5,720 (50.2 per cent) were females. The gender ratio is the survey compares well with the actual gender ratio in the Shire of Gannawarra.

It was still difficult to ascertain whether the respondents were from a rural or urban background. An examination of the occupations undertaken by the respondents was useful and can be seen in Figure 13.

By grouping urban-based occupations and rural based occupations, it can be seen that 34, or 77, of the forty-four
respondents that declared their occupation had urban-based occupations.

A comparison of the occupations listed by the survey participants is compared with data available from the Australian Bureau of Statistics. This information tends to reduce the probability of biases occurring in the data as it still roughly follows the splits of urban (70 percent) versus rural addresses (30 percent) outlined above.

Another approach was to see if there was any particular group that might have responded at a greater than normal rate. If people understood the issues, they would feel comfortable responding to the questionnaire.

The graph in Figure 13 indicates that all groups had a similar representativeness except for home duties and farmers. Whilst I was able to determine a rough percentage of urban and rural respondents, I could prove or disprove any bias on my final results for the community survey.
Figure 13. Comparison of Demographic Data from ABS Website and Sample.
The data from the Australian Bureau of Statistics (ABS 2001) does not identify people that could be identified as doing home duties.

A Kerang web site (MPDGP 2003) suggests that although Kerang has a population of 4,000 people, it services a population of 18,000 people. Most of them are rural people on dairy farms that are quite small in area compared to cropping and mixed farming enterprises. This indicates to me that many of the people who responded to the survey understood catchment planning and were providing important insights and suggestions.

These insights were used to develop the themes on which the questions were developed for the semi-structured interviews.

5.2.1 Conclusion from Community Survey

The data from the survey supported the outcomes from the workshops with community groups. The community groups have been working with land and water over a long period of time. The summary of the community survey output tends to fall into the following themes:

- Catchment planning needs **coordination** across all groups concerned. People would like to know which group is **responsible** for the various activities associated with catchment planning in their area.

- **Leadership** in catchment planning should come from all concerned in catchment planning. The concept of **leadership** as all stakeholders working as a team seems to be appropriate in this case.
- Communication and education are very important and to date rather poorly done. A strategy needs to be developed to improve communication between the groups involved and also a public awareness strategy needs to be developed to inform the community at large about what is going on and why.

There are recurring issues or themes in catchment planning according to my research. These issues are leadership, community education, communication, the effectiveness of catchment planning and the need to know the responsibilities of the stakeholders involved in it. These themes also confirm the results of the first part of my research and the information found in my conclusions in Chapter Two - Community Involvement in Catchment Planning.

Through the first two parts of my research, I now good understanding of the views of the wider community in the Shire of Gannawarra about catchment planning. The final step in my research was to check these views against the views held by people working within catchment planning agencies.

5.3 View of Catchment Planning Agencies – Semi-structured Interviews

I have used semi-structured interviews with nine people working within catchment planning agencies as the final stage of my research. This step was needed to determine what the agency staff thought the community wanted and test that against the results of my research with the wider community.

The table below (Table 18) outlines the responses to the coding under each of the eleven theme headings that were developed through the community workshops and then the community surveys. All ten transcripts of the semi-structured interviews were coded using NVivo to the following nodes or themes. Some of the statements could not be coded under
these themes and extra themes were created to accommodate them.

Table 18. Total Number of Responses to Main Themes Drawn from Interview Transcripts

<table>
<thead>
<tr>
<th>Theme</th>
<th>Total No. responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement</td>
<td>155</td>
</tr>
<tr>
<td>Leadership</td>
<td>133</td>
</tr>
<tr>
<td>Relevance</td>
<td>109</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>105</td>
</tr>
<tr>
<td>Coordination</td>
<td>94</td>
</tr>
<tr>
<td>Community education</td>
<td>79</td>
</tr>
<tr>
<td>Responsibility</td>
<td>71</td>
</tr>
<tr>
<td>Communication</td>
<td>62</td>
</tr>
<tr>
<td>Total of responses in themes listed</td>
<td>808</td>
</tr>
</tbody>
</table>

If an informant spoke on a given issue, it was coded to the relevant theme. I have called this a response.

Some themes are self-explanatory but others need further clarification.

Involvement relates to an organisation’ or group’s level of involvement in catchment planning. Is a group involved in catchment planning? A group may be involved in catchment planning and yet the informant may believe that their agency should not be responsible for it.

Leadership relates to the provision of leadership and direction. Leadership in this context is facilitative to provide direction rather than a management style role. Intuitively, I felt it involved behaviours such as trust, respect and integrity.

Relevance is asking if the work of the particular agency relevant to catchment planning. Effectiveness is looking at whether the various groups are effective – is their planning and implementation causing a positive change within the catchment. How good a job are the agencies actually doing? Coordination questions how well the various groups in
catchment planning work together and it is closely linked with leadership and communication. The community survey and this part of the research point out high levels of both are vital for good catchment planning.

Responsibility asks which of those groups should be responsible for catchment planning. Some participants indicated that whilst they are involved in catchment planning, their agency should not be responsible for catchment planning. Two participants discussed the point that whilst the State Government had the legislative authority to manage weeds, it was actually being undertaken by Local Government.

Communication initially relates to how well catchment planning agencies consult with the wider community and vice versa. Communication relates to how well the message was getting out to the community and community education related to the deliberated delivery of a specific message. The participants expanded it to a community engagement context at times. It is interesting to note that the number of responses regarding which agencies were involved in catchment planning almost doubled those about those responsible for catchment planning.

The data are quantitative and do not indicate whether the response is of an affirmative or negative nature or perhaps a personal statement. Table 19 starts to break down the responses and gives more qualitative data. I have decided that if less than four different participants raised the same issue that it was not significant. As there were two people from the Victorian Department of Primary Industries, two people from the Goulburn Murray Water Rural Water Authority and two from the North Central Catchment Management Authority, these views probably do not relate broadly to cross agency issues in catchment planning. The selection of four as the cut-
off reflects the point that it represents fewer than half of the ten participants – also keeping in mind the previous point.
Table 19. All Significant Issues Found in Data from Semi-structured Interviews with Agency Staff Regarding Catchment Planning (n=216)

<table>
<thead>
<tr>
<th>Issue</th>
<th>Totals</th>
<th>Negative responses</th>
<th>No of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement of Victorian government - DSE</td>
<td>14</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Involvement of Victorian government/DPI</td>
<td>13</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Involvement of CMA’s</td>
<td>11</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Involvement of Rural water authority~</td>
<td>11</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Community education is relevant to catchment planning</td>
<td>11</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Leadership should coming from within</td>
<td>13</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Involvement of Local Government</td>
<td>12</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Coordination is poor</td>
<td>12</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Leadership at a local community level</td>
<td>10</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Coordination, the unclear understanding of roles</td>
<td>9</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Relevance of water issues especially flooding</td>
<td>8</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Communication is a lower priority for people generally</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Leadership should be with CMA’s</td>
<td>8</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Coordination via a strategic approach</td>
<td>8</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Communication hard due to unclear understanding of roles</td>
<td>8</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Relevance of water issues</td>
<td>8</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Relevance of environmental issues</td>
<td>7</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Relevance to the environment of pest plants and animals</td>
<td>7</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Involvement of the Australian government and the MDBC</td>
<td>6</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Coordination is variable across agencies</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Communication is poor</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Communication in catchment planning is complex</td>
<td>6</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Effectiveness -CMA's are ineffective</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Responsibility - Victorian government through DSE</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Leadership is important</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Totals</td>
<td>216</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

The issues listed above have been expanded from the N-Vivo Coding to assist in the clarification of the points that were listed.
Negative responses were the responses that did not agree with the issue where the response is assumed to be in agreement with the issue at hand.

These data have been ranked by number of references to a topic or theme and by the number of participants who made the reference. One informant could have discussed a topic four or five times on an issue about which they were quite passionate. I believe it is more meaningful if more participants discussed a given issue because of their different affiliations. In comparing data with the community interviews, the restructure of the former Victorian Department of Natural Resources and Environment into the Department of Primary Industries and the Department of Sustainability and Environment is significant.

Although I have coded references to each organisation, the two Departments were often mentioned in their former Department of Natural Resources and Environment context. Although both new Departments have similar scores for involvement in catchment planning, it is not appropriate to double them when comparing them with scores for the former Department of Natural Resources and Environment in the community survey responses.22

Most of the participants felt that the Department of Primary Industries, the Department of Sustainability and Environment, Local Government, the North Central Catchment Management Authority and rural water authorities should be involved in catchment planning. All of them felt that leadership should come from within the local community from local leaders. More than half of the participants felt that the community perceived communication and cross-agency coordination to be poor. In both cases, there was a perception

_________________________

22 The split up of the former Department of Natural Resources and Environment took place in November 2002. The first two stages of my research were conducted prior to this date. The interviews were conducted in mid 2003.
about the lack of understanding of catchment planning by the general community. Five of the ten participants indicated they believed that the wider community did not give catchment planning a high priority in their personal lives.

The participants felt that the community had an unclear understanding of the roles of the various groups involved in catchment planning. The participants felt that the concept of catchment planning was too complex for most people within the wider community. More than half felt that community education was very important – perhaps to address their previous point. In terms of relevance, the main issues that arose were related to the environment or water.

Table 20 outlines some areas where things were perceived by the participants to be in need of improvement.

Table 20. Issues of a Negative Nature (n=216)

<table>
<thead>
<tr>
<th>Issue</th>
<th>Negative responses</th>
<th>No of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination is poor</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Coordination – there is an unclear understanding of roles</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Communication is a lower priority for people generally</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Communication – the unclear understanding of roles</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Coordination is variable across agencies</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Communication is poor between agencies</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Effectiveness - CMA's are perceived to be ineffective</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Totals</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

The issues listed above have been expanded from the N-Vivo Coding to assist in the clarification of the points that were listed.

Negative responses were the responses that did not agree with the issue where the response is assumed to be in agreement with the issue at hand.
Most of the negative issues that are listed in Table 23 are about poor coordination and communication. A major concern is the unclear understanding of roles of catchment planning agencies that is present for both coordination and communication. The community surveys supported this score. In the survey, out of a possible 50 responses, 44 people stated that communication regarding catchment planning was not good. The scores in the community survey looking at coordination were that 27 people felt there was coordination and 18 did not.

As the main themes have evolved through the development of this research, it is useful to examine the responses of my participants to each of these themes. Whilst Table 23 has the number of responses to each theme, the numbers themselves provide little indication of the importance where qualitative responses provide good context.

5.4 Views of People working with Agencies about Catchment Planning

Community workshops and a community survey were the first two components of my research and were designed to assess the attitudes of the public to catchment planning, who should be involved, how and ? The third component was undertaken to be able to answer the second research question which was:

- *Do catchment planning agencies believe they involve the community in their catchment planning at an appropriate level?*

To answer this question, ten people were interviewed using the semi-structured interview technique. As stated in the previous section, two people were from the Victorian Department of Primary Industries, two from Goulburn Murray Water Rural Water Authority, one from Local Government, one from an urban water authority. Additionally, one person was
from the Victorian Department of Sustainability and Environment, one from Parks Victoria and two from the North Central Catchment Management Authority.

Whilst two people may be employed by one agency, they have different work roles or work locations within those agencies, for example, with the officers of the Department of Primary Industries, one was based at Tatura and the other was based at Kerang. These groups had been identified in the previous phases of my research as being involved in catchment planning.

I have summarised this information in a series of tables. In looking at the tables in the previous section, the themes are further supported by my discussions with agency staff. It is important to put these numbers into context and to bring forward some of the comments and insights from this part of the research. As I was hoping to find alternatives to address catchment planning, it is important to sift through these remarks to find such possible alternatives.

In the next few sections, I have put some overall themes that can be found in the themes that were generated from data gained from the semi-structured interviews. These themes align very well with those to be found in data associated with the community survey. I have sought to place the themes into some context to clarify their meaning.

5.4.1 Involvement

The theme of involvement simply means that an agency is involved in catchment planning. Most of the participants felt that their agency was involved in catchment planning to some extent. Most felt that large parts of the community – especially urban-based people would not know how many groups would be involved in catchment planning.

They only know the groups with which they have interaction on a professional or business basis.
Its very clearly a complex range of issues and, you know, it’s a pretty large number of players involved, all … not all of which their roles are clearly known or understood (Catchment Manager, Department of Primary Industries, November 2003).

The split of the former Department of Natural Resources and Environment and the role of the North Central Catchment Management Authority was also discussed. The point was made that people would still see the former Department of Natural Resources and Environment as a major player in catchment planning. The public would not be aware of the roles of the new Department of Sustainability and Environment and Department of Primary Industries in catchment planning – because of the need to rebuild their profile in the community. The participants felt that the public also saw the North Central Catchment Management Authority as still developing its profile in the community.

Probably in terms of the catchment management authority, they haven’t got as high a profile in the community as what they deserve and need to in the long term. So perhaps their input is probably underrated, which will build up over time.

I think they see catchment management authorities as one power base. Probably not for a while but I think they do now. And the Department of Primary Industries, the Department of Sustainability and Environment and I think to some extent they see councils. (Catchment Manager, Department of Primary Industries, November 2003)
Not all participants shared this view. One person made the following comment:

….probably eighty per cent of the people don’t really know where a lot of all the authorities sit. So I think one of the first big problems for people to try and understand what the catchment planning is and who. (Engineer, Urban Water Authority, October 2003).

Several made the statement that they did not see politicians involved in catchment planning:

The other group not involved is the politicians. To me, politicians are about strategy and future development, not fixing potholes. Their absence is very notable – noticeable in the planning process. And their capacity to be involved in the future, I think, is also very limited. (Manager, Parks Victoria, November 2003)

Some perceptions of the participants talking about poor communication are as follows:

If you ask people about do we communicate effectively on anything I reckon you nearly get a blank answer. Catchment planning doesn't necessarily mean anything to everyone all the time.

I think generally rural people aren’t aware of what the role of catchment planning organisations is. I don’t think there’s a strong communication link (Planner, Local Government, October 2003).

5.4.2 Leadership

Leadership is a behaviour that has many interpretations. As discussed above, the context in this case is to provide direction in a team context rather than a hierarchical management context. Funding bodies may provide leadership by prioritising funding activities that align with their objectives at the expense of other activities. At a local level, leadership might be a team or partnership approach where several groups are addressing similar objectives in a cooperative rather than competitive approach. All of the participants felt that leadership was essential, but there was a range of opinions about where it might come from. There were many comments to the effect
that community leadership should come from within the community.

On any number of issues leadership has to come from people in the community. But in terms of our approach to catchment planning it’s very clearly you know the leadership’s coming from people locally. And you know, if you’re not getting that then you’re really going to struggle and the issues are going to not really go anywhere (Catchment Manager, Department of Primary Industries, November 2003).

Others felt that it should come from within government agencies at a range of levels. However, there was a degree of parochialism in some of the responses.

I guess they would like to see it coming from Local Government, some strong leadership from Local Government and their mayors, their representatives. (Planner, Local Government, October 2003)

So I think Department of Primary Industries should be providing a level of leadership and strong technical input but don’t necessarily need to be seen in the community as the up front, in your face people.

One body should have clear leadership. Department of Sustainability and Environment is best placed to do this as the Government should accept responsibility for such a significant issue.

I see catchment planning as pretty broad but being lead by the catchment management authorities (Manager, Parks Victoria, November 2003).

Generally there seemed to be consensus that leadership should come from the community and be underpinned or supported further by leadership from agencies at various levels of government. There was a feeling that government provided strategic leadership and direction whereas the community supplied local leadership to implement catchment planning programs. Part of any group’s desire to provide leadership was to establish whether its business is relevant to catchment planning or not. Leadership is discussed further in Chapters Six and Seven.
5.4.3 Relevance

In discussing this theme, the intention was to identify whether the participants felt that the community perceived their agency to be relevant to catchment planning. When discussing the relevance of catchment planning to rural people, some interviewees stressed the importance of economic sustainability for the long term future of the local area.

So I think that being sustainable in an economic sense is very important to them and then you do, you know, relate to the social aspects of strong communities and, you know, like education and employment and health and those sort of things. So those issues, while they are not directly seen in catchment management context, they really should be part of the overall picture.

(Catchment Manager, Department of Primary Industries, September 2003)

The common link with all of the participants was the issue of water availability and water quality. This included river health, floodplain and drainage management, water yield generated from upper catchments and rights to water. Other aspects of catchment planning were also discussed, for example, land and water management, salinity, pest plants and animals, agricultural production, wetland management.
The underlying message that ran through most of the interviews was that generally, the public does not see the relevance of catchment planning until some aspect of it impacts on them or their neighbours in a negative way.

*I would think there would be a fair percentage of people who think it’s a pain. I think there’s always those people who just want to do their own thing.*

*(Engineer, Urban Water Authority, October 2003)*

Like a lot of planning, most people do not become aware of its significance until they feel its impact. An example would be where a landholder applied to Local Government in Victoria to clear his or her land of trees as part of a redevelopment. When it is pointed out that the State of Victoria’s Native Vegetation Framework (DNREV 2000b) sets out a schedule of offset planting of a large number of new trees, some landholders have become quite indignant about this requirement.

Recently, the Shire of Loddon released a brochure informing landholders of the requirements of the Native Vegetation Retention Regulations because the landholders did not seem to understand, or accept, the regulations that were in place since 1987. If catchment planning is to be more effective, people need to have a better level of awareness about it. This is discussed in the next section.

5.4.4 Effectiveness

In the first two phases of my research, the community was asked if they believed that a catchment planning agency was effective – was it doing a good job in their eyes. I wanted to find out how well the various agencies performed in catchment planning in the eyes of the public as well as the catchment planners’ personal perceptions. An agency may be responsible for catchment planning, it may be relevant to its
business, but is it effective? Is it perceived that there is a positive change on the catchment?

There were a range of responses relating to the effectiveness of the organisations associated with the people interviewed. Some indicated that their own agency was seen by the public to be ineffective. One participant felt that the former Department of Natural Resources and Environment had a high level of effectiveness that was mirrored from other responses from participants in the semi-structured interviews.

The split of the former Department of Natural Resources and Environment into the Department of Primary Industries and Department of Sustainability and Environment has meant that these new Departments have to rebuild their profile with the community to be able to restore their former effectiveness.

*We’ve lost all that organisational structure and we have to replace it with something. So at the moment the effectiveness of the Department of Primary Industries and the Department of Sustainability and Environment is really suffering because it’s so new and it’s got to find its own grounds again.*

*(Catchment Manager, Department of Primary Industries, November 2003)*

The participants gave a range of responses about the effectiveness of catchment management authorities. The following statements were made about the North Central Catchment Management Authority:

*If I was to anticipate what the perception [awareness] of catchment management authorities and other organisations was out of ten, I’d say it’s probably three or four.*

*(Senior Manager, Catchment Management Authority, September 2003)*
Look, at a strategic level I think the catchment management authority haven’t done too badly. Not too badly. I think they have … so I think they have been reasonably effective. I don’t think they have been hugely effective but I think they have been reasonably effective given their resources. To improve, they need to improve their links with Local Government.

(Manager, Parks Victoria, November 2003)

To summarise, the participants’ view or perception was that there was much variation in the effectiveness of catchment planning. Locally, Department of Primary Industries and the local rural water authority were reasonably effective. Local Government and the North Central Catchment Management Authority were slightly less effective. If the people working for catchment planning agencies do not understand the roles of all agencies, work needs to be done to increase their understanding. Good coordination is required so that all of the organisations are conveying the same message. This is discussed in the next section.

5.4.5 Coordination

My main objective with this theme was to determine how well the various organisations worked together. I sought information on how well these groups were integrated in the implementation of catchment planning.
In the Loddon Murray part of the North Central catchment, the following groups are involved in catchment planning as shown in Table 21.

Table 21. Groups involved in Catchment Planning in Loddon Murray area.

<table>
<thead>
<tr>
<th>Level of Government</th>
<th>Group or Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth</td>
<td>Agriculture Food and Fisheries Australia Environment Australia National Action Plan for Salinity and Water Quality Second Generation Natural Heritage Trust</td>
</tr>
<tr>
<td>Victoria</td>
<td>Department of Sustainability and Environment Department of Primary Industries</td>
</tr>
<tr>
<td>Regional</td>
<td>North Central Catchment Management Authority Goulburn Murray Water Rural Water Authority</td>
</tr>
<tr>
<td>Local</td>
<td>Local Government (Shire of Loddon, Shire of Gannawarra, Shire of Campaspe, Rural City of Swan Hill) Loddon Murray Strategy Landcare</td>
</tr>
</tbody>
</table>

This does not include the non-government organisations that are working in the area, for example, the Trust for Nature and WWF Australia (formerly the Worldwide Wildlife Fund). It can be seen that many groups are involved in catchment planning. Overall, these groups have their own legislative framework and policy that they must incorporate into their operations. At the same time, these groups should work in catchment planning in a coordinated manner – including working with the local business and the farming community. To be coordinated, each group needs to be aware of its roles and responsibilities and provide good channels of communication between bodies. The community needs to be aware and understand them as well.
In the previous sections, it has already been highlighted that this understanding needs to be improved.

The responses to the questions about coordination continue to support this notion. In fact, it appears that more work needs to be done to develop full coordination. The following passages that examine looking at the perceptions of the community of coordination in catchment planning reflect this view:

In the broadest context, I’d say no. Because I don’t think they really see a strong relationship between what we do in catchment planning and what, say, Local Government would do in catchment planning.

(Catchment Manager, Department of Primary Industries, September 2003)

In some parts of catchment management it’s done very well but others have not been able to follow. And it’s partly to do with resources available and particularly to get the right people actually across overviews from one issue to another. They’re so busy on the issues that they’re trained in that seldom they have got time to put into coordinating with other issues.

(Planner, Local Government, October 2003)

I still don’t clearly understand where a lot of them sit and who’s got authority to do what. I think the idea of the whole of catchment approach is good because everyone … at least someone is overseeing the whole thing and not one little spot.

(Engineer, Urban Water Authority, October 2003)

### Issue 7

If people working within catchment planning have difficulty sorting out the roles of agencies engaged in catchment planning, why should we expect the general community to be able to understand the complexities of catchment planning?

The last point is of concern. If people working within catchment planning have difficulty sorting out the roles of
agencies engaged in catchment planning, why should we expect the general community to be able to understand the complexities of catchment planning?

In this area, most of the participants had views on how to improve coordination. The community and the catchment planners need to be educated on why groups are involved in catchment planning, what they actually do in the name of catchment planning and how they do their jobs. Whilst leadership had the highest score, a lot of the comments related to coordination in and between the organisations working in catchment planning. It is also becoming obvious that any change cannot be achieved by looking at one theme – they are all part of the package that is good catchment planning.

The main recommendation was the need for someone to take a lead in coordination and be strategic about it.

At the outset, there needs to be a strategic view or a strategic need as to why you need to do catchment planning. And if you’re very clear with respect to the needs then I’m sure that, you know the processes and the coordination will follow.

(Catchment Manager, Department of Primary Industries, September 2003)

Several participants stated that they did not have a way of improving coordination because catchment planning is complex. The people who work with agencies on catchment planning also tend to use very complex concepts that could also make coordination difficult.

The information gathered often refers to the fact that catchment planning is complicated and hard to manage. One of the reasons is that people are unaware of the issues and how those issues might impact on people and their catchment. Community education is one of the tools that could be used to
engage communities and along the way to improve the level of understanding of the issues.

5.4.6 Responsibility

The theme of responsibility looks at whether an agency should or should not have responsibilities for catchment planning. The responses were quite varied but had a major focus on water issues. These include water quality and water management, floodplain management and access to water supply and drainage. Other issues raised were pest plants (weeds) and animal management (foxes and rabbits), land and water management, salinity, biodiversity management and statutory planning.

There was also a range of opinions about who should be responsible for catchment planning. Some discussed the need for a lead agency to be responsible for catchment planning and the other agencies to act as a support role. Two participants felt that there had been a transfer of responsibility from state agencies to Local Government, especially in the pest plants and animals area.

*Why do I believe they should be responsible is basically because they all have their interest areas, their areas of expertise, their legislation that they’re bound by. They’re all subject to funding cuts and I do feel that some of the organisations have been forced to throw more responsibility back to other organisations that is in their domain.*

*(Planner, Local Government, October 2003)*
I think the catchment management authority idea is good because obviously it’s looking at the whole of catchment. My biggest concern with planning and particularly planning schemes and all that is the authorities having the, basically the guts to enforce their decisions.

(Manager, Rural Water Authority, November 2003)

The main message appears to be that agencies need to be aware of their responsibilities and roles in catchment planning. Ideally, there should be agreement and recognition of the roles and responsibilities of groups and agencies engaged in catchment planning. Furthermore, these agencies need the resources to adequately service their responsibilities. A good community education program would also ensure that the catchment community understands these concepts.

**Issue 8**
Catchment planning agencies need to be aware of their responsibilities and roles in catchment planning.

**Issue 9**
There should be agreement and recognition of the roles and responsibilities of groups and agencies engaged in catchment planning.

**Issue 10**
Agencies need the resources to adequately service their responsibilities
5.4.7 Community Engagement

Community education is one of a range of ways to engage the community. Community education was seen by all of the participants as very important. At the same time, many were not sure how it could be done effectively. Along with communication, community education is only effective if the relevant community of interest is effectively engaged. The way a community is engaged needs to be matched to the ability of that community to understand the message on offer and a range of community engagement tools may be needed.

Senior management within the Victorian Department of Primary Industries and the Department of Sustainability and Environment engaged community engagement experts within their organisations to address the need for good community engagement in 2003.

The main need was seen to be to give staff within these departments the resources to establish formal community engagement plans using the Community Engagement Workbook (DSE/DPI 2004) as a tool or resource. This project was discussed in Chapter 2.4.3. One section the workbook consists of a set of tools that includes techniques for good community education and communication generally.

I believe it was a good way to address the question of how to conduct community engagement. The main message in the workbook is to determine why you are engaging community before moving onto what the message is, how it is to be disseminated and to who in the community. The importance of good community engagement was discussed in Chapter Two and considered further in Chapter Five. Communication and community education should be part of a carefully formulated community engagement plan.
5.4.7.1 Community Education

As stated in the previous section, most participants discussed the importance of community education but were not as sure how it should be done.

One of the things that was reaffirmed to me through the regional catchment process was that people again and again kept saying that, you know … whether they called it community education, they might have called it education or information or communication or awareness or whatever. But I think there was definitely a strong feeling that there should be more investment in community education. But I’m not sure that we’re investing at an appropriate level in community education.

(Senior Manager, Catchment Management Authority, November 2003)

When analysing the interview transcripts, communication and community education were often used interchangeably. My feeling was that interviewees were indicating that the public wanted access to information through a range of media – television, radio and written material. This I have treated as community education. Communication was treated as ongoing dialogue between all stakeholders in catchment planning.

The coding scores place community education at a higher level of importance than communication. Communication is discussed in the next section. Its context is about the effectiveness of communication between agencies and with the community.

5.4.7.2 Communication

The importance of clear roles and responsibilities has already been discussed in this Chapter. Possibly the best way to develop and maintain clarity is through the use of ongoing good communication at all levels. There is a direct linkage between communication and coordination. Coordination across agencies is impossible without good communication as there
would be no way to conduct the necessary dialogue that is part and parcel of good coordination.

The view of the participants generally was that the public see communication as poorly done.

*I think some rural people believe there’s good communication but I think possibly the majority believe that communication is not so good. How you get people to know about things is very difficult if they don’t read the paper or watch the news. It’s very difficult.*

*(Planner, Local Government, October 2003)*

The last sentence is echoed in several responses from participants that pointed out that some of the community choose not to be engaged. The point was made that messages need to be developed that are simple so that people can understand or relate to the message. Several participants pointed out that the language of catchment planning is hard to comprehend by the lay person. It is prone to the over-use of jargon, acronyms and the use of complex concepts that can make comprehension difficult. An example of this is the North Central Regional Catchment Strategy (NCCMA 2003, p. 116-117) document that has a glossary of terms that is two pages long.

McCool and Guthrie (2001) proposed some process-oriented measures that are vital for successful catchment planning. Table 22 compares those measures with the themes that have evolved from my research. In this table,
Table 22. After *Seven Dimensions of Success* in McCool and Guthrie, Compared to my Research Themes. (Source after McCool and Guthrie, 2001, p. 6)

<table>
<thead>
<tr>
<th>Process-oriented Measures (McCool and Guthrie)</th>
<th>Themes from my research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Involvement</td>
</tr>
<tr>
<td>Content</td>
<td>Community education</td>
</tr>
<tr>
<td>Process</td>
<td></td>
</tr>
<tr>
<td>Interpersonal</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td>Involvement</td>
</tr>
<tr>
<td>Managers responsive</td>
<td>Responsibility</td>
</tr>
<tr>
<td>Sense of ownership</td>
<td>Coordination</td>
</tr>
<tr>
<td>Relationship building</td>
<td>Leadership</td>
</tr>
<tr>
<td>Between managers and publics</td>
<td>Communication</td>
</tr>
<tr>
<td>Among publics</td>
<td>Community education</td>
</tr>
<tr>
<td>Learning to listen</td>
<td></td>
</tr>
<tr>
<td>Interest representation</td>
<td>Communication</td>
</tr>
<tr>
<td>Being heard</td>
<td>Leadership</td>
</tr>
</tbody>
</table>

This list of characteristics reinforces the notion that catchment planning is about managing human impacts on the natural environment – not the direct management of natural resources. Given this is the case, the concept of leadership becomes more important as people look around for someone to provide them with assistance and direction. This is discussed in the next section.

5.5 Leadership and Catchment Planning

The roles of leadership and catalysing change, regional and local planning and to a lesser extent the implementation of onground works is seen to be a traditional role of regional catchment agencies which in Victoria’s case are the Catchment Management Authorities. The same roles are also put forward for local government. State Governments have the
additional roles of administering legislation, catchment management extension and community capacity building.

My experience and the literature both show the need for good leadership at all levels of catchment planning - especially state government, regional catchment management groups and Local Government. Good leadership is an essential element of effective project management and delivery.

This was very evident in the development of the second North Central Regional Catchment Strategy in 2002 and 2003. The Regional Catchment Strategy was scheduled to be completed in September 2002 and was contingent on the completion of thirteen projects that were funded under the first round of National Action Plan Foundation funding bids. These projects were mostly about asset mapping (social benchmarking, salinity audits, ecological vegetation class mapping) and Second Generation Salinity Plans. The Loddon Murray Strategy is an example.

For various reasons, most of the projects were not completed until very late in 2002. As this information was to be incorporated into the Regional Catchment Strategy, the consultants doing this work could not deliver according to agreed time-lines.

The fact that this work was so behind schedule has been put down anecdotally to a lack of leadership (pers. comm. - Manager, Department of Primary Industries, Tatura and Manager, Natural Resources, Goulburn Murray Water, Kerang) rather than an issue with good project management. A complaint at the time was that it was the lack of leadership that resulted in the jobs being behind schedule. Leadership was being treated as how well a team works together rather than whether a process of traditional straight-line or supervisor and employee management relationship is in place.
In this instance, I believe that good management was lacking and project managers were not being forced to observe dead-lines and were still paying contractors even though milestones may have not been met. There is need to have both managers and leaders

5.5.1 Leaders versus Managers

It is important to explore the description of leaders and managers and how they are applied to catchment planning. Hickman (1999) states ‘Managers wield authority; leaders apply influence’. Hickman also talks about controlling or empowering people. He emphasises that it is very important to be able to identify when and how to adopt either ‘controlling or empowering’ strategies. There was a very strong need to see both styles of leadership in the development of the North Central Regional Catchment Strategy. This did not happen as neither was deployed appropriately to achieve the desired outcome.

Collins and Porras (1998) point out that ‘managers tend to be practical, reasonable and decisive while leaders tend to be more visionary, empathetic and flexible’. This links well with my previous statement about the team working well together in a flexible and facilitative way rather than by a somewhat more rigid supervisor and employee relationship. In regard to catchment planning and influencing people, leaders tend to be able to manage the complex interrelationships between social, environmental and economic issues better than the person with ‘manager’ attributes.

Prior to 2004, the community structures that make up the North Central Catchment Management Authority were very hierarchical in nature. The reporting relationships between agencies and the Catchment Management Authority were similar where agencies reported through a range of
implementation committees to the North Central Catchment Management Authority Board. This process tended to be an iterative process with reduced opportunities for innovation and suggests an emphasis on control rather than leadership.

Danter, Griest et al. (2000) introduce a concept in ecosystem planning that they call *transformational leadership*. They define leadership as:

*A process to establish direction, align people, and motivate and inspire with the ultimate goal of producing movement or change.*

This is not a traditional leadership concept where there is one person providing leadership. This type of leadership could be described as a behaviour rather than a process.

These authors also compare management and leadership.

Figure 14 shows the importance of leadership compared to management:

![Figure 14. Leadership and Ecosystem Management (Danter, Griest et al. (2000 p. 545))](image)

The labels in this diagram refer to ecosystem management. Given that catchments are a complex of ecosystems, the model is still very applicable. The diagram indicates that leadership as a more effective approach to
ecosystem management over time. Transformational leadership is about facilitating positive change in an organisation. This style of leadership is what I prefer to call facilitative leadership. Danter et al. (2000) transfer business management concepts into catchment management. It is very important that business management principles are adopted as good catchment planning as they can clarify roles and responsibilities of the stakeholders involved and establish proven management processes as can be seen in the following example.

The Chief Executive Officer of the Mallee Catchment Management Authority spoke to a group of officers of the former Victorian Government Department of Natural Resources and Environment about the Mallee Regional Catchment Strategy in December 2002. A feature of his presentation was the clear delineation of roles and responsibilities. Under his structure, the role of the implementation committees had changed from essentially a gate-keeper group to a role that was a sub-committee of the Board. There has been a change from monitoring on-ground activities to a more strategic role. He also spoke of McKinsey’s ‘7S Model’ and the need to set up the Mallee Catchment Management Authority as a business rather than just a quasi non-government organisation. Hickman (1990) highlights that this model is a management tool that is used across the world by major corporations to assist with their business planning.

The 7S model has hard and soft elements. Hickman points out that the soft elements deal with the culture of an organisation. These elements are staff, skills, style and shared values. The hard managerial elements are strategy, structure and systems. The Chief Executive Officer for the Mallee Catchment Management Authority spoke at length about getting the people who were involved in his organisation to
develop shared goals. From the outside, this Catchment Management Authority was trying to move from a managerial or hierarchical culture to a culture that is based on leadership behaviours as opposed to managerial behaviours.

This different approach can be seen in the different approaches taken to catchment planning between the North Central and Mallee Catchment Management Authorities. At that point in time, the Mallee Catchment Management Authority employed just fewer than 20 staff at the end of 2002; whilst the North Central Catchment Management Authority employed over 50 staff. My observation was that the Mallee Catchment Management Authority had decided to work on the hard managerial elements – strategy, structure and systems, whereas the North Central Catchment Management Authority continued to work on the staff, skills and structure rather than strategy and shared values.

In summary, the Mallee Catchment Management Authority has moved to a strategic footing and the North Central Catchment Management Authority is totally on an operational footing from the view of McKinsey’s 7’s model. In late 2003, the North Central Catchment Management Authority underwent a major internal business restructure to move to a better business management model. The adoption of good business management makes it easier to demonstrate that resources are being used wisely. This point is discussed in the next section.

In 2004, the Chief Executive Officer of the Mallee Catchment Management Authority accepted the same role with the North Central Catchment Management Authority and immediately set about implementing a similar framework with the latter body.
5.6 Final Themes for the Involvement of People in Catchment Planning

In comparing McCool and Guthrie’s (2001) process-oriented measures against my themes, there is a case to further reduce or rationalise my themes as some do have significant overlaps. Some overlaps have already been discussed. This comparison can be seen graphically in Table 23.

The points below the headings in the first column clarify the intent or meaning of my final themes. These themes reconcile well with the keys to success in the management of watersheds in the United States that are put forward by Schuett et al. (2001). Their research identified ten keys to success—collaboration or participation by stakeholders, consistent funding, education of public, coordination, on-the-ground projects, clearly identified problems, following through on goals, leadership, government buy-in and adoption of long-range vision.
Table 23. Rationalisation of Themes and Process-oriented Measures
(McCool and Guthrie 2001 p. 314)

<table>
<thead>
<tr>
<th>Initial Themes from my research</th>
<th>My Final Themes</th>
<th>Process-oriented Measures (McCool and Guthrie)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership Coordination</td>
<td>Leadership&lt;br&gt;Facilitative leadership&lt;br&gt;Central point for cross agency coordination (executive leadership)&lt;br&gt;All stakeholders working with each other</td>
<td>Relationship building</td>
</tr>
<tr>
<td>Responsibility Involvement</td>
<td>Responsibility&lt;br&gt;Clearly understood roles and responsibilities for all stakeholders&lt;br&gt;All stakeholders involved are recognised&lt;br&gt;All relevant stakeholders are participating</td>
<td>Responsibility</td>
</tr>
<tr>
<td>Relevance Effectiveness</td>
<td>Effectiveness&lt;br&gt;All stakeholders agree with catchment planning activities&lt;br&gt;All activities are seen as good value&lt;br&gt;All activities are technically rigorous</td>
<td>Interest representation</td>
</tr>
<tr>
<td>Community education Communication</td>
<td>Community Engagement&lt;br&gt;Relevant stakeholders understand issues&lt;br&gt;Communication plans are in place and monitored&lt;br&gt;Community education projects are effective and targeted</td>
<td>Learning</td>
</tr>
</tbody>
</table>

The same authors (Schuett et al. 2001) quote work by others that puts forward barriers to good watershed planning – lack of time, indifference to the issue and the fear of losing control of land decisions. The four rationalised or final themes also reconcile well with the elements of successful planning put forward by Gregory (2001) that are discussed in Chapter One.
He indicates that planning must involve community participation and ownership, be technically robust and good value for money. From this point onward, the four rationalised themes will be adopted for further consideration in this chapter. To further support the findings from my social research, a case study has been used to examine how the four themes might be applied to a real situation.

5.7 Case Study - Introduction

The development of the Loddon Murray Land and Water Management Strategy (Loddon Murray Strategy) has been used as a case study as the final phase of my research. My close association with this Strategy means that some of my conclusions can be viewed as generalisations that may require validation from a scientific approach. Some of the points cannot be supported with total confidence with the evidence that is available. Evans and Gruba (2002) stress the importance of knowing how accurate statements are - given my level of involvement in the case study. The case study is a good way to test the four themes that have evolved through my research – leadership, responsibility, effectiveness and community engagement.

A less detailed analysis of the North Central Regional Catchment Strategy is also undertaken to allow a comparison between the development of that strategy and the Loddon Murray Strategy.

It is important to discuss the relationship between the development of my research and the development of the Loddon Murray Strategy. Table 24 lists the methodology of both projects and points out the alignments or linkages between the two different pieces of work.
Table 24. Research Methodology compared to Loddon Murray process.

<table>
<thead>
<tr>
<th>Research Methodology in this study</th>
<th>Loddon Murray Strategy Process</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Workshops</td>
<td>Community task groups (100 people at 15 hrs/person, November 2001)</td>
<td>Scoping project and identifying early issues</td>
</tr>
<tr>
<td>Scope Questions for community survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community survey (November 2001)</td>
<td>Discussion Paper generated by 9 task groups (January 2003)</td>
<td>Research with people. Issues raised in community survey were incorporated into discussions</td>
</tr>
<tr>
<td>Review of current knowledge (completed December 2003)</td>
<td>Sign off discussion papers by Loddon Murray Forum (February 2002)</td>
<td>Review process. Information from literature review also incorporated into other process.</td>
</tr>
<tr>
<td></td>
<td>Incorporate discussion papers in First Draft (April 2002)</td>
<td></td>
</tr>
<tr>
<td>Scope questions (March 2002)</td>
<td>Comment by theme groups (May 2002)</td>
<td>Task groups issues consolidated in 5 themes</td>
</tr>
<tr>
<td>Structured interviews (May and June 2003)</td>
<td></td>
<td>Ground truthing – review process</td>
</tr>
<tr>
<td>Review/develop existing catchment planning (completed August 2004)</td>
<td>Draft strategy to Government (June 2002)</td>
<td>Sign off</td>
</tr>
<tr>
<td></td>
<td>Draft strategy comment by wider community (August 2002)</td>
<td>Review process</td>
</tr>
</tbody>
</table>

The two processes were complementary and informed each other during their implementation. This feature reinforces the concept of applied research that is fundamental to this Doctor of Technology project.

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I was very closely involved in the development of the Loddon Murray Strategy. The research into literature, especially in the social science area was used to give this Strategy a good balance across the three dimensions that are often quoted in catchment management – the social, environmental and economic dimensions.

The Doctor of Technology exegesis is based on the documentation of my close involvement of another process and uses that knowledge and experience to improve the skills and knowledge of the candidate. I have a long association with catchment planning processes. This knowledge has been enhanced through my research for my academic project and my work developing the Loddon Murray Strategy and its implementation as discussed in detail in Section 4.3.

One of the themes adopted as part of the Strategy is social capacity. I was responsible for most of the input into this theme. The area of social capacity would not have received the recognition that it has if my study had not been underway and the group developing the Strategy knew the views of the local community.

At the end of 2001, several strategies commenced development in the North Central catchment. Two are particularly relevant to the Loddon Murray area – the Loddon Murray Strategy and the North Central Regional Catchment Strategy. Their development was very dissimilar in approach from a community engagement context.

5.7.1 Two Strategies developed in the Loddon Murray Region.

The two strategies were developed in different directions due to changes in guidelines produced by the Victorian Government. The guidelines underwent a major revision in 2002 and were just released as the Loddon Murray Land and
Water Management Strategy\textsuperscript{23} was completed and submitted to Government. The Loddon Murray Strategy was developed using guidelines that were developed for the development of second generation salinity management plans that were released in late 2000 (DNREV 2000a). The upgraded guidelines for development of Regional Catchment Strategies, released in mid 2002 (VCMC 2001), were used to develop the North Central Regional Catchment Strategy that was now about 12 months behind schedule.

The major difference is that the Regional Catchment Strategy was developed using an asset-based approach rather than a threat management approach. One of my concerns is with using assets as a basis for management. This tends to reduce the ability to influence human impacts, in other words, the role of people or public participation in the development and implementation of the Regional Catchment Strategy. It is also difficult to reconcile the asset-based approach with the four themes that I have identified. All four themes emphasise the importance of human intervention in good catchment planning – good leadership, direction or management, accepted responsibility and a high level of community involvement. When all three are present, catchment planning should be effective. This point is revisited later in this chapter.

The Loddon Murray Strategy was developed using a people or community-based approach. An underlying assumption was that if there were no people that our natural resources would be resilient enough to sustain themselves as long as their environmental requirements were met. A second assumption was that although there is always a need for more information that there was enough experience and knowledge at hand to understand the natural environment. It was more important to re-engage the Loddon Murray community in good

\textsuperscript{23} Referred to as the Loddon Murray Strategy in the remainder of this thesis
catchment planning than to commence immediate and detailed biophysical assessment.

5.7.2 Loddon Murray Land and Water Strategy

In July 2002, the four salinity or land and water management plans that were underway in the Loddon Murray region were reviewed. The review resulted in the development of the Loddon Murray Strategy. The process for the development of the Strategy is outlined in detail in Chapter Two. The implementation of the plans was funded in a partnership between the community, and state and Commonwealth governments. Any investment by the Commonwealth Government had to be matched dollar for dollar by the State Government.

Commonwealth funding was sought by submitting bids under appropriate Commonwealth programs. In the latter part of the 1990’s and 2000, the main source of Commonwealth funding was the Natural Heritage Trust under its Murray Darling 2001 and National Landcare programs. Bids were assessed regionally and then at a State level by assessment panels for their merits and alignment with local and state priorities and then forwarded to the Commonwealth Government for its consideration. The regional assessment panel in the Loddon Murray region was facilitated and supported by the North Central Catchment Management Authority.
5.7.3 Development of the strategy

In September, 2000, the Victorian Government requested that all land and water management plans be reviewed and released guidelines for this process (DNREV 2000a) to ensure a consistent approach. On 10 October 2000, the Australian Prime Minister John Howard (APM, 2000) issued a press release to launch the National Action Plan for Salinity and Water Quality that had an allocation of seven hundred million dollars over ten years.

The National Action Plan for Salinity and Water Quality (AFFA 2000b) discussed using practical remedies to rehabilitate waterways, improve native vegetation, and the use of engineering works to manage salinity and to look at managing land and water resources to manage salinity and water quality.

In order to gain funding under the National Action Plan, the Commonwealth Government developed bilateral agreements between itself and the State Government. These agreements were based on regional catchment strategies that were accredited by the Commonwealth Government. As far as the review of salinity plans were concerned, there were now two drivers for reform - the State Government and the Commonwealth Government.

In the North Central Catchment, the southern part of the catchment is higher in elevation and has a small area under irrigation from local streams and more than half of the northern part of the catchment is irrigated land. A complex irrigation infrastructure delivers water that comes from two main areas. Irrigation water is sourced from the Snowy Mountains Scheme in south-west New South Wales (the state immediately north of the State of Victoria) and the Goulburn River system in north east Victoria. A smaller volume of
irrigation water is also generated by the Loddon River catchment. In terms of catchment planning, it has been found to be very difficult to use one strategy to manage the whole catchment.

The North Central Catchment Management Authority found it appropriate to produce a dryland focused land and water management strategy for the southern part of the catchment and an irrigation focussed land and water management strategy for the north part. Both of these strategies are considered as action plans under the Regional Catchment Strategy and provide the detail to underpin the new regional catchment strategy. The irrigation strategy was the Loddon Murray Land and Water Management Strategy (Turner and Shanahan 2001).

It is useful to examine the development of the Loddon Murray Strategy in light of the points raised by the community survey. My conclusions from the community survey were that the community raised the following points:

➢ Better coordination was needed between the groups involved in catchment planning.

➢ Communication and education about catchment management has been poorly done.

Implicit in the above points is the fact that the community wants to be informed about what is going on in its local area. These data from my community survey were available when the early planning of how we were going to review the existing land and water management plans was commenced. The need to actively involve the community in new planning was seen as paramount – as can be seen in the process outlined in the next section.
5.7.4 Process to involve Community in the Loddon Murray Strategy

The development of the Loddon Murray Strategy started in November 2001. The Loddon Murray Forum was a group that consisted of

- the chairpersons of the implementation committees of the four previous land and water management plans working in the Loddon Murray region and
- senior staff from the Department of Natural Resources and Environment and Goulburn Murray Water.

This group established a steering committee role for this project. The steering committee identified people that had demonstrated an interest and had some skills or experience in the various aspects of land and water management. In late November 2001, over 100 community people with the relevant skills and experience were invited to a dinner to launch the project. Community members were briefed on the expectations of the Loddon Murray Forum and the task at hand. The task was the delivery of a new land and water strategy to the Victorian Government by 30 June 2002.

Wilkinson and Barr (1993) point out that each of the four implementation groups that had been established in the Loddon Murray area needed more than 70 meetings over five or more years to complete their first salinity management plans. The Victorian Government imposed a time line that meant that the region had seven months to review and update its existing land and water management plans.

Initial research for my project had indicated that the management of the social issues involved with land and water management was an important and emerging issue. Formal inquiries by the Commonwealth Government such as 'Co-ordinating Catchment Management - Inquiry into Catchment Management' (Australia 2000) and work carried out on behalf
of the Victorian Government (DNREV 2001) on social capacity in rural Victoria all point to the importance of addressing the social issues associated with catchment management.

Another emerging issue was the management of land for its biological diversity or biodiversity values. In reference to rural landscapes, the document “Victoria's Biodiversity - Directions in Management” (DNREV 1997a, p. 11) has a key management approach requiring that catchment management is 'integrated into planning frameworks to achieve sustainable development of natural resource-based industries and the conservation of biodiversity' within the State of Victoria. These planning frameworks include natural resource management planning undertaken by regional management authorities and local government.

In this context where there was now an increasing need to address the management of social, biodiversity and economic issues, the Loddon Murray Forum decided to set up task groups to address the issues that are shown in Table 24. I have grouped the issues under the three areas discussed in the previous sentence.

Table 25. Initial Issues addressed by Task Groups of the Loddon Murray Forum (Turner and Shanahan, 2001, p. 33)

<table>
<thead>
<tr>
<th>Social Issues</th>
<th>Economic Issues</th>
<th>Environment Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural heritage</td>
<td>High profit land use</td>
<td>Flood and drainage management</td>
</tr>
<tr>
<td>Social impacts</td>
<td>Salt disposal</td>
<td>Environment</td>
</tr>
<tr>
<td>Prime adjustment zones</td>
<td>Irrigation infrastructure</td>
<td>Water quality - nutrients, salinity</td>
</tr>
</tbody>
</table>

The Project Management Team for the Loddon Murray Strategy was charged with the coordination of the community task groups, the development of the Strategy document and the coordination of community input. The team felt that the issues outlined in Table 25 would not be meaningful to community people. Headings such as 'high profit land use'
sounded elitist and ‘prime adjustment zones’ had overtones associated with the overuse of jargon. Some of the other headings were obsolete in terms of current policy at that time in the State and Commonwealth Government and the information that I was seeing in the literature.

At the project management team’s suggestion, the final issues assigned to task groups that were adopted by the Loddon Murray Forum can be seen in Table 26 and have been grouped as social, economic and environmental issues.

Table 26. 1 Final Task Groups that Develop the Loddon Murray Land and Water Management Strategy (Turner and Shanahan 2001)

<table>
<thead>
<tr>
<th>Social Issues</th>
<th>Economic Issues</th>
<th>Environment Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural and historic heritage</td>
<td>Land management implementation</td>
<td>Surface water management</td>
</tr>
<tr>
<td>Local Government</td>
<td>Regional development</td>
<td>Water policy</td>
</tr>
<tr>
<td>Future land use</td>
<td>Corporate governance</td>
<td>Biodiversity</td>
</tr>
</tbody>
</table>

5.7.5 Process to establish community task groups

The Loddon Murray Forum were supplied with a list of recommended people for the community task groups by the Project Management Team. The team examined the membership of the four previous land and water management plans, the membership of Loddon Murray 2000 Plus and Landcare groups within the Loddon Murray region. The major criterion for the people being approached was that their skills were being sought, not where they lived. The representation of the implementation groups of the previous four land and water management plans was by and large geographically based. The representation on the new task groups was based on skills with the expectation that all people would add value to the task at hand.

In August, 2001, the Project Management Team wrote to over 100 members of the community seeking their assistance
in the development of the new land and water management strategy.

The letter outlined the following points:

- The recognition that the recipient of the letter had the appropriate level of expertise to help their task group with its contribution to the development of the Strategy
- Why the strategy was being developed
- The process being used to develop the strategy through the use of issues-based task groups
- A list of the issues being addressed by those task groups
- The time commitments being sought, stressing that there was an end point.

Over 95% of the people that were approached agreed to be involved. These people were present at the launch of the development of the strategy was held at Kerang discussed at the start of this Section. In total, 110 community and agency people attended this function. The launch was held to further brief all participants on the task at hand, what was required of them and the process to complete the task.

At the launch, the invitees were asked to sit in the task groups that had been organised by the Project Management Team in consultation with the Loddon Murray Forum. They were then given the chance to change groups if they felt they had more to offer in a different area. Then each group appointed a group leader. Several people did change groups for undisclosed reasons.

The task groups were then given a presentation to outline the tasks required, the roles and responsibilities of the Loddon Murray Forum, the Project Management Team, task group leaders and task group members and the time-lines involved in the project. Due to very tight time-lines imposed from the Commonwealth and state governments, a draft strategy had to be with Victorian Government by 30 June 2002. In that time,
the community task groups were asked to come together and develop an issues paper by Christmas 2001. After that, the Project Management Team in conjunction with the Loddon Murray Forum would develop a draft paper by April 2002 for circulation and then submit a draft to the Victorian Government by 30 June 2002.

5.7.6 Analysis of Process to appoint Community Task Group Members

Equity or justice are words that come to mind when trying to determine who should be involved in a public participation process. According to the literature, both methods are valid and have different merits. Heathcote (1998) suggests that there are three ways to identify interested people:

a) volunteers or those that express opposition,

b) the use of third parties to identify people who are known to have an interest in a given area or issue or

c) the use of agency staff to identify interested participants.

The members of the four previous implementation groups were generally appointed by a process that involved (b) and (c). Special interest groups, for example, the Victorian Farmers’ Federation or environmental groups, were approached to nominate people for membership. Agency staff approached people where a person from a specific geographic area was required. During my time working with these groups, the second way (b) was used to replace members who resigned from the implementation group. Group members would approach people to join the implementation group.

The community members on the Kerang Lakes Area Working Group (the precursor to the Kerang-Swan Hill Salinity Management Plan Implementation Group) were appointed by formal secret ballot (Wilkinson and Barr 1993). The Tragowel
Plains Working Group (precursor to the Tragowel Plains Salinity Management Plan) was established in a different way. The project officers identified community leaders in that area and invited them to a meeting and then called for nominations to join the working group (Wilkinson and Barr 1993).

Public meetings are one way to find volunteers. This is seen by the public to be a fair and open process. As Heathcote (1998) points out, this can be chaotic when it comes to electing representatives. The other risk is no guarantee that the elected person can or will participate. Another process is to let people apply to be a member of a group. During my time with these groups, from 1995 to 2002, none of the groups used public meeting for this purpose due to their propensity to become out of control.

The Tragowel Plains process was a good example of (c) as processes were put in place to ensure that the right people were nominated to the group (Wilkinson and Barr 1993). This allows better control over the number of people who apply and the number from various interest groups. Whilst this process is more manageable, it can be seen to be biased or preferential (Heathcote 1998).

As discussed above, the third way (c) is that agency officers approach interested people. This process needs to be carefully managed, as again there are questions of equity. This process was used to set up the members of the community task groups. The Loddon Murray Forum had the final say on who was to be approached to participate in the process. The Forum was aware of the skills of all people who were approached to join task groups.

To assist in the management of the large number of people and groups involved in the process, agency staff were asked to provide support to the task groups in terms of sourcing requested information and providing administrative
support, for example, notifications of meetings and the provision of food. Two of the task groups were addressing issues that did not feature in the previous round of land and water management planning. They were Cultural and Historic Heritage and Community Capacity. Because of my study and my personal and professional need to address the two areas more comprehensively, I was closely involved with these two task groups from the outset.

Glicken (2000) points out that managers must provide certain information if they are going to maximise public participation. The public must know the purpose of the exercise. Are the people involved appropriate for the task? Do they have enough accurate information to complete the task and is the process fully documented? The actions outlined above to appoint task groups meet all of these points in relation to the development of the Loddon Murray Strategy. In relation to having the appropriate people, a range of stakeholders was engaged. These stakeholders included representatives from Local Government, State Government agencies, the Victorian Farmers Federation, Rural and Urban Water Authorities, Mid-Loddon Tree Group, the dairy industry, the horticultural industry, the cropping industry and other groups.

Given the scope of the Strategy, there were many issues. By using issue-based community task groups, the Loddon Murray Forum attempted to cover as many issues as possible. Glicken (2000) points out that the term 'stakeholder' and the process of public participation are both time, site and issue specific. The use of a large number of people was seen to address site and issue and use known information to attempt to predict issues that may arise in the future.

During the October 2001 launch, all participants in the task groups were asked to pinpoint their homes on a map. At
the end of the meeting, the dots on the map were evenly spread over the entire Loddon Murray region with no obvious clustering of dots related to task group issues. Although the intention was to develop issues-based groups, geographic areas were also well represented during this process.

5.7.7 Development of Issues Papers

Task groups started to meet in late November 2001 and completed the first phase of their work by early January 2001. In this time, the groups had gone through the stages of preliminary brainstorming, review of previous land and water management programs and other programs underway and then produced their prioritised outcomes, and actions or outputs to achieve them. All of these priorities were collated and incorporated into a discussion paper that was presented to the Loddon Murray Forum (Turner and Shanahan, 2002).

In developing the discussion paper, it was seen that there were recurring themes across the work produced by the task groups. Whilst there were over ninety concerns raised, the issues fell into five themes.
The final themes that were adopted by the Loddon Murray Forum are listed in Table 27:

<table>
<thead>
<tr>
<th>Original Task Groups</th>
<th>Final Themes in Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity</td>
<td>Biodiversity enhancement</td>
</tr>
<tr>
<td>Land management implementation</td>
<td>Land management</td>
</tr>
<tr>
<td>Future land use</td>
<td></td>
</tr>
<tr>
<td>Regional development</td>
<td>Planning/Development</td>
</tr>
<tr>
<td>Local Government</td>
<td></td>
</tr>
<tr>
<td>Corporate governance</td>
<td></td>
</tr>
<tr>
<td>Cultural and historic heritage</td>
<td>Social capacity</td>
</tr>
<tr>
<td>Water policy</td>
<td>Water management</td>
</tr>
<tr>
<td>Surface water management</td>
<td></td>
</tr>
</tbody>
</table>

All of the discussion papers were coded to identify any recurring themes. This work supported the selection of the themes in Table 26. The work of the task groups was also recognised in that they had produced high, medium and low priorities for their issues and action as part of their work. Most of the task groups higher priorities are now the major outcomes outlined in the Loddon Murray Strategy.

The feedback from community about this process was very positive. Many people were keen to know the amount of time they were committing to at the start of the process. These participants were advised that the expectation was that the groups would meet three or four times between the launch and Christmas 2001. This information was important because many of these people were already busy and did not have the time to commit to a process that consumed large amounts of their time. They had been to the long meetings that were held by the previous implementation groups that could go for four or five hours on a monthly basis. This was because they were considering all of the issues relevant to their area working in a
geographic area rather than by a specific group of issues, for example, surface water management.

Most of the task group meetings lasted two hours or less - except for the group considering previous land and water plans that still carried their old habits with them. The reason for the short meetings was that the participants understood the issues involved and knew either how to address them or where to find good information to inform decisions at their next meeting.

An even more important outcome was the fact that the many of the participants were keen to carry on to the next stage of implementation. I received constant enquiries during the time after the submission of the draft plan to Government and the point where funding was received and implementation could proceed.

5.7.8 My Involvement in the Development of Loddon Murray Strategy Themes

The Project Management Team divided the themes as we started to develop the documentation of the Strategy. I have worked with the Biodiversity, Social Capacity and Planning/Development issues for a long period of time and worked with these themes. Tim Shanahan, the other member of the team was employed by the local rural water authority – Goulburn-Murray Water. He was an implementation officer with the Kerang Swan Hill for seven years and had a good understanding of surface water management, land management, water policy and future land use and worked with these themes.

There was a large amount of historic information could be carried over from the previous land and water plans and current programs. There were new areas of land and water management that needed closer attention – biodiversity and social issues.
Whilst there were biodiversity programs associated with those plans, they needed review as the concept of biodiversity had become more sophisticated in recent times with the development of better mapping and the implementation of the Victorian Government Biodiversity Strategy (DNREV 1997a) and the North Central Native Vegetation Management Framework (NCCMA 2002). Biological diversity (bioversity) planning has changed from the micro-scale of previous land and water management plans to larger landscape scale programs, for example the biodiversity action plans that are underway in northern Victoria.

The main driver in the Planning/Development theme was to increase the importance of Local Government in catchment planning. The importance of Local Government was outlined in the Commonwealth Government’s enquiry into the coordination of catchment management (Australia 2000). There was a need to increase the role with Local Government by ensuring it had the capacity to enforce compliance of its statutory planning scheme and allow it access to natural resource information systems that were held by government agencies. This access would mean that Local Government would have access to the same information that agencies were using for their catchment planning activities.

My involvement with the biodiversity theme was mostly as a coordinator between the group and the Loddon Murray Forum. My major part was to prepare the part of that strategy and its documentation that considered biodiversity issues.

My involvement in the Social Capacity theme was more intensive. This theme occurred as the result of the consideration of discussion papers that were produced by me and amended and signed off by the Cultural and Historic Heritage and the Social Capacity task groups. The former task group ended up producing two discussion papers (Turner and
Shanahan, 2002, p. 75-86) that were amalgamated together - a paper addressing issues pertaining to indigenous people and then a paper that addressed cultural issues relating to the wider community.

The Cultural and Historic Heritage task group decided to do all of their work in a workshop and set aside a day to do this work. Whilst the group had nine members (excluding myself) only three attended the workshop. The workshop members had decided to manage the day in two halves - indigenous issues in the morning and other issues in the afternoon - hence the two discussion papers. The group documented its issues and how they might be addressed and then prioritised them. I then developed a discussion paper for both. The paper relating to wider community was then referred to the group with minimal changes.

I collaborated with an Indigenous Liaison Officer who worked with the former Department of Natural Resources and Environment (VIC) on a discussion paper that related to indigenous people. This person was also a member of the Cultural and Historic Heritage Task Group. The paper and text were reworked to describe the management of the legal frameworks and the social issues that relate to indigenous culture. This paper was then circulated to local indigenous groups and Aboriginal Cooperatives for comment.

A meeting was held with senior members of the local aboriginal cooperative and we worked through the discussion paper produced for indigenous culture and incorporated the changes that members of the cooperative had requested. This paper was then used to outline indigenous issues in the final Strategy. A major challenge was to work through the complex relationships that exist within the indigenous community and between those groups and the wider community and
Government and to also find a way to be inclusive of indigenous issues in the Strategy.

The Social Capacity task group met five times to consider their issues. 16 people were originally on this group, including four men. Two of the men changed groups and the other two stopped attending meetings. I was asked to attend the second meeting of the group because they were having difficulty in finding consensus. I found this unsettling because the group had produced a lot of work from a short discussion on their first night and appeared to be working well together.

I made some enquiries and found that preconceptions from the previous land and water plans were causing the tension. There were new people on the group who had a background in social welfare and community health. When asked to put forward their ideas, the people who had a background in land and water planning felt that some of the social welfare issues were not relevant in a catchment planning context. It was decided that the group needed to engage an impartial external facilitator to run these meetings to ensure that the group could achieve its goals - one of them being to address social issues. One of the requirements under the National Action Plan for Salinity and Water Quality (Howard 2000) was to address social issues - especially social capacity issues such as the management of change and increasing social sustainability.

As previously stated, I then developed a discussion paper on behalf of the group. The group then comprehensively reviewed this paper over two more meetings before reaching consensus.

I found that there was an issue of language in both of the groups. Being used to the bureaucratic jargon associated with land and water management, I was constantly being challenged by the two groups. For example, when I spoke
about marketing a concept, I was advised that a completed product is *marketed*, not a developmental process or a concept. In their view, the opportunity to comment was being provided, not the sale of a completed product.

As a primary focus of my project is to examine catchment planning processes, the actual content on the Loddon Murray Strategy will not receive much discussion. The process in terms of community participation has already been outlined and the fact that public participation was initiated very early in the process. This resulted in a community-driven ‘bottom-up’ process rather than a ‘top-down’ process where the community is merely consulted. It is important to discuss the government processes that were operating alongside the development of the Strategy.

5.7.9 Guidelines to Produce Strategies

The Project Management Team for the Loddon Murray Strategy had to work with three different sets of guidelines in the development of the document for the Strategy. The Victorian and Commonwealth Government developed the guidelines. Because the Strategy was to be incorporated into strategies at higher levels, it was essential that the other guidelines were observed. The guidelines related to the development of action plans and the development of regional catchment strategies. The Loddon Murray Strategy is an action plan under the North Central Regional Catchment Strategy. The main guidelines used were the first set of guidelines for the development of second generation salinity management plans (VCMC 2001).

In October 2000, the Victorian Government had released guidelines for the review of salinity management plans and the development of Second Generation Salinity Management Plans that were to be completed by September 2001. With the release of National Action Plan for Salinity and Water Quality
by the Prime Minister of Australia, John Howard in May 2001, the September 2001 deadline was abandoned. Regional catchment bodies were asked by the Victorian and Commonwealth Governments to produce accredited regional catchment strategies as part of their bilateral agreements under the Commonwealth plan. In October 2001, the Victorian Government released another document setting out guidelines for the review and renewal of regional catchment strategies which requested that the first draft of the new strategy be completed as a draft by June 2002 (VCMC 2002).

To assist with the review and renewal of regional catchment strategies, foundation bids were set up in the first year of the National Action Plan for Salinity and Water Quality. This was to enable groups to carry out the work needed to meet the requirements of the various guidelines that were in place to produce new regional catchment strategies. The National Action Plan for Salinity and Water Quality Office released guidelines for foundation funding bids in August 2001 (NAPSWQ 2000). As the Loddon Murray Strategy was funded as one of 18 foundation projects under the North Central Catchment Management Regional Catchment Strategy, both the Commonwealth and Victorian Government guidelines had to be incorporated into the local strategy by the Project Management Team.

5.7.10 Production of the Loddon Murray Strategy Document

As stated in the previous section (5.7.9), a draft document had to be submitted to the Victorian Government by 30 June 2002. In order to be able to meet the deadline, the production of the document for the project was set up along project management guidelines at the commencement of the process using Microsoft Project 98. (Microsoft 1990-97). This allowed the Project Management Team to factor in time
allocations for each phase of the project. In addition, this gave all of the participants a picture of how we were progressing, making it easy to reinforce the short timelines at various points in time during the process.

5.7.11 Obtaining Agreement from Major Stakeholders

In retrospect, developing the Loddon Murray Land and Water Management Strategy was relatively easy. Receiving the sanction of the Victorian Government for the Strategy to proceed was much more difficult. After being endorsed by the Loddon Murray Forum and the North Central Catchment Management Authority Board, the next point of sign-off was with the Department of Sustainability and Environment and Department of Primary Industries in Victoria. The Department of Sustainability and Environment has lead responsibility for catchment planning on behalf of the State of Victoria.

The Catchment and Water Division (the Water Sector Group as of 2005) of the Victorian Department of Sustainability and Environment had primary responsibility for catchment management in the State through its Sustainable Irrigated Agricultural Land program.

The Loddon Murray Strategy was submitted in draft form to the Victorian government on schedule on 30 June 2002. In my view, the initial response was quite negative. It was felt that the document was too focussed on social issues that were not perceived to be part of land and water management. For example, whilst retaining young people in the Loddon Murray area was important to long term sustainability in the view of the participants of the Loddon Murray Strategy (Turner and Shanahan 2001 p. 59), this was not seen as an area that should be addressed by the Victorian Government according to senior managers within its Department of Sustainability and Environment.
Other concerns related to the lack of economic data and the need to address Catchment and Water's Guidelines for Second Generation Salinity Management Plans (VCMC 2001). These guidelines asked for economic justification for the actions or outcomes set out in the strategy and their cost.

The Strategy was written to the guidelines that were available that were produced by the Commonwealth Government Regional Application Guidelines for 1st Year National Action Plan for Salinity and Water Quality Funding Process (NAPSWQ 2001) and the document outlined in the previous paragraph that was produced by the Catchment and Water within the Department of Sustainability and Environment in 2000. The same group released another document outlining guidelines for the review of Regional Catchment Strategies in August 2002 entitled 'Guidelines for Review and Renewal of Regional Catchment Strategies' (VCMC 2002). These new guidelines were released after the Loddon Murray Strategy dead-line. The negative response to the Strategy ultimately resulted in the production of different versions of the Strategy to address the needs of different groups.
The Strategy has essentially three audiences or groups of stakeholders:

- The Commonwealth Government through the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust
- The Victorian State Government via the Catchment and Water Division of the Department of Sustainability and Environment and
- The local Loddon Murray community.

I was very concerned that if we compromised the Strategy too much in the eyes of the community that we would spring Solomon's Trap.

Sarkissian *et al.* (1999 p. 24) describes the Trap in the following steps:

- On behalf of the community an officer seeks the views of the community
- The officer then works through these views and then reconciles them against his or her views, any other relevant information and then seeks a ‘best fit’.
- The officer then announces his decisions to all parties concerned. Some feel that their important issues are not adequately addressed and almost feel betrayed.
- These people decide the whole decision is unacceptable and prepare to oppose it.
- The officer then spends a lot of time recovering ground. In the end, the whole project may have to be restarted due to the frustration and anger present in the community.

When there were nearly 100 people involved in the development of the Strategy, this was a major concern. We had developed a Strategy that was worked on from the bottom up by the community. It was recognised early that the tools that were being asked for by government were not present, for
example, risk management protocols detailing assets being protected, detailed cost benefit analysis and the science being used to underpin our logic. Whilst I knew that the Strategy was incomplete in this regard, this was more to do with not meeting the requirements of the government rather than further input from the Loddon Murray community.

Rhoades (1997) also talks about people turning away from a program if their expectations were not adequately addressed. It was generally felt that it was wiser to have the community participating in the Strategy and to answer the technical questions later. It would be much more difficult to do it the other way around. Rhoades also discusses projects based on research and high quality science and not on attention to local people’s needs. When funding runs out, the people’s needs are yet to be met and those people begin to believe they may have wasted their time. Further funding was received in 2004-05 to develop this Strategy into an implementation plan and incorporated the items required by Government – the economic justification for outcomes and associated delivery costs and the inclusion of the social capacity project - that were discussed above in the North Central Regional Management Plan 2004.

The finalisation of the Loddon Murray Strategy depended on the completion of the North Central Regional Catchment Strategy (NCRCS). The date for the finalisation of the review of the NCRCS was eventually March 2003. This meant that the Loddon Murray Strategy had a period where it was virtually waiting for its overarching strategy to catch up. This made things difficult in the Loddon Murray region, as the local community was keen to commence work on implementing the new Strategy.

Initially, the main limitation was not to be the availability of funding. The Strategy was launched for wider public comment
As a summary document in October, 2002. Due to the size of the base document, a summary of the Strategy was developed to summarise the issues and to outline how it might be implemented. Although this may appear premature, the funding under the National Action Plan for Salinity and Water Quality was released before the Strategy was completed. This meant that a program had to be put in place to take advantage of this funding that detailed some targets and how it would be implemented.

The main feature of the summary document was the fact that there would be eight priority projects that would be serviced by agency staff working in five theme teams. This management matrix is shown in Figure 15.

Figure 15. Loddon Murray Strategy implementation structure. (Turner and Shanahan, 2001)

Community participation is involved in this model at three levels and can be seen by the grey arrows.
Each priority project has its own steering committee that has community people who have skills that are relevant to each particular project. The new Loddon Campaspe Irrigation Implementation Committee (LCIIC) is made up of community and agency people and has an overseeing strategic role and reports to the North Central Catchment Management Authority Board that also has community representation. The LCIIC is responsible for the delivery of the Loddon Murray Strategy.

The major change in management approach contained within the community structure of the North Central Catchment Management Authority is its focus on issues. Geographical issues by and large drove the previous land and water management plans. People in the four implementation groups were working on the similar issues in their area, for example wetland management. By bringing these people together, the accumulated skill, knowledge and contribution would be extremely effective. This had already been seen in the way that the community task groups had performed during the development of the Strategy.

The major limitation because of the time lapse between the launch of the Loddon Murray Strategy in 2002 and the launch of the North Central Regional Catchment Strategy in 2003 was the development of an appropriate community structure to deliver the outcomes of both strategies. The four previous implementation groups had disbanded through 2001 and had not been replaced. Staff employed by the Department of Primary Industries, Goulburn Murray Water and the North Central Catchment Management Authorities were servicing the Loddon Murray Strategy without the support of a community structure. By 2002, the only body that represented community people was the North Central Catchment Management Authorities Board.
The appointment of community representatives to the Loddon Campapse Irrigation Implementation Committee was undertaken during 2003. Representatives for project steering committees for the priority projects were appointed in late 2004.

As previously discussed, the initial problem of the slowness of the North Central Catchment Management Authority to complete their Regional Catchment Strategy had a range of ramifications for the Loddon Murray Strategy.

Whilst the problems were mainly to do with process, there were still major issues if the four themes that I have raised in Chapter 5 (Table 22, Section 5.6) - Leadership, Responsibility, Effectiveness, Community Engagement - are taken into account.

5.7.12 Problems with Process

In the long term, external factors slowed the implementation of the new Strategy in the Loddon Murray part of northern Victoria. Many decisions were made by groups that were not based in the North Central catchment. The major funding bodies may have been taking into account possible poor business management and poor internal relationships within the North Central Catchment Management Authority and the Victorian government agencies involved – the Department of Sustainability and Environment and the Department of Primary Industries at the local level.

In my mind and according my meeting notes, the perceptions were that:

- The North Central Regional Catchment Strategy was held up due to internal infighting
- There was poor communication within and externally with the North Central Catchment Management Authority
Management and leadership within the North Central Catchment Management Authority could have been more proactive in driving this process.

Community implementation structures were in need of review and elements were undermining the decisions of the North Central Catchment Management Authority Board that added further fuel to the first three points identified from my meeting notes.

Simply put, funding bodies seemed reluctant to invest in activities sponsored or endorsed by the North Central Catchment Management Authority because it had not met time lines for its Regional Catchment Strategy. The North Central Catchment Management Authority could not demonstrate community support for its developing Regional Catchment Strategy due to infighting within community groups.

In effect, the decisions taken by the funding bodies were quite damaging to the partners involved in local catchment planning and management even thought they had completed the tasks requested of them. These partners were being penalised partly because the North Central Catchment Management Authority had not completed its Regional Catchment Strategies on schedule and partly because of the way it was conducting its business.

The announcement of budget allocations by the Victorian Government for catchment management for the 2003-2004 financial year vindicate this point of view. The Victorian contribution to the Loddon Murray Strategy was reduced by five per cent. This cut seemed to be an outcome that can be attributed a number of incomplete processes related to reporting and good business management outside the control of the group trying to implement the Loddon Murray Strategy.

The North Central Catchment Management Authority was asked by the Victorian National Action Plan for Salinity and
Water Quality Office to submit Regional Catchment Investment Plans in mid 2003. These document were the vehicle to gain funds from both the Victorian Government through its Catchment and Water Program and the Commonwealth Government through the National Action Plan for Salinity and Water Quality.

My personal opinion is that a community-based group such as a Landcare group would not have the patience or resources to complete such a document given the detail of information required to fill it out to the satisfaction of all concerned. The Regional Catchment Investment Plan for 2003-04 was initially submitted with a bottom line request of $18.6 million dollars to fund catchment management in the North Central Catchment.

Although the Catchment Management Authority was asked to treat the Regional Catchment Investment Plan as a prospectus, officers from the Victorian National Action Plan for Salinity and Water Quality Office immediately responded with a request to reduce the amount to $5.5 million dollars for bids to the National Action Plan for Salinity and Water Quality program and to reduce the amount requested from the Victorian Government program to the previous year’s (2002-2003) allocation with a further reduction of twenty percent.

This process was very awkward - due to its very tight time lines and possible symptoms of the Victorian Government and the Commonwealth Government not working in a full partnership. The two bodies had different interpretations of the purpose of the Regional Catchment Investment Plans. The development of the Regional Catchment Investment Plans was also done almost exclusively of community input in the North Central catchment. In fairness to North Central Catchment Management Authority planners, the decision to exclude the community was made due to the complexity of the task. The
down side is that the community was not involved in the
development of budgets and the subsequent reductions that
took place. The Victorian Government had been effectively
insulated itself from any community angst that would normally
have resulted from these actions. The community could not
formally react because the structure that was normally used
did not exist at that point in time.

Previously, four land and water management plans were
operating in the Loddon Murray region. All budgets were
endorsed by each group and any bid for extra funding was
signed off by the chairperson of the relevant group. If the
groups did not like what they saw, they were quick to initiate
discussions with senior bureaucrats and politicians to express
their concern at a reduction in budget. Because of the
requirement to increase the scale of land and water plans to a
regional scale through the development of Regional Catchment
Strategies, the groups were reduced from four to one as
previously discussed in Section 2.5.2. This also meant that the
number of community people who were actively petitioning
government was also reduced by a least a factor of four.

Funding and resourcing of good catchment planning is
always an issue. It was raised in all of the phases of my
research and by the community groups involved in the Loddon
Murray Strategy.

In 1997, the Commonwealth Government announced the
allocation of $1 billion to establish the Natural Heritage Trust
(NHT). In 2001 it added a further $1.2 billion to extend the
Natural Heritage Trust (DOTARS 2002) program. This program
has seven key areas and has a strong natural heritage base –
especially since the announcement of the National Action Plan
for Salinity and Water Quality program (AFFA 2000b).

This program also has a billion dollars invested. Both the
National Action Plan for Salinity and Water Quality and NHT
programs request that bilateral agreements are reached between the State and Commonwealth Government and have comprehensive investment guide lines. There is a major difference in the way the funds are operated. On the ground funds received from the National Action Plan for Salinity and Water Quality program are 'pre-matched'. This means that for every dollar that is invested, the relevant state also invests one dollar.

Under Natural Heritage Trust programs funds are not 'pre-matched’. Groups are required to match investments from the Trust on a dollar per dollar basis but the states have a level of control. There are assessment panels for bids that tend to follow the current government policy on a given area. For example, planting trees was a high priority in the 1990’s. In 2003, the priority is the protection of remnant vegetation (including trees) according to Victoria’s Native Vegetation Management Framework (DNREV 2002b).

5.8 North Central Regional Catchment Strategy 2003

The North Central Regional Catchment Strategy (NCCMA 2003) was launched in November, 2003 at Ravenswood, near Bendigo in central Victoria. The Strategy was developed using the guidelines of the Victorian and Commonwealth Government and is an assets-based approach. The assets within the catchment were identified and the services that were provided by those assets. The Strategy identified eleven assets – nine were physical assets including infrastructure, dryland, irrigated land and public land and two of them specifically relate to people – community and cultural heritage.

The North Central Regional Catchment Strategy was produced by consultants on behalf of the North Central Catchment Management Authority Board. It was a difficult process to produce the final document. A major consultant group commenced work on the project 2001. For a range of
reasons, the contract between the North Central Catchment Management Authority and this group was terminated in the last half of 2002. This group had undertaken a community consultation process by holding public workshops across the catchment to identify the issues and concerns of the community. Whilst this was a good approach, other parts of this early work did not come together as well.

Unfortunately for the next consultants that were engaged, this meant that time-lines were very tight. Furthermore, there was very little apparent transfer of information from the first group to the next. There was much less time to be able to re-engage with the community. Community engagement can be a time consuming and expensive task. The second group of consultants was more dependent on the Catchment Management Authority’s community structures, the Board and Implementation Committees for community involvement. The new consultants were also much closer to the agencies involved in the Regional Catchment Strategy, the North Central Catchment Management Authorities staff, Department of Sustainability and Environment and Department of Primary Industries staff and Landcare facilitators. The second writers of the Regional Catchment Strategy also had confirmed guidelines that needed to be observed that had been developed and agreed by all States, Territories and the Commonwealth Government (VCMC 2002).

These Guidelines list 14 benefits (listed below) from developing a Regional Catchment Strategy. Of the fourteen points listed, seven of them feature good community involvement that will be important if the Regional Catchment Strategy is to be accepted by the wider community. These are the points I have formatted in italics. The words that I have underlined are words that have been arising throughout my research and relate very well to the four themes that have
evolved and discussed in Chapter 5.4. Those themes are **leadership, responsibility, effectiveness, and community engagement.**

The following points are listed as benefits of developing a Regional Catchment Strategy in that document (VCMC 2002 p. 7):

- Satisfying legislative and policy requirements
- *Reflecting on what the vision for the region is in relation to NRM*
- Determining priority issues in the region
- Improving the condition of natural resources and environmental quality through targeted activities at the local level
- *Providing the opportunity to embrace new ideas, understanding, directions and approaches to NRM*
- *Engaging all key stakeholders in the RCS process*
- *Enhancing involvement and ownership of the RCS by CMA’s, NRE regions and the range of other stakeholders in NRM in each region*
- *Further developing the partnerships in the regions*
- *Increasing capacity of land managers and other stakeholders in NRM*
- *Clarifying roles and responsibilities for NRM in the region*
- Improving investment frameworks
- Providing useable and workable strategies for the range of regional NRM activities
- Improving monitoring, reporting and evaluating of NRM at regional level
- Producing agreed RCS for 2002-2007
The importance of these benefits is also well supported by the literature. In all three phases of my research with the community and natural resources management agency professionals, all of the points in Table 28 were raised many times.

Table 28. Comparison of Research Themes and Objectives in Regional Catchment Strategy Guidelines

<table>
<thead>
<tr>
<th>Themes arising from my research</th>
<th>Objective in Regional Catchment Strategy Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community engagement, leadership</td>
<td>Reflecting on what the vision for the region is in relation to NRM</td>
</tr>
<tr>
<td>Community engagement, leadership</td>
<td>Providing the opportunity to embrace new ideas, understanding, directions</td>
</tr>
<tr>
<td>Responsibility, community engagement</td>
<td>Engaging all key stakeholders in the RCS process</td>
</tr>
<tr>
<td>Responsibility, effectiveness</td>
<td>Enhancing involvement and ownership of the RCS by CMA’s, NRE24 regions and the range of other stakeholders in NRM in each region</td>
</tr>
<tr>
<td>Responsibility, effectiveness, leadership</td>
<td>Further developing the partnerships in the regions</td>
</tr>
<tr>
<td>Responsibility</td>
<td>Clarifying roles and responsibilities for NRM in the region</td>
</tr>
<tr>
<td>Community engagement, responsibility, effectiveness</td>
<td>Increasing capacity of land managers and other stakeholders in NRM</td>
</tr>
</tbody>
</table>

There was an urgent need to engage the community in catchment planning. On the other hand, there was also an urgent need for the natural resources management agencies to develop very clear roles and responsibilities. Several participants in the semi-structured interviews stated that they were not clear who was supposed to be doing what (pers. comm. Planner, Local Government and Engineer, Rural Water Authority).

24 This would now cover the Victorian Department of Primary Industries and Department of Sustainability and Environment.
If the participants in my research are not fully aware of the roles and responsibilities of catchment planning agencies, urgent work needs to be done in this area. Engaging all key stakeholders would be part of this process. It would be impractical to go to the community with statements about roles and responsibilities if those items are not clearly understood and accepted by catchment planning partners. The further development of the partnerships in the region is also linked to this issue.

The issue of roles and responsibilities is often driven by legislation. Some of this legislation has been passed and agencies have been given new responsibilities with inadequate consultation. The confusion over who manages what on public land has been an issue for many years. In Victoria, public land is that land that is managed by public land managers on behalf of the people of that State. The status and use of that public land tends to indicate the responsible agency.

Water Reserves are managed by Rural Water Authorities. They are usually lakes that are used as water storage or are part of the irrigation infrastructure managed by that Authority. Some of the wetlands that are listed as Water Reserves have been listed under the Ramsar\textsuperscript{25} Convention. Parks Victoria has just completed management plans for these wetlands. Those plans contain schedules of roles and responsibilities. Most are contingent on legislation known as the \textit{Victorian Environmental Assessment Council Act 2001}. This legislation sets out roles and responsibilities for all land tenures.

Unfortunately, many of the designated public land management agencies were not aware of their new responsibilities. Furthermore if there is now a designated land

\textsuperscript{25} The Ramsar Convention is a Treaty that was launched in Ramsar, Iran. Its major purpose is to protect the character of wetlands that are used by migratory bird species.
manager for an area of public land that does not mean that the agency can work in isolation. Other stakeholders in these situations can use other legislation to force land manager to do things that might not be considered as ‘core business’ in that agency’s view. The Commonwealth Environment Protection and Biodiversity Conservation Act 1998 and the Victorian Flora and Fauna Act 1986 can be used in this manner. This legislation is discussed in detail in Chapter Three, Section 3.2. The point is that whilst there is a need for clear roles and responsibilities, there is also the need to work with other catchment planning agencies and the community.

As requested by the Victorian Government document, Guidelines for Review and Renewal of Regional Catchment Strategies (VCMC 2002), the new North Central Regional Catchment Strategy (NCCMA 2003 p. 104-106) has listed six divisions of the Victorian Department of Sustainability and Environment, two divisions of the Victorian Department of Primary Industries, Parks Victoria, fourteen Local Government agencies, three urban and two rural water authorities, landholders and landholder groups, indigenous communities and industry as key stakeholders in its document. Roles, and to a lesser extent responsibilities, have been listed for all of those stakeholders. According to the Guidelines for Review and Renewal of Regional Catchment Strategies (NCCMA 2003), the Regional Catchment Strategy had to assign accountabilities for the delivery of the Strategy.

This would have very difficult to achieve in practice. It is always going to be difficult to understand the roles and legal responsibilities of such a large number of stakeholders. As the objectives in the guidelines state, there is a requirement to enhance the ownership and involvement of all stakeholders in adopting and implementing the new Regional Catchment Strategy. Both the Victorian Department of Sustainability and
Environment and Department of Primary Industries have actively addressed this point.

The former Victorian Department of Natural Resources and Environment had one representative on each of the Catchment Management Authority Boards. With the restructure of that Department, the two new State catchment planning Departments each have a representative on each Board. The title of the representative of the Department of Primary Industries is Community Relationships Manager. The relevant Regional Manager is the Department of Sustainability and Environment representative on the Catchment Management Authority Boards.

The increase in membership of State Government representatives on the Catchment Management Authority Boards reinforced the view of government that partnerships need to be enhanced. The representative from the Department of Primary Industries has no other line management duties. Their role is to be the ‘honest broker’ between the different agencies and the Department of Primary Industries to ensure a good working partnership between that Department and the other groups working in catchment planning. This role confirms the importance that the Victorian Government sees in the need for good leadership and coordination.

At the commencement of this research, I thought that I would be approaching the concept of catchment planning from a catchment management perspective. What information was needed about the environment to improve catchment planning processes? The issues raised by my research with the community, literature and my involvement with the Loddon Murray Strategy made me realise that good catchment planning is about working with people.

The Community Relationship Manager for the Mallee and North Central catchments working with the Department of
Primary Industries Victoria was present at a North Central Catchment Management Authorities Board workshop that was addressed by Andrew Campbell\textsuperscript{26} in January 2004.

Andrew Campbell’s message to the Board was to worry less about the technical details of land and water management and be more concerned about getting people engaged in it. My final themes, listed in Table 23, Section 5.6, fit this approach very well and need further discussion as they do have implications for good ongoing catchment planning. Chapter Six outlines my themes and discusses them in detail, with implications for better catchment planning.

\textsuperscript{26} Andrew Campbell is the Executive Director of Land and Water Australia that is a statutory research and development corporation with the Australian Government.
Chapter 6: Implications for Better Catchment Planning

In Chapter 5 (Section 5.2), I have explored four themes that have developed as part of my research – leadership (5.4.2), responsibility (5.4.6), effectiveness 5.4.4), and community engagement (5.4.7) - and the implications that may be associated with them. Before I can discuss the implications of these themes for better catchment planning, they need to be explored more thoroughly.

6.1 Discussion of Themes

I have suggested that there are four themes that need to be addressed if there is to be effective management of our natural resources through good catchment planning. The literature and my research have identified that these points are important and should be integral to catchment planning processes. It appears to be easier to talk about good leadership, responsibility, effectiveness and engaging the community than it is to incorporate them into a good catchment planning framework. Most stakeholders seemed to know what should be done. They were not sure of the best way of doing it – the how?

At the commencement of my research in 2000, I wanted to develop a catchment planning framework that would address the problems that I was seeing in catchment management. I believed that I could develop a process based on the management of physical resources that would result in a good planning framework. I have since realised that although the management of natural resources is important, it is even more important to work effectively with the people involved in catchment planning.

The focus of my study had moved from a natural resources management approach to a sociological approach. To revisit the approach used by the Victorian Government for
the development of Regional Catchment Strategies (VCMC 2002), I have moved from an ‘assets-based’ approach to a ‘people-based’ approach.

Since 2002, my approach has been to produce a planning process that allowed better participation by all stakeholders. As I continued my research and became more closely involved in catchment planning with my work in the development of the Loddon Murray Land and Water Management Strategy and the North Central Regional Catchment Strategy, I found that other procedures were already present. The processes were at State (Victorian) and national levels.

At the State level they were associated with the production of Second Generation Salinity Plan (VCMC 2002, CVCMC 2001), the Regional Catchment Strategies (DNREV 2000a, AGV 2001) and at the Commonwealth level through the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust (AFFA 2000b, Australia 2000) (MDBC 1999, NAPSWQ 2001) These plans and strategies tended to formally define the way catchment planning is undertaken from an institutional viewpoint.

The changes in institutional arrangements are discussed in detail in Chapter 3, Sections 3.1-5. The roles of Commonwealth, State, Regional and Local Government have been agreed to through appropriate agreements between the States and the Commonwealth Government as part of Bilateral Agreements (Environmental Protection and Biodiversity Conservation Act 1999, Part 5).

By 2004, I had realised that my intention to develop a stand-alone framework for catchment planning was unnecessary given the work underway at various levels of government. Even though the institutional frameworks appear
to be in place, there is still the need to implement these frameworks by engaging all stakeholders.

There is still a need to examine how these changes are being put into effect. Some of the new planning approaches may not adequately address the engagement of stakeholders at the community level.

The assets-based approach (outlined in Section 3.3) addresses the need to manage the impacts associated with the utilisation of natural resources. This approach does not address how to change the way people manage those resources. The assets-based approach has now been adopted as part of the catchment planning process. Because of this, I believe there is still a need to manage the social issues within effective catchment planning. Given that, there is still room for further development within the structures that have been established for sustainable natural resources management.

Despite my earlier comments about the asset-based management approach that has been adopted by the Victorian Government as part of its Regional Catchment Strategy Development Guidelines (VCMC 2002), I believe this is still an adequate model. It provides a starting point or benchmark so that catchment management planners can evaluate the effects of their own plans. If there has been a positive change in the condition of a resource, for example water quality, their planning has been effective. It is important to remember, however, that that change must have involved the public.
Figure 16 describes the asset-based approach and has been modified from a diagram in the North Central Regional Catchment Strategy.

Figure 16. Asset-based Program Logic
Source: North Central Regional Catchment Strategy (NCCMA 2003, p.24)

I have shaded some of the boxes in Figure 16 to indicate where I believe there are opportunities for community participation.
The North Central Regional Catchment Strategy (NCCMA 2003) also contains Figure 17 to describe relationships between the Regional Catchment Strategy and all of its stakeholders.

![Diagram of Regional Catchment Strategy Relationships](image)

**Figure 17. Regional Catchment Strategy Relationships**

Source: North Central Regional Catchment Strategy 2003 p. 106)

The previous North Central Regional Catchment Strategy was delivered through its regional strategies – existing land and water management plans. I have already discussed the amount of community effort involved in the development of these plans and the fact that the former Victorian Department of Natural Resources and Environment was responsible for the delivery of some of these plans. The question needs to be asked – how is the community involved in the prioritisation processes implied in those headings. Three boxes in Figure 16 have been shaded grey and are labelled ‘priority issues’, ‘management responses’ and ‘priority actions’. Is it appropriate to rely on the knowledge of agency officers (North Central
Catchment Management Authority, Department of Sustainability and Environment, Department of Primary Industries) and the community representatives on the NCCMA Board to decide how to use people to improve an asset? Have the people actually working on the ground been appropriately engaged in these processes?

One of the outcomes of my project has been the development of four themes that recurred throughout my research and also throughout my review of existing information. The themes stressed the importance of leadership, emphasising facilitative leadership, as well as executive leadership. There is the need for all stakeholders to acknowledge and accept their responsibility in the catchment planning and implementation process and the compulsion that this be socially, economically and environmentally effective. Finally, if the first three points are addressed then the relevant communities will need to be actively engaged. My research found that most people understand these points. They often also ask how this might be done. If we are to know how to do it, we need to be able to evaluate how well it is being done now. The following framework is used widely in the health sector for evaluating its programs and puts forward the following points.

6.2 Appropriateness, Effectiveness, Efficiency

The Australian Land and Water Resources Research and Development Corporation (Zammit et al. 2000) has three key words in its evaluation framework – effectiveness, appropriateness and efficiency. This framework is also used for evaluation by the Central Murray Advisory Committee27

27 this group is a regional consultative committee that reports to the Commonwealth Department of Employment, Workplace Relations and Small Business
(CMACC 2004) and has also been adopted by the Victorian State Auditor – Auditor General Victoria (AGV 2002)

Zammit et al. (2000) point out that the main impediments to effective catchment planning arise from poorly conceived programs that have an inappropriate choice of mechanisms and perhaps inappropriate program objectives and strategies. If the programs are appropriate, the next step is to determine how effective the programs that are underway are in terms of achieving desired outcomes. Zammit et al. (2000, p.82) put forward the following statement to explain what is meant by efficiency:

Are the projects, programs and policies efficient with respect to the extent to which they are integrated and coordinated with other projects, programs and policies to ensure consistency and synergy and reduce duplication and wastage?

Although these key words of appropriateness, effectiveness and efficiency are widely used in an evaluation context, they do support the themes that have evolved through my research. This framework appears to place emphasis on how planning is undertaken rather than why planning is undertaken or what it is trying to achieve. There is a clear linkage between a given objective or outcome and how that outcome is being addressed. Community engagement can be used to ensure that planning is appropriate. Good leadership and improved community engagement will ensure that planning is effective and responsibility for catchment planning will ensure that it is efficient, that is, well done with the efficient use of available resources.

Although community engagement, community education and community awareness are often treated as separate programs, the Loddon Murray area and the North Central Catchment Management Authority have tended to treat them
as a package in the development of their community engagement strategies. The Victorian Department of Sustainability and Environment and the Department of Primary Industries released a tool in March 2004 called the Community Engagement Workbook. The Workbook is a resource or tool that outlines a large number of tools that can be used to engage communities. This resource is discussed in Section 2.5.3 in Chapter 2. The Community Engagement Book (DSE/DPI 2004) outlines 65 different ways to engage with communities. The point is that Victorian Government natural resources management agencies may have been under-utilising the techniques that are available to assist community engagement processes.

Even though there are many forms of communication, for example, radio, television and newspapers, it can still be difficult to be able to transfer the message to the appropriate people. Several of the participants in the semi-structured interviews discussed difficulty in engaging the community appropriately:

Not everyone watches television or reads the newspaper. (Planner, Shire of Gannawarra, November 2003)

Even though it is more expensive, the use of other techniques such as study groups, citizens’ juries, the open space approach or discussion groups may need to be used as they do not rely on good reading skills or depend on the media to convey the message.

If the community is fully engaged and informed the attitudes of the people managing land and water resources will be more easily obtained and measured. Catchment planners will now know if plans are achieving their desired outcomes will be better able to adaptively manage activities that are underway. By working with the community, the incremental
change in a resource condition can be better measured because the impact of people on that resources is being assessed, not just the change in the condition of a given asset, for instance, water quality. Before this can occur, there needs to be clear responsibility for catchment planning. To get this clarity, the roles and responsibilities of stakeholders in catchment planning need to be clearly understood.

Whilst this concept is recognised by policy managers, it is not being fully developed for effective implementation. The guidelines for the Victorian Regional Catchment Strategies (VCMC 2002), specify that actions should be established and the group responsible should also be specified:

Identify the region’s governance structure, articulating agreed roles and responsibilities for delivery of outputs and outcomes;

Schedules for roles and responsibilities have appeared in many planning developments in recent times. They are clearly set out in the bilateral agreement between the Commonwealth Government and the State of Victoria for the implementation of the National Action Plan for Salinity and Water Quality (Australia 2001). These schedules include implementation and coordination roles and they set out how activities are prioritised by regional catchment bodies. Similar schedules of roles are also set out in the North Central Regional Catchment Strategy (NCCMA 2003), the Draft Integrated Catchment in the Murray Darling Basin 2001-2010 (MDBC 2000b) and the Ramsar Strategic Plan for Gunbower Island (DSEV 2003) developed by the Victorian Government.

Responsibilities linked to management actions are listed in the Mildura Forest Area Plan (DNREV 2000b), the North Central Region Rabbit Action Plan (DNREV 2000c). Whilst these roles and responsibilities are listed, they do not go to the
next step. The passage above from the guidelines states that the Victorian Government has requested agreed roles and responsibilities. In Victorian catchment planning, this agreement is not formally sought during the development of plans.

The allocation of the roles and responsibilities by groups developing planning documents is more often about association and best fit rather than formal negotiation to determine if a given stakeholder is prepared to accept and be able to fund the implementation of their roles and responsibilities. In other words, they may have the skills and resources to carry out the task but not the funding.

At the end of Chapter 5, I briefly discussed the role of catchment management agencies in wetland planning. On the majority of wetlands, the role of each agency is set out in schedules to the Victorian Environmental Assessment Council Act 2001. In my dealings with these agencies at a local level, the fact that their role was defined by stature was not fully understood. The Victorian Government had not advised them of their obligations before the legislation was passed. (pers. comm. Manager, Goulburn Murray Water Rural Water Authority, Kerang).

Although the agency may have statutory obligations to perform certain roles, it may not have the internal capacity or desire to fulfil those statutory obligations. There were many comments from the participants in my research about lack of clarity regarding the roles and responsibilities of the various groups and agencies involved in catchment planning – who should be doing what.

During the semi-structured interviews, I found that the officers working with the Victorian Government Departments and the Goulburn Murray Water Rural Water Authority had a very good understanding of the roles of its partner
organisations in catchment planning. The officers working in the remaining agencies had varying levels of understanding about the roles and responsibilities of all of the agencies participating in catchment management. The question arises as to whether the officers’ unclear understanding of these matters pertained to their own organisation or personal work approach.

I believe that this is an institutional problem that needs to be addressed as soon as possible. A new Chief Executive Officer joined the North Central Catchment Management Authority in early 2004. I was present at a meeting at Kerang in mid-March where that person expressed the need to clarify roles and allocate responsibilities of the various groups engaged in catchment planning in the North Central catchment. The meeting was attended by the senior officers of the Victorian Department of Sustainability and Environment, officers from Department of Primary Industries, and some representatives from advisory committees to the local Goulburn Murray Water Rural Water Authority discussing land use change. It was acknowledged that there needed to be a lead group or agency to run this project.

During 2003-04, Catchment Management Authorities started to use Service Level Agreements with partner agencies who were delivering National Action Plan for Salinity and Water Quality projects. These agreements set out some essential roles and responsibilities to clarify who was delivering what activities. At a higher level, in the White Paper on Water Reform, there is some discussion about clarifying roles and responsibilities. These include changing the memberships of the Boards of Rural Water Authorities and Catchment Management Authorities Boards to reflect a preference for management using appropriate skills and experience (DSEV 2004) rather than geography. The members of the Board were
being appointed because they had the skills to perform the
tasks required of them. Previously, members were appointed
to represent an area or locality and did not need any preferred
skills or experience.

Some of these skills included business management
skills. The Catchment Management Authorities were required
to monitor and manage the expenditure of large sums of
money on behalf of the State and Australian Government.
Under the bilateral agreement discussed in Section 2.1, the
Boards of the Catchment Management Authorities have legal
accountability for the management of the funds allocated under
the Commonwealth Natural Heritage Trust and the National
Action Plan for Salinity and Water Quality (pers. comm. NHT
Manager, Corangamite CMA, August 2004).

Very clearly, the Victorian Government was keen to see
regional bodies adopting sound business management from a
catchment management and a business point of view.

6.3 Good Business Systems

One of the recommendations of the Commonwealth
Parliamentary Inquiry into Catchment Planning, undertaken in
2000, was that the Commonwealth Government adopt the role
of an ‘honest broker’ (Australia 2000). In May 2004, a Chief
Executive Officer of a Catchment Management Authority
explained to me that he believed his organisation also had the
role of the ‘honest broker’.

The logic behind this statement was that the Catchment
Management Authorities are legally responsible for the wise
management of funds provided by the Government to
catchment planning agencies and other stakeholder groups to
carry out catchment planning activities. The Catchment
Management Authorities should be working with the
community through their implementation committees and their
Boards to oversee effective, efficient and appropriate catchment planning.

A major difficulty experienced by catchment management agencies providing services to the North Central Catchment Management Authority, the Department of Sustainability and Environment, the Department of Primary Industries and the Goulburn Murray Water Rural Water Authority, was the change from receiving funds directly from the Australian and Victorian Government to now receiving funds from the Catchment Management Authorities that were also accountable to the wider community through its Board and Implementation Committees. The latter were managing these funds on behalf of the Government.

The other move in this catchment was the way finances were managed. Catchment management agencies were supplying services to the North Central Catchment Management Authorities with little or no formal agreements other than the Regional Management Plan. There was often duplication of work also being undertaken by staff of the North Central Catchment Management Authority with that undertaken by the other agencies listed above. The way to remedying this was the establishment of Service Level Agreements.

In May 2004, I was asked to check the schedules and contract for a Service Level Agreement between Department of Primary Industries and the North Central Catchment Management Authority. An Executive Director of the Department of Primary Industries and the Chairperson of the North Central Catchment Management Authority had signed this agreement. It was the first time in my 25-year history working with natural resources management agencies that the delivery of a product was being managed with good project management practices.
The agreement outlined resourcing, responsible officers, the product to be delivered, time-lines and milestones. There were also firm expectations to be met. This process formally allocates roles and responsibilities of all parties concerned and \textit{who} will be funded to do \textit{what}. Stakeholders were now aware of \textit{what} they were to do, where they were to do it and by \textit{when}. \textit{Why} they are doing this work has been decided by how the funding agencies have directed funds to reflect their policy priorities and this is checked against agreed Regional Catchment Strategy outcomes. Once these points have been addressed, the main point left is \textit{how} the service is delivered.

A major principle of business management or corporate governance is that its employees fully understand their operating environment or business context. The Service Level Agreements that are now used by most of the Catchment Management Authorities in Victoria help with this understanding.

Johnson and Scholes (2002, p. 193) point out that there are two fundamental questions relating to this matter:

- Whom should the organisation be there to serve?
- How should the directions and purposes of an organisation be served?

The first question is more pertinent in a catchment planning context. A person working for a rural water authority might see the authority’s sole purpose as supplying water to its customers rather than working in catchment planning. Similarly, a person working in Local Government might be more preoccupied with roads and rubbish than catchment planning. This focus on core business may mean that other responsibilities receive a lower priority as the person does not see why their organisation is involved in activities that should be somebody else’s business. This fact may underlie the
discussion about unclear roles and responsibilities in Section 6.2.

These authors (Johnson and Scholes 2002) point out that corporate governance relates to how the purposes and priorities of an organisation should be decided. Corporate Governance is also concerned with the distribution of power amongst the different stakeholders (Johnson and Scholes 2002, p. 195). These authors define stakeholders as ‘those individuals or groups who depend on the organisation to fulfil their own goals and on whom, in turn, the organisation depends’.

This definition is important as the Commonwealth and State governments are major stakeholders in catchment planning in Australia. The Commonwealth and State Governments are the major sources of funding for catchment planning activities. In Victoria, Catchment Management Authorities are dependent on this funding. In turn, the Catchment Management Authorities have a major role in deciding the priorities for the funding of catchment planning activities that are set out in the bilateral agreement that was discussed earlier (see Section 3.1). These activities may also have input from partner agencies such as Department of Primary Industries, Department of Sustainability and Environment, Goulburn Murray Water Rural Water Authority, Greening Australia and other non-government organisations such as the Trust for Nature and Landcare groups.

6.4 Alignment of Research Questions with Final Themes

My themes – responsibility, leadership, community engagement and effectiveness all relate to this question of how. How is the catchment planning undertaken going to be effective (and good value for money)? This point is addressed by briefly exploring my research questions. My first question asks how well do current catchment planning processes
perform and do they involve communities appropriately? To turn this question around, **how** it seen as being effective by the community and good value for money by investors? My research indicates that largely the general community does not see catchment planning as being effective. At the same time, it is fair to say that the wider community is not totally sure what is catchment planning.

Investors do seem to believe that the process is good value for money as there is reinvestment in catchment planning activities. It is obvious that the Commonwealth and State Governments are very keen to ensure accountability for the investments by Catchment Management Authorities. This is with the use of strict governance arrangements that are outlined in the bilateral agreements and the process to sign off regional investment plans and the Regional Catchment Strategies.

The next research question was do catchment planning agencies believe they **involve** the community in their catchment planning at an appropriate level. In other words, is there an appropriate level of **community engagement** and **involvement**? My research indicates that catchment planning agencies generally believe that they adequately involve the community in their decision making processes and at the appropriate level. There was a lot of discussion about the quality of community engagement and how it might be undertaken more effectively. Unfortunately, the community tends to disagree with the agencies. In very simple terms, if the public does not understand the roles of catchment planning agencies, perhaps the agencies are not involving the community at an appropriate level.

The final research question was - what were the changes that might be needed to ensure good catchment planning that involved good **participative** planning?
This is the most important research question as it was designed to find the way to address the previous two questions – and there was no simple answer.

The original intention was to establish a framework to improve catchment planning. I now believe that there are sufficient institutional arrangements in place for effective catchment planning. As stated in Section 6.1, there is a need to use more tools to improve how catchment planning takes place. Many of the tools that are outlined in the Community Engagement Workbook (DSEV 2004) discussed in Section 2.4.3 have just been recognised for their usefulness in the last two years or so. If the effectiveness of good catchment planning is to be recognised, it also needs to be measured.

The Resource Condition Change Model (DSEVb, 2003a, p.15) has also been adopted by Catchment Management Authorities as part of their Regional Catchment Strategies. The major assumption is that a beneficial change in the physical environment has meant that planning has been successful. This approach does not allow for the long lag between when people see the need to change the way they do things and the actual change being brought into effect.

According to a senior manager with the Goulburn Murray Water Rural Water Authority (who worked with the salinity program when I was working in Kerang in 1992), this lag could be as long as ten years before there is a noticeable change at an appropriate scale.

During February 2004, the Loddon Murray Strategic Forum met to reconsider their response to the Securing Our Water Future - Green Paper for Discussion (DSEV 2003c). The

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28 The membership of the Loddon Murray Strategic Forum consists of the Chairs of the previous land and water plans, CEO and members of the North Central Catchment Management Authority Board and members from government agencies.
meeting was called by the Chairperson of the Loddon Murray Forum who expressed to me that he was frustrated about how to get the message and concerns of local Loddon Murray irrigators to the writers of the Green Paper. The source of his frustration was that there is no process that could be used to carry concerns directly to the appropriate level of government. At a crucial point in time, the process should have been to convey the message to an Implementation Committee of the North Central Catchment Management Authority. This committee would then have passed onto the North Central Catchment Management Authority Board and then onto the Victorian Government.

The relevant Implementation Committee did not exist as the North Central Catchment Management Authority was finalising a restructure of its community structure and nominations for positions on the Loddon Campaspe Irrigation Implementation Committee were still open, closing in mid-March 2004. The solution was that the Loddon Murray Forum held a special meeting to discuss these issues and developed a list of resolutions that were forwarded directly to the Board of the North Central Catchment Management Authority to forward to the Victorian Government.

The major resolution was a request to the Victorian Government to address some key points relating to the water industry in Northern Victoria. This included the management of an environmental water reserve, the need for security of water supply and the need to review water trading.

Whilst water reforms are seen by the Victorian Government as vital to the future of the area (DNREV 2003c, p. 61), the process was equally interesting as it is highly relevant to my research. The Loddon Murray Forum had decided to take alternative routes to the Victorian Government because the designated structure was not operating. Another
interesting point was that planning was underway outside the Catchment Management Authorities framework. The meeting was advised that two advisory groups within the local water industry, the Torrumbarry Water Services Committee and the Pyramid Boort Water Services Committee were commencing sub-area plans specific to the water industry. Both groups were planning with their local areas to address the impacts of the next stage of the Green Paper Discussion Paper. This is the White Paper that addresses the concerns raised by the Green Paper and then subsequent legislation to enable water reform.

Whilst the initiation of the sub-area plans could be seen as an excellent example of local leadership, in reality, it further complicates other planning processes underway in the Loddon Murray area and highlighted the lack of coordination. This further relates to the need for good communication between the two Water Services Committees and the catchment planning community. The Loddon Murray Forum also asked that the community be adequately engaged through the remainder of the process of water reform. The final point is that the questions were asked in the meeting about this planning – who would be responsible and who was paying for this work. These points align well with the themes that have evolved during my research.

6.5 Appropriate Institutional Frameworks

The institutional frameworks currently in place appear to be appropriated for the future of catchment planning or natural resources management. In Chapter 2.6, I outlined how most Australian States have established regional bodies to deal with National Action Plan for Salinity and Water Quality and Natural Heritage Trust programs. In Victoria and New South Wales and to a lesser extent in Queensland, these regional natural resources management agencies have statutory obligations and authority to enforce their programs.
All of these institutional frameworks also have the involvement of the community among their management objectives. The *Catchment Management Authorities Act 2003 No 104* of New South Wales has the following objective:

3(e) to involve communities in each catchment in decision making and to make best use of catchment knowledge and expertise.

The need for community involvement is also stipulated in the Victorian Guidelines for developing land and water management plans (VCMC 2002, p. 4) and similarly by the Queensland Government (NRM and EQ 2003) and the South Australian Government (NRMSA 2004). This community involvement approach was also a response to a recommendation of the Commonwealth Parliamentary Inquiry into Catchment Management that was submitted to the Commonwealth Government in 2000. The Inquiry sought a network of regional catchment bodies (Australia 2000, p. 112). The existing institutional arrangements are quite recent and are the end point of inquiries involving the community at all levels.

From the point of view of my research findings, there is no need to recommend major changes to the existing institutional framework for catchment planning at any level. The community indicated in my research that they believed that the Catchment Management Authorities should be coordinating catchment planning. This is reinforced in government policy at all levels as outlined above. Whilst it may still be difficult to make a difference regarding who does what there is a way to go with how this is to be achieved.

My research finding was that Catchment Management Authorities should be responsible for catchment planning. The public saw their effectiveness as an area that could improve.
The community and some of the agency officers were also unsure as to who should be doing what or more pointedly, who was responsible for what. This should be a role of Catchment Management Authorities.

Service delivery always involves engaging community groups. There is the problem of justifying to the community why changing the way you are doing something is a good thing, that it is not too expensive and that it is feasible and will actually achieve a positive change. The need for effective community engagement has been mentioned many times and that it is not easy to get everyone to participate in catchment planning. People might not see the point or actually elect not to be involved in catchment planning or other natural resources management activities.

Community engagement is a major area that needs to be researched in depth. The Loddon Murray Strategy has a priority project that addresses social capacity.

This is implemented with the use of four approaches:

- A community education sub-project
- A community leadership sub-project
- A community engagement sub-project
- Community profiling sub-project.

These sub-projects were developed at the request of the Social Capacity Steering Committee that provided community input into the Strategy. This Committee felt that this area had failed in the delivery of the previous plans. My research supports this concept. This Committee and the participants in my research indicated that leadership development, community education and a communication strategy were very important for successful catchment planning.

Community profiling has been integrated into the Loddon Murray Strategy under its Community Capacity Strategy (LMF
Community profiling is the first step in establishing the best way to engage the community. Demographic profiles using data from the Australian Bureau of Statistics are examined to establish trends within a population. The community is surveyed to establish the networks that exist and hold a community together, known as social capital.

Social capital is important in three ways (Serageldin 2000, p. 47):

- **It links economic, social and political spheres**
- **It focuses on relationships between economic agents and the ways in which formal and informal organisations can improve the efficiency of economic activity**
- **Desirable social relationships and institutions can have positive externalities.**

The last point is very important and relates well to my research. Social relationships and the relationships between institutions are dependent on good communication and coordination. If all are working together, there are benefits for all as there is improved information sharing, effective coordination, knowledge building and consequent reduced duplication of effort (Serageldin, 2000).

The National Action Plan for Salinity and Water Quality (NAPSWQ 2000) has community capacity building as one of its objectives. This will require research and investment in social capital if the whole of the community and the networks within it can be used to improve the condition of our catchments.

The following are some expected outcomes listed on the National Action Plan for Salinity and Water Quality homepage:

- Capacity building for communities
- An improved governance framework
- Clearly articulated roles for Commonwealth, State/Territory, Local Government and the Community
A public communication program.

At the commencement of my research, I felt that none of these points were being actively addressed by the North Central Catchment Management Authority. Because of that, my goal was to develop a framework to improve catchment planning. As my research has come to an end and changes have occurred within the North Central Catchment Management Authority, I now find that the current institutional arrangements are appropriate. Although my research did influence the development of the Loddon Murray Strategy at a local level (see Section 4.3 – The Role of the Researcher), the changes in institutional structures at the Victorian and Commonwealth level were already underway.

There is now a major push to clarify the roles and responsibilities of all of the stakeholders in the North Central Catchment, to institute good corporate governance and develop a good communications program. There is still a way to go as stakeholders come to accept a changed role. Natural resources management agencies will need to relinquish some of their control to the community and move to servicing the community and continue to act in a facilitative leadership role.

There is also the need to expand on some of the good work that has taken place in recent times. These points assist in the formation of my recommendations for catchment planning in Australia. It is appropriate to discuss my recommendations in the context of some points taken from the National Action Plan for Salinity and Water Quality outcomes (NAPSWQ 2000). The outcomes sought in the National Action Plan for Salinity and Water Quality address the themes developed during my research, - leadership, responsibility, effectiveness and community engagement.
Chapter 7: Recommendations for Improved Catchment Planning

As stated in Chapter One, the aim of this research was to develop an effective catchment planning framework that has appropriate levels of community participation.

To address this aim I have developed and addressed the following research questions:

1. How well do current catchment planning processes perform and do they involve communities appropriately?

2. Do catchment planning agencies believe they involve the community in their catchment planning at an appropriate level?

3. What changes might be needed to ensure good catchment planning with good participative planning?

My social research (as outlined in Chapters Four and Five) indicates that there is a major gap between the actual effectiveness of catchment planning processes and how ineffective the wider community regards these processes. My research indicates most people would not be aware of the body of legislation and policy with which catchment planning agencies work to implement catchment planning. Given that 88 percent of Victorians live in urban areas\(^29\) (ABS 2001, DSE 1997), they may not aware of being personally affected by catchment planning – even though local planning schemes put in place by Local Government are really catchment planning processes. This presents a problem for all levels of Government and the catchment planning agencies that act on their behalf.

\(^29\) 73% in capital city (Melbourne), 12.3% in 11 regional cities of 20,000 people of more and 3.4% in 17 regional cities with populations 7-20,000 (DSE 1997)
In recent times, catchment planning has seen some major change because of the introduction of two significant sources of funding from the Commonwealth Government. They are the National Action Plan for Salinity and Water Quality in 2000 (NAPSWQ 2000) and the two phases of the Natural Heritage Trust. Whist the Commonwealth Government was involved in catchment planning prior to this with programs such as the Murray Darling 2001 Program to address salinity, they did not have the rigour that is associated with the current programs.

The current programs have formal linkages with State and Local Government through the formal endorsement of Regional Catchment Strategies. These programs also require for comprehensive community engagement, accountable monitoring, evaluation and research programs that in turn demonstrate good value for money. These points are strongly supported by other work in the literature. This discussion can be found in Chapters 2 and 3.

This aligns well with some points raised by Gregory (2001, p. 37) that stress the need for good community engagement, good value for money and technically robust activities if catchment planning is to be successful.

7.2 Final Recommendations for Good Catchment Planning

The approach and results of my research are outlined and discussed in Chapter 3, 4 and 5. My recommendations are presented and grouped into the themes in the following sections (7.2.1 – 7.2.4).

7.2.1 Leadership

In looking at the results of my research and recent policy developed by most Australian States and the Commonwealth Government in the last two years, the Catchment Management
Authorities should play the lead role in catchment planning, as the ‘honest broker’. At the same time, all other participants – especially the community - need to be engaged as full partners in catchment planning. On this issue, I concur with the view of one of my community survey participants:

_Leadership should come from all stakeholders._
_(Participant, Community Survey, Shire of Gannawarra, November 2002)_

### 7.2.2 Responsibility

Responsibility for catchment planning should be shared by all of the stakeholders engaged in catchment planning. It is important that roles and responsibilities are fully understood and accepted by all stakeholders. The use of service level agreements by Catchment Management Authorities is a good way to ensure that there is clarity in this area.

The same agreements also ensure that all stakeholders in catchment planning are fully accountable to Catchment Management Authorities for their delivery of the various activities servicing Regional Catchment Strategy outcomes.

### 7.2.3 Effectiveness

The Commonwealth Government transfers funding directly to regional natural resources management bodies (or Catchment Management Authorities in some Australian States) as part of the National Action Plan for Salinity and Water Quality and Natural Heritage Trust programs. This has transferred the control of funds traditionally held by the State Government over to regional communities. This is formally set out in the Bilateral Agreement and the Inter-government Agreement between the Commonwealth Government and the State Governments Section 2.3 (Australia 2001).

This should continue as it gives regional communities a higher degree of ownership and ensure that they will be effective and appropriate at a local level.
7.2.4 Community engagement

There is an urgent need to implement good community engagement strategies. Most Catchment Management Authorities have good communication strategies based on press releases and newsletters. This is important but needs to be widened to include targeted community education at all levels of the community and to undertake social research to increase the impact of these programs.

To date, owners of agricultural enterprises have been the main participants in catchment planning. These are often industry leaders and are, or have been, politically active at some level, for example, Local Government or an industry representative group. For some reason, many progressive-thinking landholders and general members of the community do not engage with catchment planning processes.

There is an urgent need to engage both rural and urban communities to achieve fully sustainable natural resources management. To ensure the long term engagement of all stakeholders, it must be continuously demonstrated that catchment planning actions are good value for money (efficient), are relevant (appropriate), and are being adopted by people within the catchment. This can only happen if good community engagement and partnership programs are in place to communicate new ideas and information to reinforce and promote effective, efficient and appropriate catchment planning.
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Appendix One: Community Workshop Methodology

The Modified Group Technique Workshop that was used for the three Community Workshops is outlined below.

**CONTEXT: SETTING THE SCENE**
*State what the topic/objective is:*

- Example: *In this session we are going to identify the key topics or issues that you want to explore as a group over the next 12 months*

- *Have this written up on the board - highlight and clarify key words.*

- *State what the intended output and outcome is:*

  *Example: The product from this session will be a list of the priority topics/issues we want to investigate; we want to organise these into a calendar of events and we want to identify who will help organise each session.*

- *Make sure we focus on the topics / issues - how we tackle these (for example, presentations, workshops, field days, and etcetera) can be determined later.*

  Explain the process to be used and the time it’ll take
  For example
  The process will be:

- individual thinking, putting up as many ideas as we can think of

- as a group, identifying the different topics / issues amongst these

- identify the priority ones for us for this year

- decide on how many we can fit into our year’s activities and then put them into a calendar and ask for people to help with the organising of each
this will take about 2 hours.

My role is to manage the process and help you to document your ideas

(* suggest you start the session with an overview of the group’s activities for the previous year - what worked well / not so well; could also do a short presentation on what other groups are tackling)

RATIONALE

We want people to understand what is going to happen during the session, including.

- focus
- role of the facilitator
- steps in the process
- outcome / output
- why we are doing this how this
- will be used past this session

BRAINSTORM: GENERATING IDEAS

1. Start by asking for two or three examples of topics / issues. Use this to test that people understand the focus - write them up to prompt and remind people.

2. Write the brainstorm instruction on board/butchers paper.

3. List the 4 or 5 main topics/issues that you want explored by the group.(or “get these clear in your mind”)

4. Allow individuals 2 - 3 minutes to list their ideas to above instruction.

5. Ask people to work in teams of two or 3 to come up with a composite list of the 4 or 5 main topics / issues - use themselves to filter their lists. Does the wording need to be improved so that everyone can understand it? Cut out
duplicates and join two ideas that are essentially the same topic.

6. Go around the teams and ask for 1 idea from each team - print each selected idea on a board or ½ A4 paper

7. Ask if the group understands the topic/issue - use the actual words of each team or person when writing up. Try to avoid discussion of each idea)

8. Ask for and write up any additional ideas the group may have.

   Rationale
   - individual brainstorming allows some quiet thinking time
   - helps people identify their own ideas which leads to greater participation
   - examples help clarify the focus of the session
   - working in teams will help check people’s ideas for clarity and relevance to the focus. It also reduces the number of ideas that is put up.
   - going around the room to get 1 idea from each team allows everyone to have a say
   - numbering the cards makes the next step easier by providing an easy way to identify a particular card.
DISCUSS: CONSOLIDATING IDEAS

1. Spend 1 - 2 minutes discussing each idea listed on board using following criteria:
   a. “Duplication” - is this idea repeated?
   b. “Appropriateness” - is this idea relevant to our focus?
   c. “Singularity” - does this idea contain only one idea?

   The consolidation process is about eliminating ideas that are inappropriate or are duplicated in meaning as well as wording. The group also clarifies the meaning of ideas at this stage.

   If it is not appropriate, scratch it off the list - if not singular, break it down.

   In relation to the focus question, is this idea different to the others; is it a stand alone idea?”

   “What does the group understand to be the meaning or intention of this idea?”

   To do this it will help if you have the board set up in neat columns of ideas, with each idea numbered. If there are ideas that are simply different ways of saying the same thing - put the cards together with the one that says it best on top.)

Rationale

➢ The aim of this step is to ensure that you end up with a list of the different topics the group wants to explore.

➢ A danger here is that people are describing the same topic in slightly different words you will need to ask questions to clarify this. (such as: ‘Would you tackle these 2 ideas at the same time?’ - if so, put them together)
VOTE: ASSIGNING PRIORITY

To do this section you need to have determined prior to the meeting what criteria you want to use.

Do you want a rank order from most to least important? or, do you want to identify the group of ideas that are generally most important

One suggestion:

1. Ask people to vote for the most important one third of ideas:

2. For example, if there are 20 ideas on the board they are asked to place a mark next to the 7 most important for them

Inform participants of the number of votes available and how to use their vote.

3. Participants exercise their votes/points. You tabulate the totals.

4. Highlight the items that receive the top votes by placing them in priority order on the wall / board.

Rationale

➢ The aim of this step is to cull a large list down to those topics the group wants to focus on for the next 12 months.

➢ Be careful with prioritising - you often get “winners” and “losers” - try to avoid this as it may divide the group.

➢ Have each person do this from their perspective and not in their teams.

APPEAL: ENSURING CONSENSUS

1. Read aloud the top “x” items - “what are the votes / numbers telling us?”, “what did you expect the order to be?”

2. Ask if there are any items of importance that don’t appear on the top “x” list.

3. Put an asterisk against these items.

4. Negotiate the trade offs the group is willing to make.
Use questions and discussion here with the aim of ensuring that the group is happy with the priority identified amongst all of the topics

Authors Note:

At the end of the workshop, the facilitator will have a large number of ideas or issues that have been sorted by the group into themes that have been labelled, again by the group. This data was used as Phase One of my research.
Appendix Two. Questionnaire - Catchment Planning

This questionnaire is divided into three parts:

**Part A: Views of Catchment Planning Issues**

**Part B: Possible Ways to Improve Catchment Planning**

**Part C: Background**

**Part A: Views of Catchment Planning Issues**

1.1 Which of the following groups do you believe to be involved in catchment planning (please tick all relevant boxes):

<table>
<thead>
<tr>
<th>North Central Catchment Authority</th>
<th>Dept. Natural Resources and Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government (Shire)</td>
<td>Goulburn Murray Water</td>
</tr>
<tr>
<td>Parks Victoria</td>
<td>Urban Water Authority (Lower Murray Water)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

1.2 How effective do you think these groups are in catchment planning?

Please number from 1 (least effective) to 7 (most effective)

<table>
<thead>
<tr>
<th>North Central Catchment Authority</th>
<th>Dept. Natural Resources and Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government (Shire)</td>
<td>Goulburn Murray Water</td>
</tr>
<tr>
<td>Parks Victoria</td>
<td>Urban Water Authority (Lower Murray Water)</td>
</tr>
</tbody>
</table>

1.3(a) In your opinion, which group(s) should be responsible for catchment planning. Please number from 1 (least responsible) to 7 (most responsible)

<table>
<thead>
<tr>
<th>North Central Catchment Authority</th>
<th>Dept. Natural Resources and Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government (Shire)</td>
<td>Goulburn Murray Water</td>
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<td>Parks Victoria</td>
<td>Urban Water Authority (Lower Murray Water)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

1.3(b) In a few words, could you please explain - why

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

1.4 Do you see any of the following as being relevant to catchment management issues (please tick the relevant boxes)

<table>
<thead>
<tr>
<th>Weeds and vermin</th>
<th>Salinity</th>
<th>Floodplain Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage</td>
<td>Biodiversity</td>
<td>Waterway Management</td>
</tr>
<tr>
<td>Nutrient Management</td>
<td>Land Management</td>
<td>Social Issues</td>
</tr>
</tbody>
</table>
Part B: Possible Ways to do Improve Catchment Planning

Recently, workshops were conducted with three groups in the Loddon-Murray Area. The following questions are based on the outcomes of those workshops.

2.1(a) Do you think that there is good communication as far as catchment planning is concerned? (circle your response)

2.1(b) Do you have comments on communications regarding catchment planning?

2.2(a) Do you believe there is coordination between the various groups that you have listed as being involved in catchment planning in Question 1.4? (circle your response)

2.2(b) Do you have any comments on coordination between groups involved in catchment planning?

2.3(a) Do you think that community education is important in relation to catchment planning? (circle right response)

2.3(b) In what ways is community education important to catchment planning?
2.4(a) Do you think that leadership or direction is an important issue in catchment planning? (circle right response)

2.4(b) Where do you think the leadership should come from?
Please number from 1 (least appropriate) to 5 (most appropriate)

| Commonwealth Government (National Action Plan and the Natural Heritage Trust) |
| State Government (Natural Resources and Environment) |
| Regional Catchment Organisation (North Central Catchment Management Authority) |
| Local Government (Shire) |
| Community (Landcare, Salinity Management Groups) |
| Other |

2.4(c) Why do you think this group should provide leadership in catchment planning?
Part C: Background

The following information will be used to ensure that I have received information from a range of locations and a range of different people with different views.

3.1 What is your postcode?

3.2 What is your main job (for example, nurse, doctor, dairy farmer, grazier, public servant, retailer)?

3.3 What is your age? (Please place a cross in the relevant box)

- 70+
- 61 to 70
- 51 to 60
- 41 to 50
- 31 to 40
- 21 to 30
- 20 or under

3.4 What is your gender (please circle)

Male  Female

Closing

Do you have any thoughts or statements that you would like to make in relation to catchment planning?

Thanks again for your cooperation.

Could you please return the survey and consent forms in the stamped and self addressed envelope.
### Appendix Three: Data – Results Coded from the Responses to a Community Survey in the Shire of Gannawarra 2002

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<th>Q2.1b</th>
<th>Q2.2b</th>
<th>Q2.3b</th>
<th>Q2.4c</th>
<th>Conclusion</th>
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Appendix Four – Ethics Issues

Ethics

In 1998, the Commonwealth Government released the National Statement on Ethical Conduct in Research involving Humans (NHMRC 1999) that has strict rules that must be involved if research is undertaken that involves people. In 2002, the Victorian Government enacted legislation that details how the privacy of individuals and the public should be protected. Whilst not going into details about this legislation, the major impact on this project was how people’s names were managed and the management of personal data. During the workshops and the community survey, no personal details were sought. People were asked to sign a form indicating that they would participate in the workshops or survey. These forms have been filed separately and securely and cannot be linked to their responses either in the workshops or in the survey.

The semi-structured interviews required a more detailed process. Packages were sent to the employers of the people being interviewed. The package included a letter seeking permission to interview a particular officer with their organisation. This letter outlined my research approach and how data would be managed also stated that the name of the officer and the name of the organisation they worked for would not be mentioned in this thesis without their express permission. At the time of interview, the interviewee was given the same information and advised that the interview would be taped.

I also described how the tapes would be processed and that the tapes would be stored in a secure place. Finally, the interviewee was advised that they could terminate the interview at any time.
### Appendix Five – Location of Electronic Documents

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<tr>
<th>Document</th>
<th>Location</th>
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**Homepages**

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