Bridging Troubled Water:
Social Capital and the Snowy River

Jeanne-Hélène Adeland

Except where otherwise stated, this thesis is my own work.

Jeanne-Hélène Adeland (June 2002)

For Peter and Ghislaine, my constant sources of inspiration and strength.

Abstract

This thesis demonstrates that a major component for the successful engagement of communities is the level of social capital within communities. By examining social capital and perceptions of the Snowy River through a case study of three communities; Dalgety, Delegate and Jindabyne, this thesis finds three key elements that link social capital and communities together. The implications of these elements, sense of place, sense of community and locality within a community, greatly affect the community's social capital and therefore, their ability to engage in collective action and to assert themselves. This identified potential for engagement is crucial to a community's ability for collective action towards shared goals and participatory involvement in natural resource management.

Acknowledgments

Stepping back 12 months, about to begin my master's degree, I began to read as much about Australia as I could. However, just like this research, the literature meant much less then the experiences I lived. Social capital not only became my research topic, but I found it everywhere and I must thank those who have made this past year in Australia and at ANU especially wonderful.

I would like to thank my family; Peter, Ghislaine and Rosine whose words of encouragement and love have helped me to make it to the "finish line" relatively unscathed. And to my friends at home, who have always known just the right time to call or write, reminding me of the important things in life. Most especially of whom, Melissa, who has supported me from near and far. To the E4 crew who have granted me with great friendship, support, debate and who are always up for an adventure, I thank you all.

Thanks especially to my supervisor, Dr. Richard Baker, who has kindly and patiently provided his time and guidance, explaining the intricacies of Australian culture and academia. Thanks also to Jack who sat with me for hours bouncing ideas around, talking in circles and for just being there.

I am grateful to the Department of Land and Water Conservation, NSW for making it possible for me to conduct this research, and I am most indebted to Graeme Enders for welcoming me and teaching me about the Snowy Mountain Region.

Finally, I would like to thank the communities of Dalgety, Delegate and Jindabyne for their hospitality and warmth during my visits. A special mention must go to Julie, Ross, Elliott and Owen who provided me with a home away from home.

Table of Contents

List of Acronyms

AANF- Average Annual Natural Flows

ABS- Australian Bureau of Statistics

AWRC- Australian Water Resources Council

CFA- Country Fire Association

COAG- Council of Australian Governments

CPN- Community Participation Network

CWA- Country Women's Association

DPA- Delegate Progress Association

MDBC- Murray-Darling Basin Commission

SCI- Social Capital Initiative

SECV- State Electricity of Victoria

SERWMS- South East Region Water Management Strategy

SGCMC- Snowy-Genoa Catchment Management Committee

SMA- Snowy Mountain Authority

SMHS- Snowy Mountain Hydroelectricity Scheme

SRICCC- Snowy River Interstate Catchment Coordination Committee

SRRP- Snowy River Recovery Programme

WVS- World Values Survey

List of Tables

List of Figures

Introduction

"Eventually, all things merge into one, and a river runs through it"

(Maclean 1976: 6)

1.1 Research aim

Many communities in western developed countries are being asked to become involved in the development, implementation and monitoring of natural resource management. When effective, involvement has enabled communities to be more assertive in decisions that affect their local environments and in turn, their economies (Carr 2002: 6). This thesis argues that a major component for the successful engagement of communities is the level of social capital within the community. Identifying and assessing social capital in rural communities is therefore vital. This thesis provides an example of how such social capital can be identified through a case study of communities in the Snowy Mountains region and the Snowy River. In particular, this study focuses on local perceptions about the Snowy River and how these perceptions are shaped and relate to social capital. To further understand this relationship, the definition below illustrates the concept and importance of social capital within communities.

1.2 Defining Social Capital

There does not exist a simple, all-encompassing definition of social capital. However, there is a broad agreement that social capital is a resource based on relationships among people. Most definitions focus on the idea of membership in the form of networks and the norms that guide their interactions. Membership generates types of knowledge and trust, which in turn encourages norms of reciprocity and cooperation. An accepted definition, which is most conducive to the basic understanding of social capital, is Eva Cox's (1995:5) definition that social capital is 'the process between people

which establishes networks, norms and social trust and facilitates coordination and cooperation for mutual benefit'. Cox's definition is centred on achieving the greatest common good for societies and communities. She suggests that social capital is the social glue that makes up communities and that it must therefore be encouraged and fostered. Based on Cox's theory that the more social capital is increased, the more it is used (Cox 1995: 7), we then find ourselves asking how to encourage social capital within communities such as those along the Snowy River. To do this, we must fully understand the concept of social capital, the impacts of the Snowy Mountain Hydroelectric Scheme on the Snowy River and the communities that live along it.

Certain assumptions have to be identified and recognised when studying social capital. This thesis has assumed the following:

- social relationships influence how markets and states operate, and in turn are influenced by those markets and states;
- stable relationships among actors can enhance the effectiveness and efficiency of both collective and individual action;
- social capital can be strengthened and weakened;
- social relationships and institutions have good public characteristics and intentions (Serageldin 1998: 3).

1.3 Context and Relevance

The dramatic physical setting of the winding Snowy River is an appropriate backdrop for the contentions that surround the river. The story behind the Snowy River and the communities that inhabit its banks is as convoluted as its pathway. The Snowy Mountain Hydroelectric Scheme and the environmental plight of the Snowy River is currently a much debated issue in the region, but the Snowy River far transcends local importance; it is considered to be of tremendous significance, historically, culturally and environmentally, to many Australians. Whether it be the old image of the roaring Snowy River, or the stories of the cattlemen who lived in the high country, or perhaps the laborious construction of the Snowy Mountains Hydroelectric Scheme which played such a role in fostering Australian's national pride and confidence, the Snowy River's many faces all have tremendous importance to Australians, local and afar.

However, beyond the national significance of the Snowy, a very immediate problem exists. The environmental condition of the Snowy River has, in the last decade, surfaced as a highly topical issue. This is especially true as the Snowy Scheme is undergoing transformation from government-owned to a corporate entity. With the Snowy Water Inquiry complete and recommendations in place, the future of the Snowy River Corporation is seen by many, most especially by the communities that live by it, as a crucial opportunity to ascertain whether the environmental mistakes of the past can be rectified and whether the Snowy River can set an example for river management in the future.

1.4 Physical Setting

The Snowy Mountains, part of the Australian Alps and home of the Snowy River, are located in the Great Dividing Range, which runs 3000 km along the eastern Australian seaboard from central Victoria to Cape York in northern Queensland. The Snowy Region, located in south-eastern New South Wales, is the only part of the continent in which altitudes exceed 2000m, and in which there is a substantial area over the altitude of 1700m. It is also the home of the continent's highest mountains, the tallest of which is Mount Kosciuszko (2228m), which is blanketed in snow for up to six months of the year (EPA: 1995).

For most of the year, the prevailing weather pattern in Australia flows east from the Indian Ocean. The Snowy Mountains provide a natural barrier, resulting in orographic rainfall, which creates a higher amount of precipitation in the area, amounting to as much as 3000mm a year. The drainage from the snowfields flows in two directions: inland to the Murray and Murrumbidgee Rivers, and to the Bass Strait via the Snowy. The Snowy River is approximately 500km in length and begins from Mt. Kosciuszko. The river's path then travels down into the Monaro Tablelands, into the Gorge country, drifting through the Orbost flats, and finally pouring out into the Bass Strait (Seddon: 1994). Due to its dramatic topography, there is little access to the

river, as there is no continuous road that follows its winding path and only three bridges traverse its entirety. See Figure 1.1 of Snowy Region.
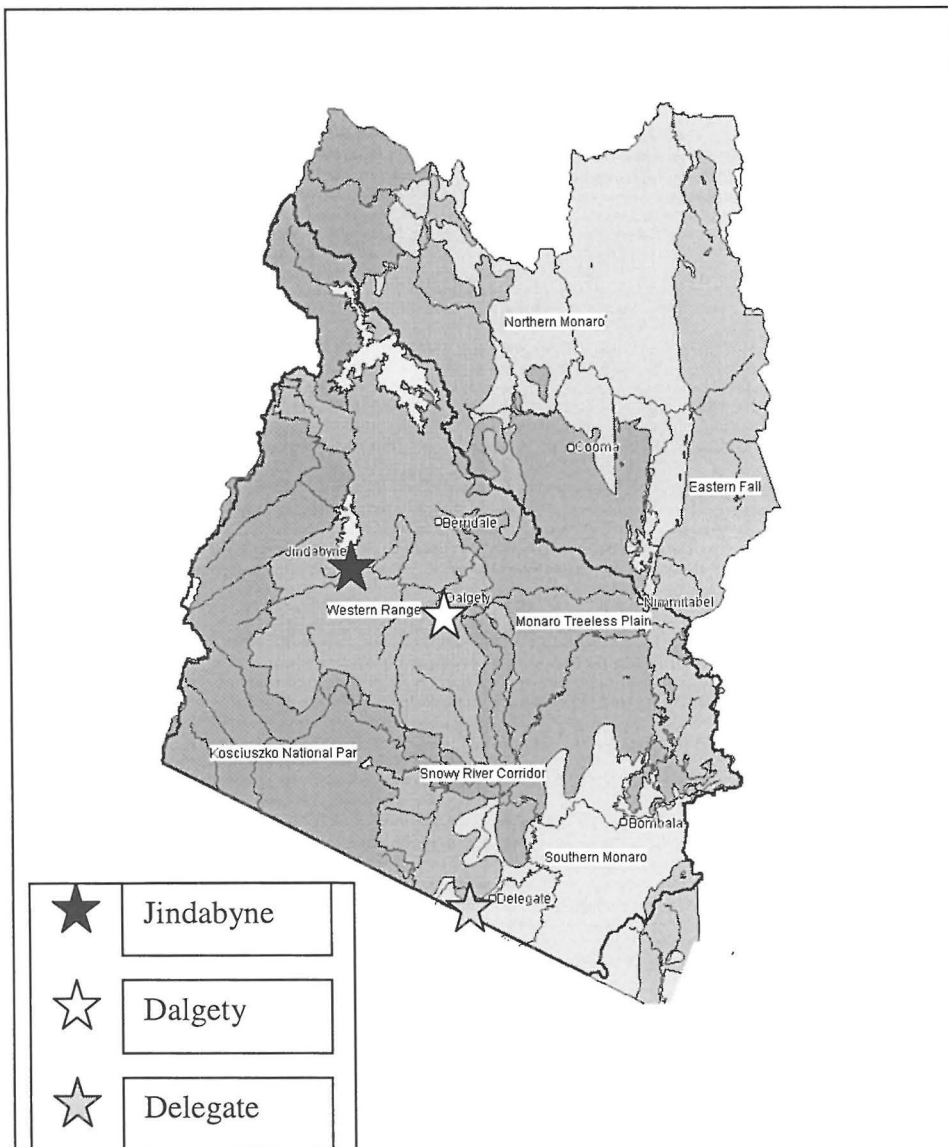
Figure 1.1- Map of Snowy Region

1.5 Australian water policy and management

The history of Australian water policy and management is an indicator of natural resource management attitudes that had prevailed in the past. To fully understand some of the environmental problems Australia faces today, we must explore past policy and legislation.

Water resource legislation in Australia can be traced back to Alfred Deakin, the Victorian Attorney General who instituted the first Irrigation Act in 1886. This Act was based on three controlling beliefs: 1) responsibility, care

and custody of the water can only be invested in the state, 2) the state's right to water must not be compromised by riparian rights belonging to anyone else, 3) and the rights of the individual and the state need to be properly defined in order to avoid lengthy and costly legislation. This Act set the path for future water resource legislation in Australia. Up until the late 1980s, no state had any form of a comprehensive plan for the development and management of its water resources (Smith 1998:32), however, a set of factors brought water management to the forefront.

The rapidly growing cost of water-resource development, high interest rates and rising inflation led to a more critical appraisal of all forms of capital investment including all water projects. It had also become increasingly apparent that salinity was a pervasive problem in many parts of the country and water-use conflicts began to emerge in both public and private sectors. Australian water planners were facing the problem of a water-resource base that was limited in its geographical distribution and highly variable over time. Balanced against this were the growing demands from an increasing diversity of uses and changing social values which ultimately determined who got water and for what use. Water planners were under mounting pressure from governments and citizens to progressively manage water (Sewell, Smith & Handmer 1985: 41).

In the past, academics and others had voiced the need for a new perspective for the management of water. However, it was not until March 1983, that particular attention was placed on the matter by the Commonwealth government in its study of the nation's water resources, entitled Water 2000: A perspective on Australia's Water Resources to the Year 2000. This study recommended specifically that the states should consider the preparation of a comprehensive water management plan. The Australian Water Resources Council (AWRC) advanced the idea further, requesting its Planning Committee to promote the exchange of information among the various states. Perhaps the most important government initiative was the National Conservation Strategy of 1984. This strategy, which was the result of the consensus of a debate

between all sectors of the community, dealt with key environmental matters including water (Sewell, Smith & Handmer 1985: 44).

In recent years, the federal government has developed a large body of environmental legislation, even though traditionally the States regulated their own environmental matters. Both state and federal environmental law may be characterised as containing two essentially contradictory forms of legislation which may apply to any situation: laws concerning conservation and the processes of environmental planning and protection; and those concerning the granting of development rights and access to natural resources. The effectiveness of environmental policy and systems depends on economic and political objectives and on the characteristics of the legislative and judicial branches (Handmer, Dorcey & Smith 1991).

The highly political nature of the Australian environmental law system needs to be appreciated in order to understand how it functions in practice. Australia has a federal system of government which has specific legislative powers and unspecified powers resting with the states. No specific power to make laws in relation to the protection and conservation of the environment has been vested in the federal government by the Constitution. As a result, the states have developed their own legislation in relation to pollution, nature conservation, land-use planning and natural resources, including water. Responsibilities for water, land, mineral and petroleum titles within the state reside with that states government. Despite this, the federal government has enacted a substantial body of environmental legislation which is then reliant on the states for its application (Handmer, Dorcey & Smith 1991: 34).

Potential for more extensive involvement by the Commonwealth in environmental management exists. It is now possible for the federal government to invoke the power to impose uniform standards with respect to pollutants and to regulate the environmental behaviour of corporations in Australia. However, the federal government has voluntarily limited its role by not seeking to impose blanket environmental standards, thus giving the states almost all the power of legislation in relation to all matters of environmental protection. In the future, this may change depending on community demand for

broader federal involvement in environmental matters (Handmer, Dorcey & Smith 1991:21).

Since the early 1990s, water resource policy and institutional arrangements have gone through rapid change, not seen since the Deakin water reforms. The changes are the result of the growth of the Australian economy and the more recent focus on the overall physical environment. The induction of the COAG (Council of Australian Governments) water reforms in 1994, comprised of an agreement between all states and the federal government, saw the first strategic framework for the sustainable management of water resources in Australia. As previously mentioned, under Australia's federal system of government, responsibility for natural resource management rests with the States and Territories. However all governments, including the Commonwealth, recognised the need for coordinated action and as a result, in 1994, they developed a national policy for the efficient and sustainable reform of Australia's rural and urban water industries. In the development of this framework, COAG focused on designing a consistent approach to water reform throughout Australia. Within the framework, flexibility exists for each of the States and Territories to adopt their own approach to water reform (AFFA: 2002). COAG water reform was developed under the assumption that the aforementioned public-sector model was inefficient and that the use of private-enterprise business practices would lead to better management and financial benefits (Smith 1998: 264).

The COAG water policy dealt with several issues, however, the two key recommendations and outcomes related to water pricing and the need to balance water allocations and aquatic ecosystems. The main aims of COAG are to promote substantial micro-economic reforms that are integrated with the principles of ecological sustainable development. In practise, this has resulted in ad hoc environmental modifications, but nonetheless represents a massive nation-wide re-writing of policy (Smith 1998: 263).

In theory, water reform is a progressive step towards positive management, but has not prevented problems from arising. An integral part of the COAG reforms, pertinent to this thesis, is the requirement that each state

must produce catchment plans to optimise environmental sustainability. From a scientific viewpoint, there are enormous differences between catchments, leading to much confusion and difficulty in designing one simple framework. However, it is crucial to note that the acceptance of the COAG recommendations by all states and the federal government has represented a major advance in the management of the nation's water (Smith: 1998).

There remains no river-specific management framework within COAG. There are indeed examples of river management in Australia, such as the Murray-Darling Basin Commission (MDBC), which is a multi-state and federal government initiative and the multi-state Border River Agreement between NSW and Queensland both of which have been developed to deal with case-specific issues. Legislation for the Border River Agreement is being developed in both states, and recognises the need for a framework focusing on sustainable allocation and management of water resources. This framework came out of a decision made in 1995 by the Murray-Darling Basin Ministerial Council to cap water diversions in the basin and from the influence of the COAG water reforms. In 1995 an audit was commenced regarding water use in the Murray-Darling Basin. The audit showed that if the volume of water diversions continued to increase, this would exacerbate river health problems, reduce the security of water supply for existing irrigators in the Basin, and reduce its reliability during long droughts. A limit, called the Cap, was therefore imposed on the volume of water which could be diverted from the rivers for consumptive uses (MDBC 2002).

While the Cap restrains further increase in water diversions, it does not constrain new developments, provided the water for them is obtained by using water more efficiently or by purchasing water from existing developments (MDBC 2002). This type of specific water management is the first of its kind in Australia and is touted as good environmental policy-making, perhaps something that should also be considered for the Snowy River and its catchment.

The study of social capital within communities facing an environmental issue requires an understanding of the past and current natural resource

management legislation. An awareness of Australia's water resource policies and legislation allows us to have a deeper comprehension of the natural resource management problems that Australia faces today.

1.6 Thesis structure

This section provides an overview of the thesis structure.

Chapter Two discusses my methodological approach, including research theory and principles, the selection and use of three case studies, and the methods involved in data collection and data analysis.

Chapter Three outlines the history of the Snowy Mountain Hydroelectric Scheme and Snowy River Region.

Chapter Four examines the recent developments of the Snowy Mountain Hydroelectric Scheme and Snowy River.

Chapter Five develops the theory of social capital and its relationship within a community context.

Chapter Six explores the varying techniques and ways of measuring social capital within communities.

Chapter Seven applies the theoretical framework to a case study, placing the theory discussed in Chapter Six into a tangible physical and social situation. Chapter Seven then explores the findings of the surveys, interviews and research in relation to the case study communities and provides an analysis of key findings.

Chapter Eight concludes the study. This chapter focuses on the importance of understanding and exploring social capital in communities and suggests further research areas.

Chapter Two
Methods

Overview

The following chapter describes the methodological issues of importance to this study:

research principles;

research design;

data analysis; and

limitations of the research.

2.1 Research Principles

"Different kinds of information about man and society are gathered most fully and economically in different ways" (Trow 1991: 33).

This study is based on data relating to a complex issue involving different case studies, settings and informants. To best explore these issues, I have utilised data based on qualitative and quantitative data. Preissle defines qualitative data as:

"Qualitative research is a loosely defined category of research designs or models, all of which elicit verbal, visual, tactile, olfactory, and gustatory data in the form of descriptive narratives like field notes, recordings, or other transcriptions from audio- and videotapes and other written records and pictures or films" (Preissle 1992: 11).

The analysis process used in qualitative research involves placing pieces together to make a whole picture of a situation. From this process "meaning" or "data" evolves. However, because perception varies with the individual, many different meanings are possible. This holistic approach is considered a benefit to my research. According to Marshall and Rossman (1989:48), qualitative approaches to research are based on these following beliefs:

1) There is not a single reality.

2) Reality is based upon perceptions that are different for each person and change over time.
3) What we know has meaning only within a given situation or context.

Quantitative data was also included in my research. Trochim defines quantitative data as: "a formal, objective, systematic process in which numerical data is utilised to obtain information about the world" (Trochim 1999: 7). The quantitative approach in this study measures the reactions of a great many people to a limited set of questions, thus facilitating comparison and statistical aggregation of the data whereas qualitative data provides depth and detail through direct quotation and description.

Combining qualitative and quantitative methods is almost by definition an issue of across-method triangulation. Kelle (1995: 3) distinguishes three meanings of triangulation: triangulation as the mutual validation of results obtained on the basis of different methods triangulation as a means toward obtaining a larger, more complete picture of the phenomenon under study and triangulation in its original trigonometrical sense, indicating that a combination of methods is necessary in order to gain a picture of the relevant phenomenon.

Qualitative and quantitative research both deal with real phenomena and with social processes and they both have to ascribe meaning to their data. Rather than sequencing qualitative and quantitative research, Fielding & Fielding (1986:17) view both approaches as essentially inter-related, with quantitative research contributing towards the precise identification of relevant processes, and qualitative research providing the basis for a more detailed description. What makes triangulation possible is if methods are systematically understood and rigorously used through which points of connection can be identified such that both types of methods are addressing the same phenomenon (Eyles 1988: 13).

2.2 Research Design

The contentious Snowy River debate became an issue of relevance and interest to me after visiting the river in September 2001. After further investigation into the issues that surrounded the river, I became interested in pursuing the subject in conjunction with the concept of social capital. I began to construct a research design to measure social capital in different communities. My research was designed around the use of surveys, interviews and secondary data. My literature review of the Snowy River, the Snowy Hydroelectric Scheme and the concepts of social capital created a foundation from which to build my surveys and interview questions.

2.2.1 Social capital indicators

Measuring social capital was a primary difficulty. As discussed in Chapter Four and Five, there are many esteemed authors who have argued for and against the quantification social capital. Those who have written in support of measuring social capital have proposed a plethora of methods to do so. As time constraints created a major limitation into the extent of which I might be able to measure social capital per case community, I endeavoured to model my measurement indicators after Grootaert (1998:7). His method of measurement was most conducive to my research as he explored the use of qualitative and quantitative indicators. Thus I limited my study to three indicators: trust, economic and membership, in the belief that they would provide a good cross-section and triangulation of data. Once the indicators had been identified, a survey and a list of interview questions were then constructed.

2.2.2 Surveys

To establish a rigorous test to ensure quality data from each case community, a survey (see Appendix A) was designed to illuminate the feelings and perceptions about the Snowy River and measure social capital. Defined by May (1997), a survey is: "A method of gathering information from a number of individuals, a 'sample' in order to learn something about the larger population from which the sample is drawn" (May 1997: 82).

The main advantages of using a survey in my research was that it allowed me to obtain a high volume of information in a non-threatening manner, it was inexpensive, time efficient and anonymous.

As mentioned above, two main themes were investigated in the Snowy River Survey: social capital and the local community's perceptions of the Snowy River. Indicators previously selected for this study were then incorporated into the survey. Eight of the questions in the survey were designed to gauge social capital, using the pre-determined indicators and modelled after the World Values Survey (WVS) questionnaire. The WVS was a study conducted to quantitatively assess social capital in countries around the world employing several indicators, including: trust, civic trust, associations and organisations and charities.

To research my topic effectively, a self-completion attitude survey was designed. Obtaining individual's perceptions on a particular topic was crucial to this project, which led to the design of an 'attitude survey'. According to May (1997), 'attitude surveys' are surveys for gaining data on attitudes about a specific topic or area of concern and is a shift away from the traditional foundation of factual surveys. This kind of survey enabled me to identify the relationship between people's attitudes and behaviour within a specified context (May 1997: 84).

Although it is widely accepted that it is impossible to remove all bias from a study, efforts were made to avoid as much bias from the research process as possible. To achieve this, the method of standardisation was employed. This refers to the way in which the survey was designed; exactly specifying the wording of the questions to be asked, how they are being asked and how the responses are to be tabulated. This ensures that the variety of answers is a true difference rather than a result of how the question composed (May 1997: 90).

2.2.3 Semi-structured interviews

To complement on the information obtained from the self-completion attitude survey forms, I carried out semi-structured interviews. The interview

approach I adopted was consistent with the description of the semi-structured interview, where questions are standardised but the interviewer is more free to probe beyond the initial answer (May 1997: 111-112). Since the research subject was somewhat personal to the individuals interviewed, I found it most beneficial to employ this interview style as it allowed interviewees to engage in a more conversational atmosphere and respond more openly. Because the interviewees were encouraged to elaborate, the data gathered through these means provided a greater insight into the underlying issues. A copy of the standard interview questions can be found in Appendix B.

Ethically, all interviews were conducted under the strictest conditions put forth by the Australian National University's Human Ethics Committee. Each interviewee signed a letter of consent which included a description of the project, their option for anonymity, and all interviews were conducted in privacy. A copy of the human ethics application for my research is in Appendix C.

2.2.4 Case Studies

A case study approach was most conducive for a comparative study of perceptions of the Snowy River. The case study method allows for the enrichment of the knowledge obtained about the individual, organisational, social and political phenomena (Yin 1985: 14). The benefits of using this approach allows the researcher to understand social interactions while retaining the holistic and meaningful characteristics of real-life events and creating a context from which to interpret the gathered data. A case study is an experimental inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident and multiple sources of evidence are used (Yin 1985:23).

For the successful understanding of how the communities perceive the Snowy River, case study analysis was necessary. Only through this contextual medium can the researcher fully understand and depict an individual's experience. Multiple case studies, as utilised in this study, allow for a comprehensive examination through comparison. The advantages to the

multiple case study technique found in this research is the ability to fully depict an experience.

The first phases of community assessment determined which communities to study was those communities who had a relationship with the river. This relationship was defined as either a geographical connection or a more personal relationship based on heritage, history or economics. The second step was to conduct a broad community profile of the towns that found to have a relationship with the Snowy River. Specific criteria and indicators were then used to crudely assess the existence of social capital. The most visible indicator of social capital within a community was the establishment of volunteer-based organisations. In this instance, Dalgety was the most visible as the Dalgety District Community Association has been active in the Snowy Mountain Hydroelectric Scheme debate. The Delegate Progress Association has also been active in their community, as they had recently secured funds for a Community Hall. The town of Jindabyne fulfilled the first criteria of having a relationship with the river, but most importantly, Jindabyne was chosen as a contrast to the other two communities as Lake Jindabyne brings many visitors to the area, so it might be assumed that they rely on the Scheme for economic benefit. Aside from these calculated variables, it is most important to note that only upon visiting these communities could the feelings of community, cohesion and sense of place become truly apparent. However, beyond their common regional geography, the three communities all have varied histories and environmental and social settings. This variation is what gives this study the cross-section of perceptions that is needed to accurately access social capital within the Snowy River context.

2.3 Data Analysis

Data analysis is the process of ordering, structuring, and giving meaning to this mass of collected data (Marshall and Rossman 1989: 111-112). As illustrated in section 2.2, a large amount of data was collected throughout the course of this research. There were two forms of data analysis completed for this research. The first was secondary analysis, most of which was

completed before commencing my primary data collection. This formed the foundation of the theoretical aspects to my research. This process is referred to as "sensitising". The researcher is responsible for bringing sensitised concepts to the data, which have their origins in literature and theory. Therefore, before commencing primary data collection, a "general sense of reference" had been formed (Patton 1990: 391-392).

The secondary data analysis consisted of a literature review of relevant information pertaining to: social capital as a concept and its measurement; the Snowy River and environmental reports; and the Snowy Mountain Hydroelectric Scheme. There exists a rather significant amount of literature on these topics. However, the value and quality of the literature was taken into consideration to ensure that the most pertinent information was included. Therefore, because of the selectivity process, the literature review focuses upon academic research and government publications.

In the analysis of the surveys and interviews, the method of "sequencing" was used. Specifically, "sequencing" is the method where qualitative and quantitative methods are employed within one and the same study, although in different phases of the research project (Mayring 2001: 3). Throughout the data analysis phase of my research, many qualitative responses from the survey were quantitatively coded for the ease of identifying frequencies and patterns, this technique is called qualitative thematic coding. This enables the researcher to statistically correlate information pertaining to the project using descriptive data.

2.4 Limitations of Research

While attempts were made to ensure the integrity of the research, several unavoidable limitations may have influenced the outcome of this study. Some statistical data such as age and average household income, was unavailable due to the small size of Dalgety and Delegate. Census information for those towns was agglomerated within their shires, therefore, not distinguishing data per community.

Time to conduct the study was constrained to 4 months, therefore forcing me to limit my study to only three indicators. Although these indicators are most pertinent to the understanding of the communities, a more intensive research period would accomplish a more detailed study.

Not withstanding these limitations, the approach taken has provided a wealth of information that is explored in the subsequent chapters.

Chapter Three
Snowy Mountain Hydroelectric Scheme and Snowy River Region Background

Overview

To understand the intricate relationship individuals have with the Snowy River and how their perceptions have been shaped, an explanation of the history behind the Snowy Mountain Hydroelectric Scheme and the Snowy River is vital. This chapter outlines the history and development of this enormous project, the environmental effects the Scheme has had on the river and presents a historical background of the case study communities.

3.1 History of the Snowy Mountain Hydroelectric Scheme

Pre-existing interest in the diversion of the Snowy River for irrigation dates back to the Lyne Commission in 1884, initiated during a severe drought. However, it wasn't until 1908, while looking for a site suitable for the federal capital, that the potential for generating hydroelectricity was examined. Throughout the first half of the 20th century, various proposals were put forward which dealt with either the Snowy River's suitability for the generation of hydroelectricity or possible diversion schemes for irrigation purposes (Smith 1998: 17).

In 1943, the Rural Reconstruction Commission investigated the organisation and rehabilitation of the Australian rural economy during the post war period. It found that irrigation was essential for agricultural growth and the long-term economic benefits were expected to increase productivity and thus increase population (Smith 1998: 23).

During World War Two, the construction of new public works had slowed. H.C. Coombs, the Director-General of the Department of Post-War Reconstruction, introduced a new uniform tax, with the original intent to be a temporary wartime measure. This tax allowed the federal government to assist the states with special grants for projects that would be considered nationally important and too large for individual states to fund themselves (Smith 1998: 21).

An irrigation and power scheme had been previously initiated and, in 1947, a joint Commonwealth, New South Wales and Victorian government technical committee was formed to look into possible uses for the Snowy River. As a result of this committee's recommendations the Commonwealth government passed the Snowy Mountains Hydroelectric Power Act in 1949. The Act established the Snowy Mountains Authority and was chartered to develop the waters of the Snowy Mountains Area for the production of electricity, and to divert water from coastal rivers through trans-mountain tunnels to augment the catchments of the Murray and Murrumbidgee Rivers for additional irrigation purposes. The Authority was also empowered to supply electricity to the Commonwealth Government 1) for defence purposes, 2) for consumption in the ACT, and 3) to supply to any State any electricity surplus for the aforementioned purposes. Certain resolutions were adopted in July 1949 between Ministers of the Commonwealth and States with respect to the development and use of the water resources of the area for the generation of electricity, the provision of water for irrigation and the sharing of water between the States (Collis 1990: 111).

One of the earliest tasks of the Snowy Mountains Hydroelectric Authority was to survey the region and collect hydrological and geological information. Additional to the gathering of technical data, infrastructure to support such an undertaking had to be built and developed. Stores, workshops, offices and accommodation did not yet exist in the area and were badly needed. As it was post-wartime, much of the building materials needed to be imported from overseas. Communication networks needed to be developed over the area as well as road systems, camps and townships. Approximately, 1600km of roads were constructed, townships and camps were established and community services and amenities were organised and developed (Collis 1990: 113).

A complex agreement regarding the construction, operation and distribution of power and water charges was entered into with the States of NSW and Victoria, as well as to the manner of operating the Scheme. This was incorporated into the Act in 1958, just prior to the interlinking of the Snowy Scheme with Victoria, hence interconnecting the two State systems for the first

time. The agreement also resolved differing opinions as to the constitutional powers of the Commonwealth Government with regard to the water resources of the Snowy Scheme. Under the provisions of the agreement, the Commonwealth Government made a reservation of 670 GWh from the energy output of the Scheme of just over 5,000 GWh per annum, the remainder being shared 2:1 between the States of New South Wales and Victoria (Collis 1990: 90).

Hundreds of kilometres of transmission lines now interconnect the power stations and transmit electricity to the supply systems of New South Wales and Victoria. The Snowy Mountains Scheme diverts the waters of the Snowy River and its tributary, the Eucumbene River, through two trans-mountain tunnel systems driven westwards under the Divide to feed the two inland rivers, the Murray and Murrumbidgee, with increased supplies of water to expand irrigation. In their passage the waters fall 800 metres through shafts, tunnels, and power stations to generate peak-load electricity for the Australian Capital Territory, New South Wales and Victoria (Smith 1998: 143).

3.2 Environmental Effects

The diversion of the Snowy River's water flow for irrigation and hydroelectricity production has had extensive environmental impact as well as social and economic effects. The redirection of the river's path included four dams that were built for the Scheme in the headwaters of the Snowy River; the Eucumbene Dam on the Eucumbene River, Guthega Pondage, Island Bend Pondage and Jindabyne Dam on the Snowy River. A series of aqueducts and tunnels link these reservoirs to each other and to other dams in the Scheme. The original downstream flow of these river channels between the dams is now considered virtually non-existent (EPA 1998).

Jindabyne Dam is the farthest downstream regulation structure on the Snowy River. Current releases from the dam were determined in 1960 by the then NSW Water Conservation and Irrigation Committee based on the needs of the riparian users downstream, this assessment does not include the amount of flows needed to sustain ecosystems downstream of Jindabyne. At the time, it

was determined that a minimum flow of 24.5 ML/day at Dalgety would suffice. Presently, the flow has doubled to 50ML/day at Dalgety, however this is still considered too low for ecosystem health and sustainability. (EPA 1998).

The Mowamba River, a tributary of the Snowy about 2 km downstream of Jindabyne Dam, has been diverted into Lake Jindabyne where as before the Scheme it would have flowed into the Snowy River. As the Mowamba River is diverted directly into Lake Jindabyne, the next largest inflow into the Snowy is the Delegate River. Below the Delegate River confluence flows still show a marked impact from the Scheme indicating the extent of which the Scheme has impacted the river (EPA 1998).

The major visual impacts of the changed flow regime can be found in the channel of the Snowy River between Jindabyne Dam and the junction of the Delegate River. This radical change in channel morphology composition has altered the aquatic community in this part of the river. Beyond the change in aquatic population and diversity, the channel has dramatically changed in size and is now overgrown by exotic vegetation such as willows and blackberries (Finlayson et al. 1994).

Yet another impact, prevalent in the lower catchment is salinity, which has been found along the mouth of river and the flood plain. Irrigators and land holders estimate that the saline wedge associated with the river mouth has progressed from approximately 10 km to 17 km upstream as a result of the increased frequency of low flows. The Snowy River Interstate Catchment Coordination Committee (SRICCC) reports that increased salinity in the lower Snowy is affecting about 550 ha of farm land, causing a loss in agricultural production in the order of $4M annually. SRICCC (1993: 10) reports that the reduced frequency of flushing flows has increased sediment in the lower Snowy River and reduced the number and depth of water holes. This is thought to be a critical factor in the breeding of Australian bass (SRICCC 1993: 11).

Other identified environmental impacts have included:
the substantial loss of connectivity along rivers and between the river and catchment;

the substantial loss of connectivity between alpine and sub-alpine streams and major montane river reaches and;

the resultant changes to stream morphology, habitat and aquatic riparian biota (Rutherford 2002).

As briefly illustrated above, the environmental effects of the Scheme have been substantial to the riparian ecosystem. The communities in the Snowy Region have felt the brunt of these effects not only environmentally but socially and economically. This thesis, as outlined in Chapter Two, deals with three case study communities and in the following section, an historical background of these communities is provided for a better contextual understanding.

3.3 Historical Background of Case Study Communities

History shapes our cultural norms. A community will react to a crisis or issue in certain ways depending on their experience. Therefore, a brief explanation of the case study community's history and development is crucial to the deeper understanding of how these communities have shaped their perceptions regarding the Snowy River.

3.3.1 Delegate

The town of Delegate with its population of approximately 450 people (ABS 2002), is located 546 km south of Sydney in the south east corner of New South Wales. Delegate has a reputation as one the finest trout fishing destinations in New South Wales. The partially unsealed road from Bombala runs through Delegate and continues to Orbost in Victoria's East Gippsland (DPA 2001).

Delegate was established by a number of explorers who moved through the area looking for suitable grazing land, bringing herds of cattle into the fertile plains of East Gippsland. By 1830 George McKillop had travelled through Delegate and established a substantial holding in East Gippsland. He was followed in 1835 by Angus McMillan who became one of the largest East Gippsland landowners (DPA 2001).

Delegate Station, which was the starting point for many of these expeditions, was one of the earliest runs on the Monaro. It had been established by Robert Campbell in the late 1820s and it subsequently gave its name to both the local river and the small township which grew up beside that river (DPA 2001).

3.3.2 Dalgety

Considered as a possible national capital in 1904, Dalgety is located on the Snowy River some 51 km from Cooma, 452 km from Sydney and 760 metres above sea level. It was originally known as Buckley's Crossing after Edward Buckley who moved into the area around 1832. The name of the town was changed to Barnes Crossing when a man named Barnes moved into the area in 1848. It was, at the time, the only safe crossing of the Snowy River. By 1864, after the gold rush, the town's population decreased to 23 people and had a punt operating across the river. The town was surveyed in 1874 and officially named Dalgety after the maiden name of the wife of the surveyor (Pers. Comm. Julie Greenwood: March 2002).

Today, Dalgety is a small town with approximately 40 houses. The bridge that crosses the river was originally built in 1888 but has been washed out three times and rebuilt each time by the Snowy River in flood (Pers. Comm. Julie Greenwood: March 2002).

3.3.3 Jindabyne

Jindabyne is currently a popular winter holiday destination on the edge of the Snowy Mountains because of its proximity to the major ski resorts in the Snowy Mountains and the facilities it offers to trout fishermen. Modern day Jindabyne is a new town created after the original settlement was drowned by the Snowy Mountains Hydroelectricity Authority in the late 1960s. Located 61 km from Cooma and 462 km from Sydney, it is 991 metres above sea level.

Although not the first settler to Jindabyne, Sir Paul Edmund Strzelecki is an important part of the history of Jindabyne. He born in Poland on 20 July 1797, arrived in Australia on 25 April 1839. From 1839 to 1843 he explored and surveyed vast areas of New South Wales, Victoria South Australia and Tasmania. While exploring in the Snowy Mountains region he discovered and climbed Mt. Kosciuszko which he named in honour of the Polish leader and patriot Tadeusz Kosciuszko. He discovered gold and silver in New South Wales, coal deposits in Tasmania, investigated the possibilities of irrigation, measured the heights of mountains, carried out soil analysis and collected and identified many fossils and minerals. The gold rush in 1859-60 gave Jindabyne an economic and population boost which resulted in the opening of a general store, post office, school and police station between the years of 1862-1882. (Seddon 1994:114-115).

Understanding the past to make sense of the present is crucial when investigating communities and their perceptions, feelings and norms. With an understanding of the context within which this research exists, we can then better explore the recent developments of the SMHS and the Snowy River and how these recent changes have affected the communities.

Recent Snowy Mountain Hydroelectric Scheme and Snowy River Developments

Overview

The contemporary history of the Snowy Mountain Hydroelectric Scheme is almost as intricate and complex as the engineering feat itself as briefly discussed in Chapter Three. The past decade has shown a resurgence of interest in the Scheme, as a result of many intervening events. The corporatisation of the Snowy Hydroelectric Scheme, a shift in government interest in rural communities, a growth in community catchment and landcare groups and general community environmental awareness have all contributed to the current contentious surrounding the Snowy River.

4.1 Corporatisation of the Snowy Scheme

Corporatisation is the process of transforming a government-owned authority into a commercial corporation, in this case operating under NSW Corporations Law. The objective of corporatising business enterprises is to provide a business structure which is run by a board of directors and is liable to shareholders for achieving commercial objectives. With regard to the Snowy Mountains Hydroelectric Authority, corporatisation means that the organisation will become a corporation jointly owned by the Commonwealth, New South Wales and Victorian Governments. Corporatisation of the Snowy Mountains Hydroelectric Scheme has been enabled by the passage of legislation in the NSW (1997), Victoria (1997) and the Commonwealth parliaments (1997). However, the actual implementation of corporatisation is still pending (EPA 1998).

In the passage of the NSW legislation, the Legislative Council ordered a Snowy Water Inquiry into the circumstances of water management by the Scheme, and particularly the potential to deliver environmental flows to rivers completely diverted by the Scheme. The three governments had to agree on the

Inquiry's outcomes before corporatisation could take place. The Inquiry's primary goal was to provide for a viable business enterprise and balance this with the competing needs of irrigation supply and environmental flows. The Inquiry attracted a lot of media interest, because of the social, environmental and economic implications of amending the diversion and management of rivers across the Scheme (Pers. Comm. Graeme Enders, April, 2002).

The Inquiry took a quantitative approach to measuring environmental flows and impacts (SMHS 2001). The Inquiry's Scientific Reference Panel defined the likely outcomes of a range of options between 6%-28% of Average Annual Natural Flows (AANF) returned to the Snowy River, staged over a ten year period. The Inquiry recommended a flow of 15% AANF, however subsequent negotiation between governments to further recognise the social and ecological factors raised this to an indicative 21% AANF. This was to be funded by the NSW and Victorian Government investment of $300m in water efficiency savings in the western irrigation areas. Flows restored to 28% were agreed as a target for the Snowy River, although achievement of these would depend on private, corporate or philanthropic investment (Pers. Comm Graeme Enders, April 2002).

In the past, the Snowy has operated on a cost recovery basis, receiving income from the State Electricity Commission of Victoria (SECV), Pacific Power and ACTEW Corporation equal to the costs of operation. The Scheme has not repaid the approximate $900m of Commonwealth Government loans raised for its construction, and retirement of this debt is a key corporatisation objective. In the future, the corporation will be responsible for its management structures and long term planning, earning its own income through the sale of energy and related services, and managing its own business costs (Pers.Comm. Graeme Enders, April, 2002).

Once corporatisation has taken place, the Snowy will become a self-supporting corporation jointly owned by the Commonwealth (13%), NSW (58%) and Victorian (29%) governments. The ratio of ownership after corporatisation is based on the current ratio of existing electricity entitlements. The corporation will have the full responsibility for managing water supply

agreements and electricity contracts. Income for the corporation will be derived from the sale of electricity to customers in New South Wales, Victoria, South Australia and the Australian Capital Territory (SMHS 2001).

4.2 Recent Developments

Certain crucial catalytic developments in the past few years have occurred which has changed attitudes about the Snowy River. As previously discussed in this chapter, corporatisation has been a major change receiving tremendous media coverage and bringing the SMSH issue to the forefront. However, beyond corporatisation, several important events has contributed to the awareness and debate over the Snowy River including government interest, Snowy River community-based action and the Snowy River Recovery Programme. This shift in awareness and momentum is most important to understand, as it illustrates the social climate in context for this study.

4.2.1 Government interest and involvement

The shift in government interest in rural communities came at a time when environmental issues began to take precedence. In Australia, rural communities rely economically on pastoralism and agriculture. In recent years, problems of soil salinity and other forms of environmental degradation have led to an increasing focus on rural Australia. Politically, rural communities have become more engaged in active political processes and rural electoral seats have become important in the achievement of government for political parties. A recent and most significant example of this is Victorian MP, Craig Ingram, who was voted in by rural East Gippsland. His election platform was simply to restore water back into the Snowy River. Ingram along with the Victorian Premier, Steve Bracks and New South Wales premier, Bob Carr have collaborated closely on outcomes regarding the Corporatisation of the Snowy Hydroelectric Scheme, and particularly the Snowy River environmental flows (Pers. Comm Brett Miners, March 2002).

The premiers of Victoria and New South Wales have committed $300 million dollars for investment in 21% environmental flows, to be found by reducing wastages in irrigation systems, and not by removing irrigator's water

entitlements or removing energy producing capabilities from the Scheme itself (Pers. Comm Brett Miners, March 2002). According to "The Australian" Newspaper's Alison Crosweller (April 20-21, 2002), the current plan is to return water to the Snowy River by the middle of the 2002 via the Mowamba aqueduct which is currently diverting it.

4.2.2 Snowy River Reports

Numerous reports, many of which have been community efforts and/or Catchment Committee initiatives, have been written detailing different problems with the Snowy River. In the late 1980s, the Snowy River Interstate Catchment Coordinating Committee's (SRICCC) investigated major issues including sedimentation, extended periods of low flood and poor water quality, increased salinity and bank erosion in the lower Snowy River, degradation of riparian and estuarine wetland vegetation and willow invasion. This was the first formal report of problems in the Snowy River from community members, which encouraged other reports of its kind (Pers. Comm, Graeme Enders, April, 2002).

The SRICCC produced another report in 1993, entitled "Resource Management Issues in the Snowy River Catchment". This report concluded that the diversion of the water in the Snowy had substantially contributed to many of the issues detailed in the first report and seriously impacted on the river and floodplain values. It also recommended that flow requirements for the Snowy River be reviewed as well as catchment and riverine investigations (SRICCC 1993).

In 1995, the South East Region Water Management Strategy (SERWMS) facilitated a workshop from which a summary of the group discussions was compiled. This was the first overt government and community collaboration on this issue. This was particularly important, as it was an opportunity for communities to relay directly to the government their feelings about the Snowy Scheme and the impacts they have experienced. In terms of the Snowy River, the main issue brought out in this discussion was the need to identify the river's environmental flow requirements below Jindabyne Dam,

have more water released from Lake Jindabyne, improve water quality to meet environmental needs and to boost eco-tourism (SERWMS 1995).

In 1996, the Snowy-Genoa Catchment Management Committee expert panel report on the ecological condition of the Snowy River was published. This was considered a particularly valid report because it was developed without Snowy Hydro Scheme involvement, therefore it was seen as impartial. This report was presented to the community and generated tremendous interest. It increased the legitimacy of the flows agenda, and gave the issue a strong platform to stand on. Following this report, the Snowy-Genoa Catchment Management Committee developed and published a Natural Resource Strategy outlining major environmental issues in the catchment area (SGCMC 1996).

These reports and community efforts have contributed to the development of a government initiative to help restore the Snowy River. The concept of government and communities working together for a desired goal is an admirable one.

4.2.3 Snowy River Recovery Programme

The substantial community interest and the investment by governments in Snowy environmental flows led to the creation of the Snowy River Recovery Programme, a NSW Premier's Department initiative that aims to integrate the environment benefits of river rehabilitation and environmental flows with community and economic outcomes. This program had four themes:

- Government Focus - integrating activities of NSW agencies and inter-state government actions towards management of the Snowy River as an entire entity.

- River Rehabilitation - physical works to improve the river channel and flows and the management of the ecological conditions of the river and its catchments.

- Strengthening Communities – identifying opportunities to link the benefits of increased flows with positive community activities.

- Improving Economic Capital – identifying opportunities for investment and growth of economic activity associated with the Snowy River.

(Pers.Comm. Graeme Enders, April, 2002)

Having outlined the current Snowy River situation, it is appropriate to now further our theoretical investigation of social capital as the vehicle to comprehend how perceptions of the Snowy River are shaped. The role of social capital within communities is most relevant as we explore how social capital is a crucial element for the successful engagement of communities in natural resource management.

Social Capital Theory

Overview

The study of social capital within communities is particularly timely, as economic decline within small communities is an increasing problem within Australia. The cornerstones of these communities, such as the local hotel, school, church, clubs and shops are slowly slipping away and those that remain are struggling for a more secure foothold on very perilous standing. Coupled with the ease of access to urban centres, much of rural social life has been lost, leaving some farming communities socially isolated and removed (Carr 2002:3).

This chapter discusses how certain main elements of social capital are key to understanding and enabling of community groups. A sense of place and community, local knowledge and self-determination are the outcomes of community involvement and therefore relates directly to the theory of social capital (Carr 2002:155). This important part of a community provides institutions and governments with information that would be otherwise unattainable and unquantifiable.

Combining the importance of community involvement with the theory of social capital enables us to study communities, their relationship with the Snowy River and furthermore, gives us a theoretical framework with which to base our findings. Social capital is the movement and momentum within communities for people to take action and work together towards a shared goal.

5.1 Social Capital

Eva Cox's Boyer Lectures were the starting point for debate about social capital in Australia. Cox's definition is centred on achieving the greater common good for societies and communities. She argues that social capital should be the pre-eminent and the most valued form of any capital as it provides the basis on which we build a truly "civil society". She suggests that social capital is the social glue which makes up communities and that it must be encouraged and fostered. Using Cox's theory that the more social capital is

increased the more it is used, we then find ourselves asking how to encourage social capital within communities. To do this, we must fully understand the concept of social capital, the benefits and disadvantages and how it is integrated within a community's culture and processes (Cox 1995: 7).

The following are specific definition of social capital, in and according to each author's interpretation and emphasis on different aspects of the term. There are three founding theorists who have explored social capital from different angles. Bourdieu (1986), Coleman (1988) and Putnam (1995, 2000) all have put forth differing interpretations for social capital but agree on the idea of social capital existing as a resource that can be owned or possessed, whether by an individual, group or community. Although significant differences exist, Bourdieu and Coleman's definitions are similar in that they both base social capital in the individual's possession, whereas Putnam (1995:48) views social capital as belonging to communities.

Bourdieu defines social capital as:

> the aggregate of the actual and potential resources which are linked to possession of a durable network or more of less institutionalised relationships of a mutual acquaintance and recognition- in other words, to membership in a group- which provides its members and the backing of the collectively owned capital, a credential which entitles them to credit, in the various sense of the word (Bourdieu 1986: 23)

Coleman defines social capital by its function. "The function identified by the concept of social capital is the value of these aspects. It is the social structure to actors as resources that they can use to achieve their interests". Coleman also views social capital as a resource and believes that social capital is "a particular kind of resource available to an actor…Unlike any other form of capital, social capital inheres in the structure of relations between actors and among actors" (Coleman 1988: 100).

Putnam's emphasis on community and organisation and institution brings him to a different conclusion. He defines social capital as "features of social organisation, such as trust, norms and networks that facilitate cooperation for mutual benefit" (Putnam 1995: 43). Putnam believes that whereas physical capital refers to physical objects and human capital refers to

the properties of individuals, social capital refers to connections among individuals and social networks and the norms of reciprocity and trustworthiness that arise from them. In that sense, social capital is closely related to what some have called "civic virtue". Putnam states that "the difference is that social capital calls attention to the fact that civic virtue is most powerful when embedded in a sense network of reciprocal social relations. A society of many virtuous but isolated individuals is not necessarily rich in social capital" (Putnam 2000: 19).

Beyond these three definitions, recent works have brought out several other definitions of social capital, some of which synthesise the three foundation ideas, while others are more conducive to one school of thought or another.

Several definitions exist centring around Putnam's view of social capital as a community and shared resource. Woolcock and Narayan (2000) define social capital as "the norms and networks that enable people to act collectively." The term collective action has become synonymous with that of social capital, and can be found throughout much of Putnam's work (Woolcock and Narayan, 2000: 11). Falk and Kilpatrick (2000) define social capital similarly to Putnam. Where Coleman and Bourdieu focus and centre their ideas around the individual, Falk and Kilpatrick see social capital as "the product of social interactions with the potential to contribute to the social, civic or economic well-being of a community of common purpose" (Falk and Kilpatrick 2000: 56).

Several definitions within the social capital literature explore the characteristics of social capital in a more generalised sense, placing less importance on its ownership by the individual or community. Cohen and Prusak (2001) believe that "social capital consists of the stock of active connections among people: the trust, mutual understanding, and shared values and behaviours that bind the members of human networks and communities and make cooperative action possible" (Cohen and Prusak 2001: 4).

The World Bank also defines social capital referring to "the institutions, relationships, and norms that shape the quality and quantity of a society's

social interactions... Social capital is not just the sum of the institutions that underpin a society – it is the glue that holds them together" (The World Bank, 1999). Eva Cox, in the Boyer Lectures Series, in discussing social capital's role in Australia, employs the World Bank's definition. She called for an increase of social capital in small, rural towns as a means to increase productivity and growth on a small, regional scale (Cox 1995:9).

For the purpose of clarity and consistency, Stone's(2001:4) definition is, in my opinion, the most comprehensive and integrative of all these philosophies. She states that

> Social capital consists of networks of social relations that are characterised by norms of trust and reciprocity. Combined, it is these elements which are argued to sustain civil society and which enable people to act for mutual benefit; it is the quality of social relationships between individuals that affect their capacity to address and resolve problems they face in common (Stone 2001).

In understanding social capital and its implications within communities, it is vital to explore what is meant by the term "community". However, this is a difficult task as it encompasses many different meanings and nuances. It is a term that it used interchangeably to describe, among other things, a group, a region, or a town. According to Lee, Field and Burch (1990:42), sociologists have found there to be three general approaches taken to define community. One approach explores community as solely a geographical entity- a human settlement with a tangible boundary and physical territory. A more sociological-based definition combines the idea of geography along with social relationships and describes the term community to mean a local social system involving interrelationships among people living in the same geographic region or area. Finally, the authors suggest that community is defined as a type of relationship, especially in terms of a shared identity. This definition is removed from any necessary geographic ties, and bases itself in terms of social interaction, social norms and networks. A sense of community can be had with people who have never interacted, and yet may have lived similar experiences or are a part of similar groups. Community and what it encompasses is

important as it focuses upon social structures and the networks of institutions (Lee, Field & Burch 1990:42-46).

5.2 Social Capital's Founding Theorists
5.2.1 Bourdieu

Within sociology, social capital has become defined as 1) a source of social control, 2) a source of family-mediated benefits and 3) a source of resources mediated by non-family networks. The third definition is particularly linked to that of Bourdieu's concept of social capital surrounding the idea of personal connections facilitating access to jobs, loans or any economic capital gain (Portes & Landolt 2000: 530). Bourdieu's theoretical emphasis is centred around social networks which provide access to resources available in a group. The outcome of this social capital is ultimately individual economic reward reaped through ongoing participation in the network as mutual benefits accumulate. Social capital is, for Bourdieu, the use of social connections to gain resources which are highly sought out in capitalist societies.

In Bourdieu's theory, social capital is one of three forms of capital, including also economic and cultural, which together explain the structure and dynamics of societies. Different degrees of access to capital shape both economic and social interactions within communities. Access to social capital is found through networks and connections people make, which in turn creates the idea of an institution of social capital (Winter 2000b: 8). Bourdieu measures social capital by the volume of the social capital possessed by a given agent or person. This depends on the size of the network of connections and on the volume of the economic, social or cultural capital (Foley & Edwards 1999: 145).

Bourdieu discusses flexibility and adaptation between three forms of capital: economic capital, which is immediately convertible into money and is an actual tangible item; cultural capital, which is convertible into economic capital; and social capital, made up of social obligations or connections which are convertible, in certain situations, into economic capital and can exist as titles of nobility (Winter 2000b:6). Bourdieu's main insight was that these three

36

forms of capital; economic, social and cultural, can be interchangeable and in fact, they must be traded for each other to increase development. He argued that social capital of any importance can be acquired with some material resource and the possession of cultural knowledge, enabling the individual to establish relations with valued others (Portes & Landolt 2000: 535).

Social capital, as a network of connections, is not a natural given or a social given, but something that must be worked for on an on-going basis. As Bourdieu (1986: 251) states, "It is the product of 'investment strategies', consciously or unconsciously aimed at establishing or reproducing social relationships that are directly useable in the short or long term". Bourdieu's particular application of the concept of social capital relates to the understanding of how individuals draw upon social capital to improve their economic standing in capitalist societies. Bourdieu argues that economic capital is the fundamental resource and his concern is with how social capital and cultural capital may be instrumental in increasing an individual's economic capital.

5.2.2 Coleman

It is important to note that Coleman uses different terms to define social capital, and applies the concept for a different purpose, yet still essentially deals with the same theoretical concept. Coleman does differ from Bourdieu by emphasising how to identify connections and group memberships as a resource which might be used to meet mutual or similar objectives or interests, whereas Bourdieu focuses on the strategy acquiring these resources. Coleman states that "the function identified by the concept of social capital is the value of these aspects if social structure to actors as resources that they can use to achieve their interests" (Coleman, 1988: 101).

Coleman believes that social capital is integrated into the structure of relationships between persons and among persons and not in physical elements or individuals. Coleman states that social relationships can give individuals access to crucial and much needed resources that might not otherwise be available to them despite ample endowments of human or financial capital.

Subjective social attributes such as trust, expectations and norms are fundamental components of relations (Coleman 1988:119).

Coleman further defines social capital by deconstructing the term and defining its components and aspects. The aspects he identifies are; obligations and expectations, information channels, norms and effective sanctions that constrain or encourage certain kinds of behaviour and these exist in the relations among persons. Coleman's main application of the concept of social capital is concerned with the understanding of the role and norms and sanctions, within family and community networks which is aimed at the attainment of human capital (Coleman 1988:115)

Bourdieu and Coleman both see social capital as a means of increasing an individual's resources. Bourdieu is interested in social capital as a resource to economic capital for individuals, in a range of social settlings and Coleman is interested in how social capital in family and community networks, is a resource to human capital for individuals (Winter 2000b: 16).

5.2.3 Putnam

Putnam's work on social capital investigates how social capital works at the regional level to augment democratic institutional activity and economic development. Putnam uses the concept of social capital at a different social scale to both Bourdieu and Coleman, although his definition of the concept social capital is drawn directly from Coleman.

As previously mentioned in this chapter, Putnam(1995) defines social capital as "trust, norms and networks that facilitate cooperation for mutual benefit". Although the terminology is different, the definition effectively is similar to Coleman's notion of social capital being those networks and norms that facilitate collective action. Norms of trust and reciprocity within networks and communities are the main resources, which are social, while their outcomes are various forms of collective action. Social capital is not collective action *per se*, but rather the norms and sanctions of trust and reciprocity residing within social networks that enable dilemmas of collective action to be solved (Roseland 2000: 51).

Putnam's focus is on behaviours which might explain economic and political development at regional and national levels. The aspect of social capital to result in differing regional or national political and economic outcomes, is the norm of generalised reciprocity that fuels social trust. This is the trust possessed by community members that their actions that contribute to others' well-being will be rewarded at some point in the future (Putnam 1995: 76).

Putnam puts forth a way to measure social capital, which has been criticised for being tautological, as it defines participation as "voluntary associations" and assumes that reciprocity and trust will flow from this participation. It basically explains social capital as action, previously defined as indicating social capital, without deconstructing and defining particular important concepts, such as trust and reciprocity within a network (Stone 2000: 17). Further, Putnam does not include any role for democratic institutions, such as government, in the creation and development of social capital (Winter, 2000b:4).

Putnam (1995: 66) defined social capital as; "features of social life-networks, norms and trust- that enable participants to act together more effectively to pursue shred objectives". For Putnam, associations, featuring face-to-face, relations among individuals, generates trust, norms of reciprocity, and a capacity for civic engagement, and are together essential to the functioning of a modern democracy. Putnam's main argument is that these associations produce networks, trust and norms of reciprocity in turn promotes civic engagement (Foley & Edwards 1999: 171).

To clarify the relationship between the three foundation theories of social capital, we can summarise by stating that social capital can be understood as a resource for collective action, which may then lead to a broad range of outcomes. Winter (2000a:4) argues that Bourdieu, Putnam and Coleman each understand social capital as a resource for collective action, the outcomes of which differ in their philosophies. Bourdieu is concerned with economic prosperity and inequality, Putnam, democracy and Coleman, the acquisition of human capital in the form of education (Winter 2000a:4). Social capital as a resource, comprises the norms and sanctions of trust and reciprocity

that operate within social networks. Winter (2000a:8) believes that the structural components of networks such as size, density and the extent of closure and relational aspects such as inequity shape the social capital of a network.

A vital element of the study of social capital is improving our understanding of how communities can invest in social capital and in doing so, how they can strengthen their community. To achieve this, however, measuring and gauging existing social capital is most important. The following chapter explores the literature of different methods and techniques of social capital measurement.

Measuring Social Capital within Communities

Overview

With a clear definition and understanding of what is meant by social capital, one may pose the question, why it is that social capital is deemed a useful theory and what might the benefits be to a community? According to the Community Participation Network (CPN), social capital has many benefits for a community. They define these benefits as:

fostering sturdy norms of generalised reciprocity;

facilitating coordination and communication;

creating channels of information exchange (CPN 2001).

This chapter explores the relationship between social capital and communities, how that relationship can be enhanced and how levels of social capital can be assessed and measured.

6.1 Community and social capital

Social capital, communities and community development are inter-related concepts that depend on one another for their existence. Social capital looks at networks, connections of people and their interactions and a community is where this kind of interaction can and does take place. McClenaghan (2000: 27) draws a link between social capital and community development. Her central belief is that community development is a broad strategy concerned with mobilising communities with the aim of enhancing the economic and human capital potential of the individuals within them (McClenaghan 2000: 33).

For Bourdieu and Coleman, community ties are important for the benefits that they yield to individuals in the form of reliable expectations. In fact, Putnam connected the concept of social capital to a community's definition of social capital as a resource that a community holds or owns. This

differentiation of concepts of individual-to-individual social capital from community social capital has several important dimensions. The sources of social capital are clearly associated with a person's networks that are derived or constructed intentionally for gain of material and informational benefits.

Kilpatrick, Field and Falk (2000: 88) argue that trust and solidarity within a community may accomplish many powerful changes, however, it is important to realise that social capital can only regulate resources through social networks and not create them. If resources are scarce or non-existent, the "achievement capacity" is restricted, no matter how strong that community may be. Social capital's main limitation is that it is not a substitute for the existence of credit, infrastructure or education. Social capital capabilities extend into the ability to increase the yield of existing resources by reinforcing them with the voluntary efforts of people and prevent misuse of these resources. Social capital cannot simply appear or be developed by the government or other formal institution, it must already exist in some form in the local environment and society (Kilpatrick, Field and Falk 2000: 89). There are indeed instances and examples where high levels of community solidarity and sustained economic growth co-exist but it is important not to allow oneself to get trapped into the idea that one causes the other without considering the possibility that both are determined by common external causes (Portes & Landolt 2000: 531).

Nonetheless, communities make an important contribution to governance, and this contribution is most important when market contracts and governments fail because the necessary information to design and enforce beneficial exchanges and directives cannot effectively be used by government officials and others outside of the immediate community. This is particularly true where relationships within a community support trust, mutual concern or simply multilateral enforcement of group norms. Communities have the exceptional potential to solve problems that both states and markets cannot address, especially when the nature of the problem derives from social interactions or when the goods and services are difficult to obtain or too costly. Similar to Putnam's ideals of social capital, community governance and social

capital rely heavily on private and dispersed information which is often unavailable to governments and other regulatory bodies. Communities have the ability to foster and use incentives that are more traditional and already present in their day-to-day lives and activities, such as; trust, solidarity, reciprocity, reputation, personal pride, respect and even vengeance (Roseland 2000).

6.2 Enhancing social capital within communities

To enhance community social capital, Bowles and Gintis (2000:17) suggest that members of the community should feel an ownership of their success or failure in solving collective problems that they themselves face daily: "Community development is an intentioned intervention in the lives and directions of community members and community infrastructure". They also argue that members of the community require a legal and governmental environment tailored to their functioning. The face-to-face local interactions of a community are not a substitute for effective government but rather should complement it. Active advocacy, liberal ethics, equal treatment and enforcement of conventional anti-discrimination policies should also be in place. It should not be unrealistic for communities to work effectively together without exhibiting an "us against them" attitude (Bowles and Gintis 2000:21). Flora (1998:490) believes that networks are most effective for the community as a whole when they are diverse, inclusive, flexible, horizontal (similar level of power) and vertical (hierarchical) with external organisations and institutions that have resources available to incorporate within the community.

An understanding of the processes through which social capital is accessed and built is necessary if it is to be used as an analytical tool in community development. Social capital can be conceived as being both assessed and built into interactions between individual actors. Falk and Kilpatrick (2000: 90) describe two kinds of social capital resources that are used in interpersonal, one-to-one interactions. They are firstly, a knowledge of who, when and where to go for advice on resources and knowledge of how to get things done, called knowledge resources, and secondly, identity resources, that is, being able and willing to act for the benefit of the community and its

members. Identity resources include self-confidence and norms such as, reciprocity, values and shared visions.

Action and cooperation, the building or strengthening of knowledge and identity resources, such as developing a shared view or objective for the future of that community for its benefit are possible outcomes of the use and harnessing of social capital. These interactions can also increase people's confidence to act for the benefit of the community and its members, and build a commitment to them. As previously discussed in this paper, some negative outcomes may arise, such as alienation or exclusion of some members of the community. It must be recognised that when dealing with large groups, even if they are from the same community, there will exist variations in perceptions and wants. Therefore, not all interactions are positive and arguments may ensue if the vision for the community is not homogenous and agreed upon (Woolcock & Narayan: 2000: 15).

6.3 Identifying resources within communities

Kilpatrick, Field and Falk (2000:11) propose a list of characteristics meant to identify strengths and weaknesses within a community indicating where social capital resources can be improved. They believe that the following elements must be considered:

The balance between internal and external types of networks. Internal networks within the community are key, as well as outside of the community. These external networks bring a further validity and support to the internal communities' needs. The presence and diversity of people who are able to bridge and link up the different possible networks. The levels of self-confidence and self-esteem of community members and skills in working together, including conflict resolution. The extent to which the community has shared visions for its future. (Kilpatrick, Field and Falk 2000: 12)

It is stressed by Kilpatrick, Field and Falk that each community should be analysed differently and will have different needs and relationships. The above elements focus on the nature of relationships rather than the tangible infrastructure of the community.

Falk and Harrison (1998:18) propose a framework to identify social capital resources within communities. This framework, designed as a check-list of aspects to look for, specifically examines the interactions between knowledge resources, identity resources and consolidated resources.

Knowledge resources- where the interactions draw on the resource of shared knowledge of a community which could encompass members' length of residence, genealogy, actions, values and reputations, occupations, volunteer positions, etc.

Identity resources- where the interactions draw on the resource of shared understandings. This results in a sense of place where individuals belong to both socially and civically.

Consolidated resources- where the interactions draw on the resources of shared understanding and familiarity with community assets which are accumulated and used reciprocally for all community members. Please see Table 1 for more detail.

Table 1- Knowledge resources

Category	Area of interest	Dimension	Indicators
Knowledge of who people are	History of area Residents of area	Visibility of community	Reporting local news and information
Knowledge of what people do	Interests and occupations of residents	Extent and diversity	Identifying expertise and experience
Knowledge of what people are good at	Skills, knowledge and experience	Practical Qualities	Sharing skills and passing on information
		Business Qualities	Offering advice, group decisions for community
		Communication	Oral, listing, advice

		Qualities	giving
		Pragmatic Qualities	Enthusiasm, wisdom, accessibility, reliability
		Energising Qualities	Making things happen, challenges

(Source: Falk & Harrison, 1998: 18)

Table 2- Identity resources

Category	Area of interest	Dimension	Indicator
Social Identity	Sociability	Reciprocity	Organising outings, meeting neighbours and friends
	Integrity and trust	Openness, honesty, example setting	Reliability, reciprocity
Civic Identity	Community pride	Beautification of landscape, Conservation	Restoring town, heritage sites, Landcare

(Source: Falk & Harrison, 1998: 18)

Table 3- Consolidated resources

Category	Area of interest	Dimension	Indicator
Consolidated social activities	Consolidated resources and infrastructure	Public forums, fairs, council meetings	Consolidating task-specific skills and knowledge, rallying for a cause
	Large number of volunteers	Service clubs, groups and events	Fundraising, donations, giving time
Consolidated civic	Community voice	Protests, council	Youth activities,

activities		elections, coaching local teams	shopping locally

(Source: Falk & Harrison, 1998: 18)

Deriving qualitative data from Falk & Harrison's (1998) framework helps the researcher to develop empirically derived information. From this information, it then becomes possible to create a set of specific indicators for the communities studied. This framework allows for the researcher to qualitatively assess social capital efficiently.

6.4 Characteristics of social capital

There are many forms of social capital, and one of the challenges is to locate and mobilise these forms to contribute to public problem solving and democratic participation. Putnam proposes a list of characteristics of social capital, identifiable within a community.

- Formality: the level of both formal and informal types of civic interaction
- Purpose: which public or private institutions exist within a community
- Bridging: the bonds of trust and reciprocity that can bridge gaps in society or, conversely, bridge like-minded people together
- Immediacy: the trust may stem from immediate, face-to-face connections or anonymous bonds
- Intensity: the strong and weak networks that exist within a community
- Social location: the neighbourhood ties that represent the place-based aspect of social capital. (Putnam 1995:50).

Pretty and Ward (2001:210) also identify key aspects of social capital, although they take on a different perspective to Putnam. Pretty and Ward suggest that the main characteristics of social capital encompass relations of trust, reciprocity and exchanges, common rules, norms sanctions, networks and groups. Pretty and Ward (2001: 211) argue that trust is a vitally important component to social capital as it lubricates cooperation, eases communication between people and in doing so, it liberates resources. Trust takes time to build

in a community and is easily broken. If a society is eroded by distrust, cooperative actions and movements are unlikely to emerge.

6.5 Measuring social capital

There is considerable controversy over the possibility, desirability and practicality of measuring social capital. It is believed by some that quantifying personal linkages and social behaviour is an impossibility, however Falk and Harrison (1998:14) argue that without some kind of measure of the store of social capital within a community, its characteristics and potential remains unknown. The desire to measure social capital is justified by the need to assess a community's capacity for development, change and growth, however, the problem of how to determine what kind of measurement or equation is best suited persists. Falk and Harrison believe that one of the main problems in determining this method is the question of "is it the quality and quantity of social activities which creates the interaction, or is it the interaction which produces the opportunities for such events to arise and be created?" (Falk & Harrison 1998: 15).

Another uncertainty in the attempt to calculate social capital is whether there is a causal link between increased stores of social capital and economic well-being. If there is indeed a connection between the two, does this link depend on the quality and the quantity of the stores? If so, how do we determine how much is a sufficient store of social capital. How is that number determined? Falk and Harrison answer these uncertainties by assuming that social capital describes the collection of knowledge, identity and consolidated resources identifiable within a community. They then argue that such stores of social capital produced must then have a positive effect on the economic well-being of a community of people striving for a common purpose.

The World Bank launched the Social Capital Initiative (SCI) in October 1996 to help advance the theoretical understanding and practical relevance of social capital. One of the main objectives for this initiative was "to contribute to the development of indicators for monitoring social capital and methodologies for measuring its impact on development" (Grooaert & van

Bastelaer: 2001:1). Grooaert & van Bastelaer (2001) argue that social capital is difficult to measure directly, and thus suggest that for empirical purposes, the use of proxy indicators is necessary. The authors state that as no such acquired consensus exists on the study of social capital, that the search for these ideal proxy indicators continues. The challenge is to identify a contextually relevant indicator of social capital and to establish an empirical correlation with relevant indicators, which would differ geographically and sectorally. Grooaert & van Bastelaer (2001) discuss other attempts of measuring social capital, including that of Krishna and Uphoff (1999:3) whose measurement standard relied primarily on membership in networks. The authors also use measures of trust in other people in formal institutions and indicators of belonging to networks. Although these frameworks are valid, the authors argue that due to the strong contextual nature of social capital, it is unlikely that it ever will be possible to identify a few 'best' indicators that can be transferable. Instead, what is proposed is a general framework for thinking about social capital which is built around two key dimensions of social capital; its scope and its forms.

Figure 6.1- Scope and Forms of Social Capital
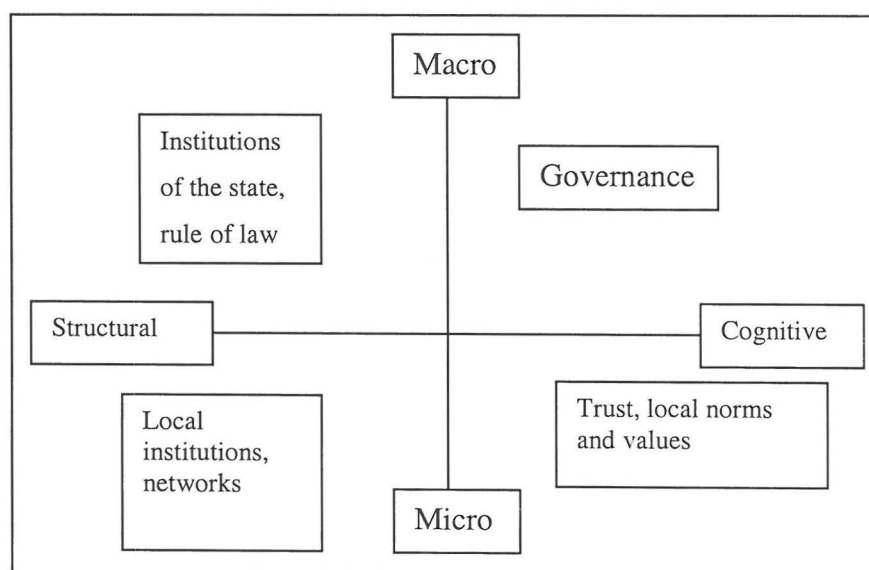
Grootaert & van Bastelaer(2001) suggest that the ideal approach would embody all four quadrants of figure 6.1. Indicators that include both structural

and cognitive social capital are important as these elements put social capital into a context which makes the study far more practical and tangible.

The questions that remain are firstly, is there enough of an understanding of social capital to claim that it can be measured as successfully as physical and economic capital? And secondly, if we can indeed measure social capital, what is the best process or technique for doing so?

Grootaert (1998) argues that the selection of indicators for assessing social capital should firstly be related to the scope of the relationships and institutions in place and secondly, according to the types of impact social capital has on the development process. These indicators must also be developed at the micro and macro levels. At the micro level, social capital is assessed by "the extent to which the existing associations or institutions contribute to making more efficient market outcomes possible"(Grootaert: 1998: 11). However, the author argues that this is difficult to measure, as there are many factors that affect market outcomes. At the macro level, social capital can be included into the measurement of the production function which also includes three other types of capital: physical, human and natural. Production function models explain GDP growth and are used as a growth indicator between countries (Grootaert: 1998: 13). This economics-based method of measurement also has its weaknesses as the GDP of a country or region is geographically centred and is not truly indicative of an entire community's growth or development outside of economic boundaries.

Grootaert proposes indicators for measuring social capital that include horizontal associations, civil and political associations, indicators of social integration and legal and governance aspects. What is particularly important to note about these indicators is the use of qualitative and quantitative measures. The synthesis of the two kinds of information is a holistic approach to social capital and methods of measurement.

Table 4- Qualitative Indicators

Horizontal associations
Extent of membership
Extent of kin homogeneity
Extent of trust in village/community
Extent of trust in government
Civil and political society
Political discrimination
Political freedom
Social Integration
Measure of strength of social tensions
Social mobility
Legal and Governance Aspects
Quality of bureaucracy
Independence of court system
Contract enforceability

(Grootaert 1998: 15)

Table 5- Quantitative Indicators

Horizontal associations
Number and type of associations or local institutions
Income and occupation within community/institution
% of household income
% household expenditures for gifts and transfers
Civil and political society
% of population involved in political movements
Voter turnout
Social Integration
Strikes, riots, suicide and homicide rates
Crime rates
Divorce rates

Youth unemployment rates
Legal and Governance Aspects
Number of government contracts
Contract-intensive money (currency/M2)

(Grootaert 1998: 15)

Methodological diversity is both a strength and challenge of research on social capital. The analysis cannot be conducted strictly within an economic paradigm, using only quantitative methods, nor can it be solely based on qualitative case studies. There is a need for methodological diversity thus creating a good balance between the two, as the above tables illustrate. The strength of the quantitative study is that it can calculate a confidence interval within which the results hold. As they are usually based on a standardised data source, they can illustrate well the geographic area or the groups of people. The inclusion of case studies investigates the process that leads to certain outcomes. If there is anything unique about social capital, it is perhaps the high degree to which it is essential to draw on both qualitative and quantitative methods and multi-disciplinary approaches to reach valid conclusions (Grooaert & van Bastelaer 2001: 22).

Acknowledging and identifying social capital resources is necessary in the process of community development. Social capital is an important theory when analysing the strengths and weaknesses of a community and identifying aspects where intervention could usefully build community social capital. Bowles and Gintis (2000:14) state that "the importance of social capital within a community is the potential it holds for its members. Beyond the specific definitions and schools of thought, social capital is a renewable resource that should be harnessed and encouraged within communities to facilitate cohesiveness and development of all kinds". If communities can identify their social capital, they in turn can identify their potential, which has the ability to lead them to shared goals or visions.

Chapter Seven
Findings

Overview

This chapter presents data gathered from surveys and interviews conducted throughout March and April 2002. This material provides the basis for an analysis of 1) the case communities perceptions of the Snowy River and 2) the degree of social capital that exists within these communities. From this analysis, I then move on to elucidate the key dimensions that link the communities' perceptions of the Snowy River and the concept of social capital. A full breakdown of interview responses is given in Appendix D.

### 7.1 Perceptions of the Snowy River
7.1.2 Dalgety

Dalgety, a community residing on the banks of the Snowy River, is the only case study community located directly on the river. The importance of location in determining one's relationship with the environment will be discussed later in this chapter, however, this vital relationship is crucial to understanding this township. Dalgety has the strongest emotional connection with the river and the responses in the surveys and interviews reflected this. To further understand this relationship Dalgety residents, in both the surveys and interviews, were asked what the Snowy River meant to them. These answers varied only slightly. Predominantly, most Dalgety residents specified a strong sentimental relationship and, in some cases, a recreational relationship.

Several survey respondents chose to express their discontent with the current state of the river. One resident stated that the Snowy River is a: "Symbol of wildness and freedom which has been destroyed for money. Its restoration would symbolise governments getting it right for a change" (Anon. Survey). An indication of the intensity of their relationship with the Snowy was measured by how often community members visited the river. Not surprisingly, because of their close proximity, a high number of respondents visited the river on a semi-regular basis. Of all Dalgety survey respondents, 60% stated that

they go to the river "at least once a week", with over 80% of them going to the river "at least once a month".

The community perception of the current environmental state of the river was also incorporated into the survey. Over 70% of the respondents from Dalgety claimed that the condition of the river was "terrible". When questioned about the river and its environmental condition a local small business owner stated: "It's poor, very poor. The town water comes from the river, and most locals won't even drink it". Respondents identified that the main environmental problems with the river were the lack of water flows and the "general state of the river".

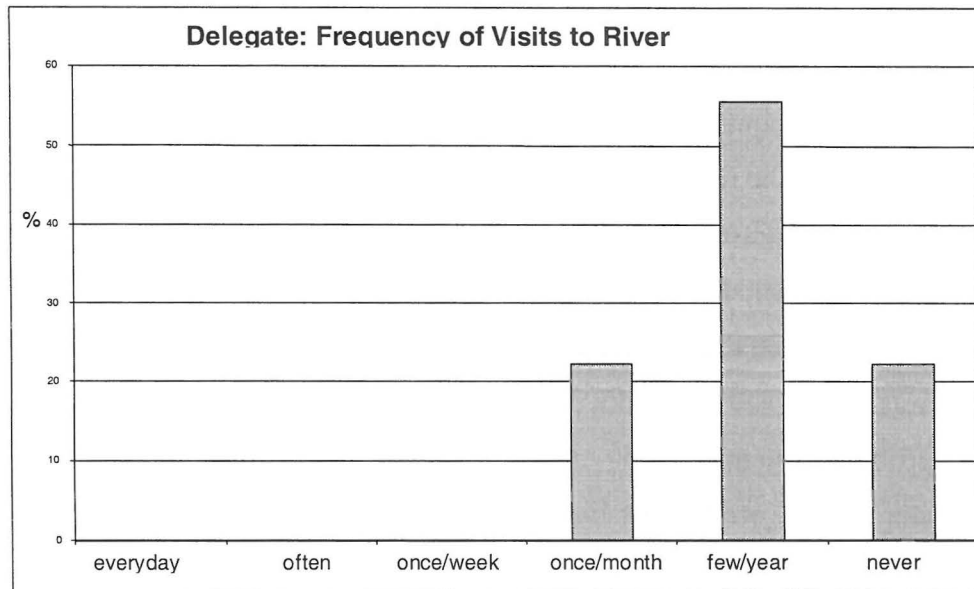**Dalgety: Environmental State of River**

(n=90)
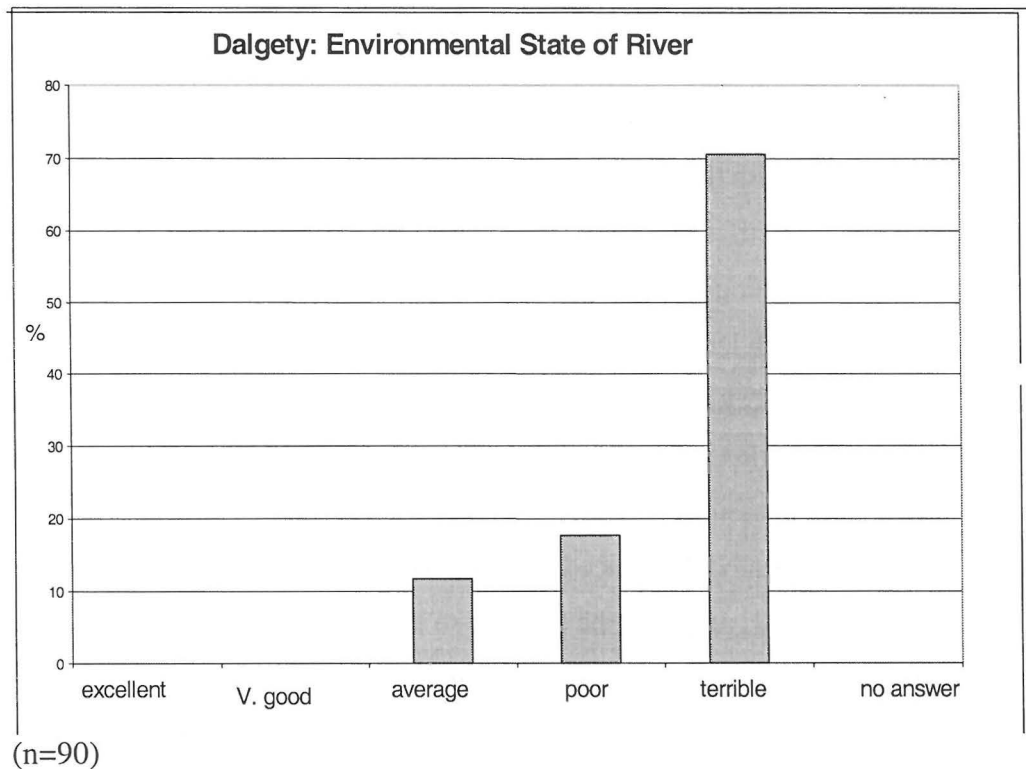
Not surprisingly, the concern over water flows was most evident in Dalgety. Every respondent (100%) wanted a substantial increase in flows to the Snowy River. More than 80% of Dalgety residents agreed with the government proposed figure of at least a 21% increase in flows to the river. Approximately 35% of the respondents believe that the flows should be restored to 50%. Like many other Australian rural communities, Dalgety is suffering economically. Many of the people interviewed felt that with an increase in flows there would be an increase of tourism, or at the very least, that tourism

could become a small-scale but lucrative industry in Dalgety. The respondents acknowledged that the flows would not be the sole "saviour" of their economy and that infrastructure would have to exist to support tourism. Local business owner, Bill Peterie commented: "Restoring flows won't directly help us out economically. Not unless other things come along with it" (Pers. Comm. Anon. 25 March 2002). Bill Peterie also emphasised that the community must assist the direction of any government aid. "The community needs to drive change. We do need government resources and help, but we have to be a part of it" (Pers. Comm. Bill Peterie, 25 March 2002).

7.1.2 Delegate

Similarly to Dalgety, the small town of Delegate felt a strong personal relationship with the Snowy River. Over 50% of respondents cited a personal relationship with the river, although only 20% identified a leisure-based relationship with it, differing significantly from Dalgety residents who identified a strong leisure-based relationship (over 60%) with the river. Interviews with Delegate residents showed that their relationship was based on the river's history and the personal history they shared with it. One of the Snowy tributaries is the Delegate River that flows through Delegate. Therefore, it is logical to assume that the Delegate River is important to the residents. A local grazier stated: "We need to keep the Queedong [Delegate] River clean. The Delegate River feeds the Snowy, so as far as I'm concerned, the Queedong is my first priority" (Pers. Comm. Anon. 26 March, 2002).

The frequency with which Delegate respondents went to the Snowy River was predominantly (55%) "a few times a year". One interviewee stated: "I don't go often. But I do go when I can. There is not any easy access to the river from here". The fact that the road is not sealed between Delegate and Jindabyne creates an obstacle for some. In fact, over 20% of respondents claimed that they "never" went to the river. "I never go, I can't be bothered to drive there and I can't get through. But I do go to the Queedong at least ten times a year" (Pers. Comm. "Rix", 26 March, 2002).

**Delegate: Frequency of Visits to River**

(n=90)

The environmental state of the river was described as "poor" or "terrible" in over 70% of the responses. One of the executive members of the Delegate Progress Association (DPA) listed what she believed to be the biggest environmental problems with the river. "Its really bad! Carp, willows, the water is not pure, its dirty and slow" (Pers. Comm. Alma Reed, 26 March, 2002). Many of those interviewed in Delegate agreed that since the amount of water flow was a major problem for the river, the flows should be increased. Over 80% of Delegate residents agreed with the increase of flow and over 40% believe that the flow should be increased by 50%. Although many respondents believed that the water flow should increase, several people felt that this possible increase would result in other problems, mostly for the irrigators to the west of the Snowy Mountains. "Can we justify diverting water from food production…even though the conservation of water in Australia and indeed the world is of supreme importance" (Anon. Survey).

7.1.3 Jindabyne

Similar to the previous case study communities, Jindabyne identified a personal relationship with the river, with over 90% of respondents saying that they had either a personal relationship (55%) and/or a leisure-based relationship (35%). Similar to the Delegate response, Jindabyne residents most

commonly answered that they visited the river a few times a year (50%). However, a relatively high number of respondents (35%) claimed to visit the river once a month. This can most probably be explained by Jindabyne's close proximity to the river as well as ease of access.

In contrast to Delegate and Dalgety, Jindabyne residents' responses to the environmental state of the river were more varied. Over 20% of respondents felt that the current state of the river was "average", 35% felt that it was "poor" and just under 30% thought the condition of the river to be "terrible". The main environmental problem with the river was cited to be the water flow. However, one Jindabyne resident stated that: "The biggest problem with the Snowy is the septic leakage and level of phosphates in the water" (Pers Comm. Christina Webb, 27 March 2002).

State of the Snowy River
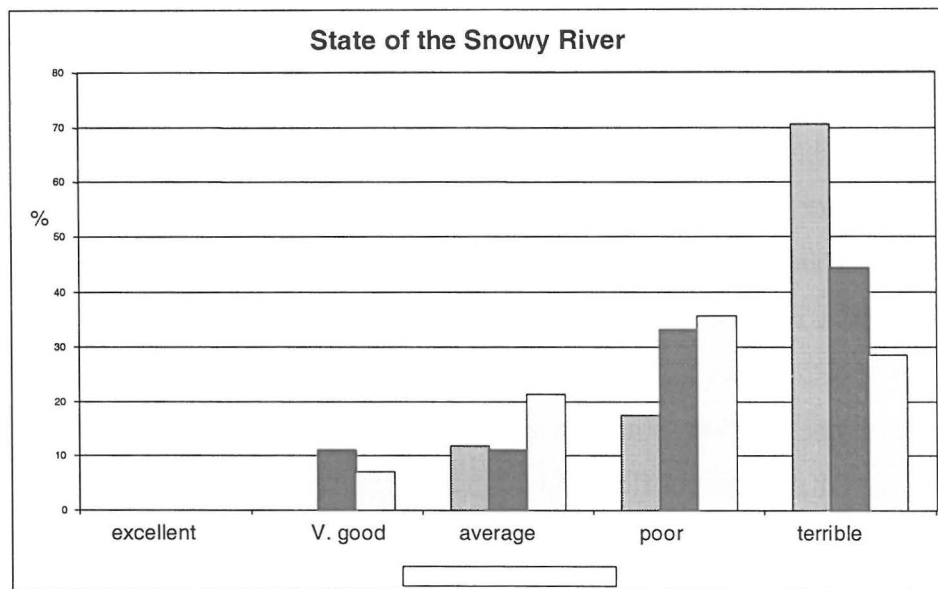
(n=90)

As water flow was suggested as the main problem with the Snowy, over 80% of respondents then felt that there should be an increase in flow. A surprisingly high percentage (58%) of the respondents claimed that 21% should be returned to the Snowy River. During interviews several people questioned the effect the increase of flows would have on Lake Jindabyne. One resident stated "I make my living because of Lake Jindabyne. I'd be happy for all the water to be returned to the Snowy, but what does that mean for the Lake? Will the water

levels be affected?" (Pers. Comm. Anon. 4 April, 2002). The question of how restoring flows would impact Lake Jindabyne was common for many business owners at the monthly Chamber of Commerce meeting.

Summary

Perceptions of the Snowy River vary between communities. How these diverse perceptions are shaped depends considerably on the personal linkages and bonds that are a part of social capital. With the use of key indicators, the following section examines and compares the presence of social capital within each community.

7.2 Social Capital

Incorporating specific indicators from Grootaert's framework, including qualitative and quantitative data, we can assess how much social capital exists within each case community. According to Grootaert, several different qualitative and quantitative indicators can be used to gauge social capital. As discussed in Chapter Two, given the time and resource limitations of this study, I focus on only three of these: trust, economic and membership indicators.

7.2.1 Trust Indicators

The World Values Survey (WVS) measures social capital by including civic trust as one of its indicators. The survey in this study gauges civic trust by asking residents of each community questions relating to the restoration of flows to the Snowy River and the government. This study found that government trust varied for each community quite significantly.

Dalgety

In Dalgety many interviewees were hesitant to agree that the flows would be restored at all; many people felt that the government would go back on their promise to restore flows. "I'm not sure it'll happen. There's a rumour that they just keep drawing it out. And now we don't hear anything about it, it just keeps on going" (Pers. Comm. Anon. 27 March 2002). Another resident

felt that the government was not really taking the restoration of flows seriously. "I'm not really sure that 300 million will cover the cost of restoring 21% of the flows. Its just not enough money" (Pers. Comm. Anon. 25 March 2002). The surveys illustrated that a lack of money was an issue. Only 10% of Dalgety respondents stated that there would be "many" improvements in the river from the government's promise to restore a quarter of the natural flows below Jindabyne Dam. However, a high percentage (60%) agreed that there would be "some" improvement to the river. In terms of exploring potential problems with this restoration of flows, many Dalgety respondents did not foresee many problems for themselves, but all of those interviewed believe that others will be affected. "I do think the irrigators west of the Scheme won't be happy. It'll be hard for them. The SMA (Snowy Mountain Authority) will also loose earning capacity and power generation" (Pers. Comm. Bill Peterie, 27 March 2002).

The Dalgety respondents who had prior knowledge about the Snowy River Recovery Programme were also asked if they felt that any benefits could be had from the programme. Of the 60% of respondents who had heard of the programme, only 30% felt that "many" benefits could be had. The programme was deemed to have some positive aspects though "The recovery will stop the decline of ecology and have positive impacts and raise community knowledge" (Pers. Comm. Charlie Litchfield, 26 March 2002). The survey indicated that there was a general support for the programme and over 50% were keen to participate in the recovery of the Snowy mostly through "volunteering" and "support".

Delegate

"The river will never be as it once was, but restoring the flows should help slightly" (Pers. Comm. Anon. 25 March, 2002). This sentiment was the predominant one in Delegate. In fact, a high percentage of respondents from Delegate believed that there would be little to no improvement from the increase of flows to 21%. Over 40% of Delegate respondents stated that they foresaw only "some" improvement with the restoration of flows to the river. In terms of expected problems with this decision, Delegate respondents cited only

"a few" problems that might arise. The principal problem that was mentioned was the effect of the return of flows would have on the irrigators who depend on the water to the west of the Scheme. "I think the irrigators are going to be mad. However, the government should stop encouraging them and they must learn to persevere" (Pers. Comm. Alma Reed, 26 March 2002).

Jindabyne

Jindabyne's civic trust rated fairly high in comparison with the smaller townships. This was surprising because often trust levels decrease the larger a community is. Jindabyne had the highest percentage (35%) of the respondents who believed that there would be many improvements to the river, and over 90% of respondents who believed that there would only be a "a few" problems with this decision. Again, as Dalgety and Delegate interviewees had pointed out, the problems that were identified were the farmers to the west of the Scheme, who rely on it for water. A Jindabyne resident and business person stated: "Our western neighbours won't be happy with the decision initially, but in the long term they will realise how important it is" (Pers. Comm. Anon. 27 March 2002). The other very common issue was if or how the increase of flows to the Snowy River would affect or change Lake Jindabyne.

Knowledge about the Snowy River Recovery Programme was low in Jindabyne. Approximately 40% of respondents had heard of it and only 35% of respondents felt that there would only be "a few" other benefits to the SRRP.

7.2.2 Economic Indicators

Dalgety

The survey explores the theory that with the increase of flows, there would be an increase in economic activity. In Dalgety, over 85% of respondents agreed the increase of flows would stimulate economic growth "yes, a lot" and "yes, some". The medium of economic activity cited was through recreation, business, tourism and ecotourism. Respondents identified, in many cases, all four options. What is important to note is that there are a fair number of residents from Dalgety who don't want economic growth. Several stated that a major factor attracting then to living in Dalgety was the small

town lifestyle. Some residents moved away from Canberra and Cooma to be in a small town and had no interest in increasing economic activity if that was through tourism or big business. One resident, who recently moved to Dalgety said: "I came here to get away from a busy city. I understand that the people who live here need to subsist but I am against too much growth" (Pers. Comm. Anon. April 4, 2002).

Delegate

Delegate respondents saw a potential for economic stimulation with the increase of flows to the Snowy River. Over 60% of respondents claimed that there would be economic advantages to more water in the Snowy, however, a fair proportion (over 30%) did not see any advantage for them. The economic activity that was most often cited (90%) was an increase of tourism. One enthusiastic interviewee thought that Delegate was the perfect place for a holiday and thought that with more water in the river, more people would come to Delegate. "Tourism for Delegate is an untapped opportunity. People could stay locally, go horse riding, fishing, bushwalking, visit the golf course and we are close to the coast" (Pers. Comm. "Rix", 26 March 2002). However, many others did not feel that the flows in the Snowy would affect them economically or otherwise. "What happens to the Snowy doesn't affect our community. It sure won't help our economy, if anything, the little tourism we have now will be taken by towns like Dalgety" (Pers. Comm. Anon. 25 March 2002).

Jindabyne

Jindabyne relies on winter tourism as their primary industry. However, there is currently a big push towards year-round tourism. In terms of the flows of the Snowy River, a high percentage of Jindabyne respondents (70%) felt that with the increase of water to the Snowy, there would be "some" economic growth, mostly from an increase in eco-tourism. What is unique about Jindabyne, in comparison to the other communities, is that they already have the infrastructure to hold large numbers of visitors in the area. Unlike Dalgety and Delegate, Jindabyne has already in place tourism organisations and groups to help promote tourism in the area. The recurrent issue for Jindabyne residents

was the concern they had that the increase of flows to the river would affect Lake Jindabyne and they would loose out on tourism during the summer.

7.2.3 Membership Indicators

For the assessment of social capital, membership of volunteer organisations, the amount of people in each community who engage in these kinds of organisations, the reasons for engagement and participation rates are key indicators and provides meaningful data. As previously discussed in Chapter 2, each case community was partially chosen for the presence of volunteer-based groups. Therefore, this indicator explores the types and variety of groups, the reasons for their engagement with these organisations, participation rates, and interest for new initiatives.

Dalgety

For a small township, Dalgety has a high number of volunteer organisations. While a few other groups also exist in Dalgety and surrounding areas, the volunteer organisations listed below were most commonly mentioned during interviews.

- RFS- Bushfire
- Landcare
- Dalgety & District Community Association
- Chamber of Commerce
- Show Committee
- CWA- Country Women's Association
- Parents and Community School Association

In rural Australia, groups such as the CWA, Landcare to their location and geography because of the heavy emphasis on working together and helping each other to survive.

The number of Dalgety respondents who were willing to engage in the Snowy River Recovery Programme (SRRP) was the highest of all case communities. Over 50% of Dalgety respondents would participate with the SRRP, and 50% of whom would "volunteer" and over 40% would give

"support". CWA and RFS are common, as they play a vital role in providing key social, environmental and disaster prevention services. "When you live in the country, you need to work together for survival. That's just how things work out here in the country. You help your neighbour and he helps you out" (Pers. Comm. Anon. 27 March, 2002).

The main goal of an active group in Dalgety, the Dalgety & District Community Association, is to restore flows in the Snowy River and generate momentum for economic growth. One member of the group stated: "I volunteer because I am part of this community. I want to encourage others, help my community and in doing so, I get something out of it" (Pers. Comm. Julie Greenwood, 25 March 2002). It is apparent that this community has a strong relationship

Delegate

Delegate, with a population of approximately 450 people, has several active volunteer-based organisations. Those that were mentioned most often throughout interview are listed below.

Delegate Progress Association (DPA)
Country Fire Association (CFA)
Country Women's Association (CWA)

In particular, the DPA is a pro-active organisation whose main mission is to create resources for community members and to increase and encourage economic growth. They have recently been successful with the opening of an employment centre. An executive member of the DPA stated: "I enjoy volunteering because I am giving back to the community, I get to see the results of my work and it gives me a chance to be with others" (Pers. Comm. Alma Reed. 26 March 2002). The collective responsibility of being in a community was a reason cited for volunteering. An interviewee stated: "It's my responsibility to volunteer as a part of this town. If I don't do it, then others won't either" (Pers. Comm. Anon. 26 March 2002).

However, there was a noted group of individuals who felt otherwise. One resident claimed: "I was once a part of a Catchment Committee, we put in long hours to submit information to the government, we never heard again from them. I won't ever do that kind of thing again. It was a waste of time" (Pers. Comm. Anon. 26 March, 2002). A few residents claimed that there was no need to volunteer, as they did not need help from others and felt that others would not benefit from their help.

The surveys did somewhat reflect the lack of interest in participating in volunteer-based organisations. Over 20% of Delegate respondents would not participate in the SRRP, and over 40% said "maybe". Of those who would be willing to participate, over 40% stated that they would "support" the project.

Jindabyne

As Jindabyne is the largest of all three case communities, it is not surprising that it has the most volunteer organisations. What is interesting to note, is the difference in the type of organisations present within Jindabyne in comparison to those in the smaller communities of Delegate and Dalgety. Many of Jindabyne's organisations are centred on their tourism industry and commerce, while a few are based on social services.

Chamber of Commerce

Tourism Snowy Mountains

Country Women's Association (CWA)

Thredbo Historical Society

Meals on Wheels

Parents and Community Association

Easter Festival Committee

Lions Club

The fact that many of these organisations are economically based might suggest that the reasons for volunteering with these groups are for economic benefit. However, analysis demonstrates that this is not entirely true. The

contexts in which these groups interact are indeed business related, however, there is a strong sense of community and a desire to help one another. In fact, during the Chamber of Commerce meeting the main topics addressed were general problems that all the businesses were facing such as insurance, numbers of visitors, and what could they do to increase numbers. Although discussions revolved around economics, there was a sense of reciprocity and community. The local taxi company owner, who is a member of the Chamber of Commerce, was also in charge of the successful Jindabyne Easter Festival, stated: "I volunteer because I want to give back to the community and I get to work with good people" (Pers. Comm. Geoff Stubbs. 27 March 2002). An individual who is a member of the Chamber of Commerce and Meals on Wheels described the importance volunteering has on her family. "I want my son to see me giving back to the community. It's important to me and I want it to be important to him" (Pers. Comm. Anon. 27 March 2002).

In terms of the community being interested in engaging in new initiatives, such as the SRRP, Jindabyne fell between Dalgety and Delegate. Over 30% said "yes", they would participate in the SRRP, and over 45% said "maybe".

7.3 Analysis

Whilst investigating social capital within the determined case-study communities, several vital linking elements became apparent. Despite rather obvious dissimilarities between each case community, such as historical background and population, three elements evolved which illustrated a common bond: "sense of place", "sense of belonging" and "locality". These elements influence the relationship people have with the Snowy River and are distinguishing indicators of the social capital that exists within these communities. To further understand how these dimensions inter-relate within the social capital context, we must have a clear understanding of each concept.

7.3.1 Sense of Place

Through the passing of generations and the "cultural artefacts" that are left behind for the future, a community adopts an understanding and connection to a location or place (Carr 2002: 156). This human relationship and responsibility towards the natural world is how humans understand and manage what is going on in their immediate environment. To clearly comprehend what is meant by "sense of place", and its relevance to this study, it is important to define the term. Relph (1978: 140) defines sense of place as:

Places are fusions of human and natural order and are the significant centres of our immediate experiences of the world. They are defined less by unique locations, landscapes and communities than by the focusing on experiences and intentions onto particular settings. Places are not abstractions or concepts, but are directly experienced phenomena of the lived world and hence are full of meanings, with real objects, and with ongoing activities. They are important sources of individual and communal identity, and are often profound centres of human existence to which people have deep emotional and psychological ties (Relph 1978).

Cantrill & Senacha (2001) argue that the major link between how people communicate and how they behave in their environment is explained by their sense of place. One's conception of the natural environment is framed by their experiences bound to local settings. Experiences having to do with where we live influence the ways in which we view and communicate the environment in general. "Within each physical context is a social, cultural world saturated with environmental references by which people form distinct mental constructs" (Cantrill & Senacha 2001: 186). This "social and cultural world" also has a physical dimension, which then gives humans a backdrop and context from which they experience and live. The authors suggest that a sense of place is the perception of what is most important in a specific location, which may be reflected in value preferences (Cantrill & Senacha 2000: 188).

In this study, a sense of place is a determining factor of the relationships each community holds towards the Snowy River. For example, as

Dalgety is geographically connected to the river, the context in which people live is in fact, the river itself. Therefore, this connection and bond could be seen as paramount to their perceptions. Residents of Dalgety view themselves and their lives as part of the river and, in so doing, their sense of place moves from the intangible to the tangible, which differs somewhat from the other communities studied. From the results of the survey and interviews, Delegate residents cherish the Snowy River, but in a slightly different way than that of Dalgety. Their sense of place is twofold. This relationship can be explained in micro and macro levels. On a small-scale, Delegate's sense of place is their small township, or in some cases the Delegate River. However, on a larger-scale, residents of Delegate were clearly connected to the river on a personal basis, and felt an historical and sentimental affinity with the river. For the community of Jindabyne, sense of place is an unusual concept because of their history. Old Jindabyne was flooded to create Lake Jindabyne and the town was rebuilt. Therefore, their sense of place is also two-fold, but in a different way to that of Delegate. Older residents reflect on the Old Jindabyne as their sense of place, many of whom felt that it was removed or taken away from them. Their relationship with the Snowy River is far more intense as they remember the Snowy as it once was. Younger residents and newcomers to the area relate to the Snowy in a more disconnected way. Their sense of place is a sentimental and cultural connection of being part of the Snowy Mountains. However, the Snowy River itself is not an integral part of their sense of place.

7.3.2 Sense of Community and Belonging

The basic notion of a "sense of community" encompasses the concepts of solidarity, membership and involvement within a community (Carr 2002: 16). Simply, a sense of community is the subjective personal connection an individual feels towards a group. Similar to the fundamental make-up of the concept of social capital, Sarason (1974: 157) defines the term, sense of community, by including an element of reciprocity.

The perception of similarity to others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for

others what one expects from them, the feeling that they are one part of a larger dependable and stable structure- these are in some of the ingredients of the psychological sense of community (Sarason 1974).

Carr (2002:165) states that there is an obvious relationship between community members' sense of belonging and their identification with groups, which enhances participation and involvement in community activities. She cites belonging, involvement and participation as key elements of a successful group or community. As a result of this participation, a sense of community comes from the fulfilment of membership, influence, emotional connection, and reinforcement of needs.

This sense of community is found to be strong in each of the case studies, indicated by acts of reciprocity and the existence of memberships to different community organisations. An individual who is a member of a group feels a common identification to the other people involved. If this relationship is fulfilled, a cycle is created which fosters reciprocity, relationship building, and trust. This cycle exists within each case study community. Immediately evident are the high number of groups and organisations. Although the driving force behind these groups differs, it is the networks built that demonstrate the amount of social capital. For example, Jindabyne primarily has organisations centred around their tourism industry. This of course is most reasonable, as this is their link of commonality. Many people who live in Jindabyne work in Jindabyne. Therefore, groups evolve at the core of what holds people together. The "Tourism Snowy Mountains" groups and the "Chamber of Commerce" are good examples of this type of sense of community. People are involved with their community to help their primary industry but to also help each other.

7.3.3 Locality

"Locality" is defined as the geographical region where an individual or community engages. The physical geography of an area does not solely determine people's perception of a place. However, it does play a large role in a community's understanding and awareness. For example, living directly on

the banks of the Snowy River would give an individual a certain understanding of the river, that another person living farther away would not necessarily experience. This "local knowledge", that is derived from everyday experiences, is paramount to the understanding of the community's perceptions of the Snowy River (Carr 2002: 177).

The concept of "environmental determinism" states that the place in which they interact determines a human's relationship with the environment. Although environmental determinism cannot explain all relationships humans have with their environment, it does indeed contribute to the argument that people will have a certain understanding of a specific issue based on their geography. As shown in the study, locality plays a large part in the varied relationships people have with the Snowy River. Previously mentioned is the relationship Dalgety has with the Snowy River, but perhaps less obvious and more important, is the varying understandings of the river from the communities who are not as close. Delegate rated the environmental state of the river to be "poor" in the survey, whereas Dalgety primarily rated the river to be "terrible". It is most possible that because of Delegate's distance from the immediate problem they may have a less biased view of the river, without being so far away from it as to have little or no knowledge about it. In this case, locality and distance may not just diffuse information, but may give it validity and clarity.

Sense of place, sense of community and locality do not entirely encompass the concept of social capital. However, they are significant to the understanding of the community's perceptions of the Snowy River. Each of these three elements have shaped, skewed and changed the above perceptions according to their experiences. As illustrated in the study, similarities and dissimilarities exist within each community. It is these linking dimensions that are constant in all communities and which enable us to analyse social capital within them.

7.4 Outcomes

As experiences dictate and shape our views, the three identified dimensions discussed in the previous section are crucial to the understanding of the community's perceptions of the Snowy River. Determining that sense of place, sense of community and locality directly affect the social capital of an area and their perceptions. The adaptability of this research is most important as we can then explore these outcomes in relation to communities everywhere.

The importance of identifying these three dimensions is key to the understanding of how social capital plays a large role in the engagement of a community. As previously illustrated, social capital clarifies relationships between social interactions and their outcomes. The linkages that develop have the potential to contribute to the production of environmental quality and protection that is necessary for long-term social and ecological sustainability. As illustrated in Chapter Three, the more social capital exists within a community, the more successful it will be. The concluding chapter discusses the relevance and importance of this research for communities on a larger scale.

Chapter Eight

Conclusion

This thesis has argued that a major component for the successful engagement of communities is the level of social capital within the community. Social capital defined by Stone (2001: 4) consists "of networks of social relations that are characterised by norms of trust and reciprocity. Combined, it is these elements which are argued to sustain civil society and which enable people to act for mutual benefit". As social capital explores the networks, connections of people and their interactions, it must exist within a community context.

Social capital in a community is a resource which encourages collective action and which comprises the norms, sanctions of trust and reciprocity that operate within social networks (Stone 2001). Combined, these elements enable people to act together for mutual benefit. It is the quality of social relationships between individuals that affects their capacity to address and resolve problems they face in common. These cooperative actions are also known as collective actions. Collective action is facilitated through the existence of self-interested behaviour via a self-reinforcing cycle of trust and reciprocity. For collective action to be effective, a community must discuss alternative resolutions, consider adverse impacts, engage in the production and provision of solutions and provide for monitoring, conflict resolution and evaluation of outcomes. This interactive social process of identification of alternatives, discussion, and decision-making builds and sustains social capital (Rudd 2000:132).

Shared social visions allow for the consideration of alternative futures leading to policy prescriptions and concrete human action. In recent years there has been as expansion in collective management programs throughout the world, described by such terms as community management, participatory management, joint management and co-management. These programs also encourage the concept of social capital as they are conducive to the successful ground-up alternative to the top-down policies promoted in the past (Portes and Landolt 2000: 530).

Like everywhere else in Australia, the case studies have elected government officials who represent then in state and federal parliaments. However, only by individuals collectively working together to voice to government what their needs and wants are, will the local government officials be able to provide effective and efficient environmental policy and legislation. According to Rudd (2000), humans are key instigators of environmental change. However, to do this they will need to act collectively to develop cooperative solutions that can help control further environmental degradation. An understanding of the ways in which communities and individuals form their perceptions and opinions is vital to social capital and a crucial element of that community's success.

Communities have the potential to solve problems that other institutions cannot, especially when the problem comes from intangible social interactions or relations. As social capital relies heavily on private and dispersed information, often unavailable to governments and other regulatory bodies, the research undertaken for this project heavily based its data on first-hand information derived from the communities through interviews and surveys.

This study found three elements that directly linked communities and social capital. These elements provide key indicators for the study of social capital and how it relates to communities, and how it can be fostered. Sense of place, sense of community and locality are all inherent to the concept of community and can be harnessed to increase social capital. These three dimensions are transferable and applicable to any community and, therefore, allow us a basis of comparison between communities no matter the geography. The more evident these dimensions are in a community the more social capital exists. Hence, the potential for engagement of the community is higher.

The importance of this study is what social capital and collective action can do for these communities. As natural resource management has increasingly begun to include local and regional communities in decision-making processes, encouraging a ground-up approach and collective action is crucial.

While this thesis has demonstrated three main transferable social capital elements that exist within communities, other elements are also possible in exploring a community's capacity for involvement. Further social capital research exploring a wide range of indicators, and a broader cross-section of communities with a common environmental concern, would lead to a holistic investigation of a community's capacity for collective action. The study of social capital within communities is beneficial to governments wishing to engage communities for better natural resource management. Assessing social capital is crucial in understanding how communities can shape and participate in the development of natural resource management policy to meet their needs.

Finally, it is worth noting that the best method to measure social capital is by using quantitative and qualitative data. I employed this method to develop the design of this social capital measurement framework, and used a variety of indicators to assess social capital through the medium of surveys and interviews. This method of measurement for social capital within communities is flexible and interchangeable and can transcend geographical, cultural and economic boundaries.

References

Agriculture, Fisheries and Forestry Australia (AFFA). COAG Water Reform. Available from: http://www.affa.gov.au/content/output.cfm? ObjectID=D2C48F86-BA1A-11A1-A2200060B0A05634 (Accessed 11Feburary 2002).

Australian Bureau of Statistics (ABS), 2002. Available from: www.abs.gov.au (Accessed March 2002).

Bourdieu, P., 1986. "The Forms of Capital", *The Handbook of Theory and Research for the Sociology of Education*, J. Richardson (ed.), Greenwood Press, New York, New York.

Bowles, S. & Gintis, H., 2000. "Social Capital and Community Governance", *Working Paper: University of Massachusetts*. Submitted December 22, 2000.

Carr, A., 2002. Green Tape: Principles and Practises of Environmental Stewardship, Federation Press, Sydney.

Cohen, D. and Prusak, L., 2001. *In Good Company: How social capital makes organisations work*, Harvard Business School Press, Boston.

Coleman, James. 1988: "Social Capital in the Creation of Human Capital", *American Journal of Sociology*, 94(1988): 95-120.

Collis, B., 1990. *Snowy: The Making of Modern Australia*, Hodder & Stoughton, Sydney.

Community Participation Network (CPN). What is Social Capital? Available from: http://www.cpn.org. (Accessed November 2001).

Cox, Eva., 1995 *A Truly Civil Society*. Boyer Lecture Series. ABC Radio.

Crosweller, Allison, "Movement at the station", *The Weekend Australian*, April 20-21. p25.

Delegate Progress Association (DPA), 2000. *History of Delegate*, Pamphlet.

Environment Protection Agency (EPA),1995. *1995 State of Environment Report*. Available from: http://www.epa.nsw.gov.au/soe/95/8_3s1.htm. (Accessed November 2001).

Environment Protection Agency (EPA), 1998. *Snowy River Inquiry*. Available from: www.epa.nsw.gov.au, (Accessed November 2001).

Eyles, J., & Smith, D., 1988. *Qualitative Methods in Human Geography*. Polity Press, Oxford.

Falk, Ian & Harrison, Lesley, 1998. *Indicators of social capital: Social capital as the product of local interactive learning processes*, Centre for Research and Learning in Regional Australia, CRLRA Discussion Paper Series Paper d4/1998.

Falk, Ian & Kilpatrick, S., 2000. "What is Social Capital? A Study of Interaction in a Rural Community", *Journal of the European Society for Rural Sociology*, 40(1): 87-110.

Fielding, N. & Fielding, J., 1986. Linking data: the articulation of qualitative and quantitative methods in social research, Sage Publications, London.

Finlayson, B.L., Gippel, C.J., & Brizga, S.O., 1994. "Effects of Reservoirs on Downstream Aquatic Habitat", *Australian Water and Wastewater Association Journal*, (1994): 32-46.

Flora, J., 1998: Social Capital and Communities of Place, *Journal of Rural Sociology*. 63(4): pp 481-506.

Foley, M. W. & Edwards, B., 1999. "Is It Time to Disinvest in Social Capital?", *Journal of Public Policy*, 19(2): 141-173.

Grootaert, C., 1998: Social Capital: "The Missing Link?", The World Bank Social Capital Initiative Working Paper No. 3.

Grootaert, C. & Bastelaer, T. van, 2001. "Understanding and Measuring Social Capital: A synthesis of findings and recommendations from the social capital initiative", *The World Bank Social Capital Initiative Working Paper No.24.*

Handmer, J.W., Dorcey, A.H.J. & Smith, D.I., 1991. *Negotiating water: conflict resolution in Australian water management*, Centre for Resource and Environmental Studies, Australian National University, Canberra.

Kelle , U., 1995. "Computer aided qualitative data analysis", *In Theory, Method, and Practice*, Sage Publications, London.

Kilpatrick, S. Field, J., Falk, I., 2000. *Social Capital: An analytical tool for exploring lifelong learning and community development*. Discussion Paper D13, University of Tasmania, Hobart.

Krishna, A.& Uphoff, N., 1999. "Mapping and Measuring Social Capital", *World Bank Social Capital Working Paper Series 13.*

Lee, R. G., Field, D. R., & Burch, W.R., 1990. Community and Forestry: Communities in the sociology of natural resources, Westview Press, Boulder.

Maclean, N., 1976. *A River Runs Through It, and Other Stories*, University of Chicago Press, Chicago.

Marshall, C. & Rossman, Gretchen B., 1989. *Designing Qualitative Research*, Sage Publications, London.

May, T., 1997: *Social Research: issues, methods and process*. Open University Press, Buckingham.

Mayring, P., 2001. "Combination and Integration of Qualitative and Quantitative Analysis", *Forum of Qualitative Social Research*, 2(1): 14-21.

McClenaghan, Pauline, 2001: "Social Capital: Exploring the theoretical Foundations of Community Development Education", *British Educational Research Journal*, (27): 26-41.

Murray-Darling Basin Commission (MDBC), 2002. The Cap Project. Available from:www.mdbc.gov.au/naturalresources/policies_strategies /projectscreens/capproject.htm. (Accessed April 2002).

Patton, M., 1990.*Qualitative Evaluation and Research Methods*. Sage Publications, California.

Portes, Alejandro & Landolt, Patricia. 2000. "Social Capital: Promise and Pitfalls of its Role in Development", *Journal of Latin American Studies*, (32): 529-547.

Preissle, J., 1992. "Qualitative Research and Design", *The Handbook of Qualitative Research in Education*, M. LeCompte, J. Preissle, & W. Millroy (eds), Academic Press, San Diego.

Pretty, J. & Ward, H., 2001. "Social Capital and the Environment", *World Development*. 29 (2):209-227.

Putnam, R., 1995, "Bowling Alone: the collapse and revival of American Communities", *Journal of Democracy*, 6 (1): 65-78.

Relph, Edward, 1976. *Place and Placelessness*, Pion Publishing: London.

Roseland, M., "Sustainable community development: integrating environmental, economic and social objectives", *Progress in Planning* , (54): 23-57.

Rudd, M., 2000. "Live long and prosper: collective action, social capital and social vision", *Ecological Economics*, 234(34): 131-144.

Rutherford, D., 2002. *Effects on the Snowy River*, Personal notes.

Sarason, SB., 1974. The Psychological Sense of Community: Perspectives for Community Psychology, Jossey-Bass, San Franscico.

Seddon, G., 1994. Searching for the Snowy: An Environmental History, Allen & Unwin: Sydney.

Senecha, S. & Cantrill, J., 2001. "Using the sense of self-in-place: construct in the context of environmental policy making and landscape planning", *Journal of Environmental Science and Policy* (4): 185-204.

Serageldin, Ismail, 1998. "The initiative on defining, monitoring and measuring social capital", *The World Bank Social Capital Initiative working paper No. 1.*

Sewell, W.R.D., Handmer, J.W., Smith, D.I., 1985. "Water planning in Australia from myths to reality", Centre for Resource and Environmental Studies, Australian National University, Canberra.

Smith, David, 1998. *Water in Australia,* Oxford University Press: Melbourne.

Snowy Genoa Catchment Management Committee (SGCMC), 1996. Expert Panel Environmental Flow Assessment of the Snowy River Below Jindabyne Dam.

Snowy Hydro Corporatisation Act 1997, Act No. 105/1997. Version incorporating amendments as at 15 May 2001. Available from: http://www.dms.dpc.vic.gov.au:2d/S/ACT01786/0_1.html. (Accessed March 2002).

Snowy Mountains Hydroelectric Scheme (SMHS), Available from: www.snowyhydro.com.au (Accessed November 2001).

Snowy River Interstate Catchment Coordination Committee (SRICCC), 1993. *Case Study: The Snowy River Environmental Flows.* Available from: http://www.epa.nsw.gov.au/soe/95/8_3s1.htm#ch04/ch04.htm.6593. (Accessed March 2002).

South-East Region Water Management Strategy (SERWMS), 1995. *Snowy Genoa CMC Workshop*, Workshop Summary 27 April, 1995.

Stone, Wendy, 2001. Measuring Social Capital, *Australian Institute of Family Studies*, research paper no. 24.

Trochim, William MK., 1999. Research Methods Knowledge Base, 2nd Edition, University of British Columbia: Vancouver.

Trow, Martin A., 1991. University and Society: essays on the social role of research and higher education, Jessica Kingsley Publisher, London.

Winter, Ian, 2000a. "Major themes and debates in the social capital literature", *in Social capital and public policy in Australia*, The Australian Connection.

Winter, Ian, 2000b. "Towards a theorised understanding of family life and social capital", *Australian Institute of Family Studies*, *Working Paper No. 21*.

Woolcock, Michael & Narayan, Deepa, 2000. "Social Capital: Implications for Development Theory, Research and Policy", *World Bank Observer*, (15).

World Bank, 1999. *What is Social Capital?* Available from: www.worldbank.org/poverty/scapital/whatsc.htm. (Accessed January 2002).

World Bank, 2002. *Social Capital Methods and Tools*, Available from: www.worldbank.org/poverty/scapital/methods/index.htm. (Accessed January 2002).

Yin, Robert K., 1985. *Case Study Research Design and Methods*, Sage Publications, London.

List of Informants

The following is a list of individuals who have consented to use their names in this thesis.

Graeme Enders

Julie Greenwood

Charlie Litchfield

Brett Miners

Bill Peterie

Alma Reed

"Rix"

Geoff Stubbs

Christina Webb

* Others indicated in this thesis as "Pers. Comm. Anon" have indicated for anonymity on their consent forms.

Appendices

Appendix A: Copy of the Snowy River Survey

Appendix B: Copy of interview questions

Appendix C: Copy of the Human Ethics Committee Application

Appendix D: Results of Snowy River Survey

Appendix A

This voluntary survey has been designed for a Master's research thesis
exploring local perceptions and needs in regards to the Snowy River. Please do
not feel obliged to participate or answer all the questions. If you choose to
participate, only answer what you feel comfortable with. This survey is
confidential, and no names will be used in my research. If you have any
questions pertaining to this questionnaire, please feel free to contact me. Thank
you for your participation. Jeanne Adeland, Master's of Environmental
Science, ANU, Canberra, ACT. Contact details: jadeland@hotmail.com or
office no. (02) 6125-3421.

Your thoughts about the Snowy River

Town: _____

What does the Snowy River mean to you?

Which of the following relationships with the Snowy River is most important
to you?
Personal: memories, consider it to be a special place
Leisure/Recreation: fishing, walking, swimming
Business: rely on Snowy River for economic livelihood

How often to do go down to the Snowy River?
all the time (everyday)
often (2-4 times a week)

once a week

sometimes (once a month)

a few times a year

never

In your opinion, what is the current environmental state of the Snowy River?

excellent

very good

average

poor

terrible

According to you, what is the most important problem with the Snowy River?

pollution

water flows

fish ecology

general state of the river

other (please specify)_____

6- In your opinion, do you think they should increase the flow of the Snowy River?

Yes, why? _____

No, why? _____

Not sure, why? _____

Please feel free to add comments to your above answer if you wish:

_____

_____

_____

What percentage of the Snowy River flow do you think should be restored?

100%

75%

50%

21%

5%

other:

Do you expect any improvements in the river from Government's agreement to return about a quarter of the natural flows below Jindabyne Dam?

many improvements

some improvement

little improvement

Do you expect any problems to arise from this decision?

many

lots

a few

If so, what kind of problems?

Do you know about the Snowy River Recovery Programme?

Yes

No (please proceed to Question 12)

What would be the most important outcome of the Snowy River Recovery to you?

_____

_____

_____

Do you see any other benefits being generated by the Snowy River Recovery?

many

lots

a few

If so, what are they?

_____

_____

_____

Do you believe that an increase in flows for the Snowy River would help to stimulate economic growth in your community?

Yes- very much

Yes, somewhat

No

Don't know

If you answered yes to the above question, how do you think it would increase economic activity? (circle all that apply)

Recreation: camping, outdoor activities

Tourism: people would visit the area

Eco-tourism: canoeing, water-based activities

Business

Other:_____

15A- Would you want to participate in the recovery of the Snowy River?

yes

maybe

no

15B- If yes, how?

volunteer action

support

commercial services

donation

Any other comments or thoughts?

_____

_____

_____

_____

_____

Thank you for your participation

Appendix B

The following questions will not be viewed by anyone but myself, they are simply a guide, this is a semi-structured interview.

***Before proceeding:

-make sure consent form is completed

Do you live in town or in the surrounding area? If not in town, how far away? Name of another area/community?

How many years (or months) have you lived in this region (previously defined by interviewee)?

Is the place where you spend most of your time working? in this region? If no longer working, where DID they work?

Are you a member of a voluntary organisation? Are you fairly active in this group?

What kind of group?
church/religious organisation
sport/recreational organisation
art, music or educational organisation
Country Women's Association (CWA)
Returned Servicemen's League (RSL)
environmental organisation
charity

other: _____

If yes, what do you enjoy best being part of a volunteer-based group? Why are you involved?

How important is economic growth in your region to you?

What kind of economic growth do you think would be good for your town? If any?

Do you have any ideas as to what could be done economically in your region, perhaps relating specifically to the Snowy River?

What does the Snowy River mean to you?

What kind of relationship would you say you have with the Snowy River?
Examples and/or Prompts:
Personal: memories, consider it to be a special place
Leisure/Recreation: fishing, walking, swimming
Business: rely on Snowy River for economic livelihood

How often to do go down to the Snowy River?

In your opinion, what is the current environmental state of the Snowy River?

According to you, what is the most important problem with the Snowy River?
Prompts:
pollution
water flows
fish ecology
general state of the river

other (please specify)_____

15- In your opinion, do you think they should increase the flow of the Snowy River?

If unsure, why, yes, why, no, why?

What percentage do you think the Snowy River should be restored to?

Since the Government has agreed to return about a quarter of the natural flows below Jindabyne, do you think that there will be any improvements to the River?

Do you expect any problems to arise from this decision?

19- Do you know about the Snowy River Recovery Programme? What do you know about it?

What would be the most important outcome of the Snowy River Recovery to you?

Do you see any other benefits being generated by the Snowy River Recovery?

Do you believe that an increase in flows for the Snowy River would help to stimulate economic growth in your community?

Appendix C

ALL APPLICATIONS TO BE TYPED

THE AUSTRALIAN NATIONAL UNIVERSITY

HUMAN RESEARCH ETHICS COMMITTEE

APPLICATION FORM

Name of Researcher (including title): Ms Jeanne Adeland

Position Held (staff, postgraduate, undergraduate, etc.): Masters student

Student ID no. (if applicable): u3373988

Dept/Group/Centre: School of Resources Environment and Society,
Geography
Mailing address:
School of Resources Environment and Society
The Australian National University

Building 48a

ACTON ACT 0200

Telephone: 6125 3421 (work hours) 6262 5131 (home)

Fax:

Email: s3373988@student.anu.edu.au

Date: 1/03/02

Project Title:

What social capital capacity exists in the communities along the Snowy River and what can be done to build and strengthen that capacity?

1.　　(a)　　Briefly describe the basic purposes of the research proposed:

The purpose of my research is to assess the social capital capacity within three case study communities situated along the Snowy River. This project is in conjunction with the Land and Water Conservation, NSW Snowy River Recovery Project. The department has agreed to the proposal and will financially aid with travel and research expenses

In answering this I will explore:

the nature and theories of social capital within a community context;
provide background and current recovery situation regarding the Snowy River;
a detailed profile of each case study community;
conduct three surveys to:
Establish a general idea of community perceptions and current relationship(s) with the Snowy River

Explore and identify the perceived needs and expectations of the community in relation to the River and its recovery.

Investigate the perceptions and expectations of visitors to these Snowy River communities.

It is hoped that my work will contribute to the possible economic growth of these communities on a small and grass-roots level and aid them in targeting their efforts more efficiently.

(b)   Outline the design of the project:

Much of my project is based on the communities involvement to provide information regarding their interest in improving their economic situation. There exits already different organisations in each of my case study communities that have made efforts to better their situation, all of whom believe that the Snowy River Recovery is key to making their actions become realities. With this information that I plan on gathering, I will then be able to access the amount of social capital using the World Bank Social Capital criteria as a measurement to correlate this information. Using the background information of the Snowy River and the literature review of the theory of social capital, I hope to correlate the information to show possible trend, growth and help to develop an action plan for these communities.

The following is an outline for the project:

Research outline and description

Snowy river and scheme- background and history

Current Snowy River situation and recovery

Defining social capital/public participation

Case study locations: Jindabyne, Delegate and Dalgety

-Detailed geographic and current economic description of case study communities

-What kind of social capital currently exists?

How to achieve this kind of information?

Surveys:

Community perceptions and current relationship(s) with the Snowy River,

What are the identified and perceived needs and expectations of the community in relation to the river, and its recovery?

What are the perceptions and expectations of visitors to these Snowy River communities, in relation to the recovery of the Snowy River?

Comparative assessment of these communities

Proposed action/solution

Conclusion:

How best to strengthen social capital in these communities

What is feasible- the beginning of an action plan?

(c)   Describe the research procedures as they affect the research subjects and any other parties involved:

The research procedure that will affect research subjects is my proposal to conduct surveys and interviews with a range of people involved in their communities at different levels. This will consist of qualitative survey questions and semi-structured interviews conversations that will explore their thoughts and feelings relating to the Snowy River.

Contact with research subjects will primarily be made through a third party, Graeme Enders- Land and Water Conservation, NSW. (detailed in question 8); Once contact has been made with key people and they have agreed to meet with me, I will travel to their respective communities, at a time that is convenient to them, to discus my project and intent as well as have them be a part of my survey construction. This will help me ensure that I am asking the

appropriate questions and they may suggest areas of questioning that might be pertinent to the project, that only a local person might know.

In terms of the interview process, the topics likely to be covered in an interview will be sent to participants to review and so they may ask any questions or make any comments;

I will request to conduct a one on one interview with the subjects at a time and place convenient to them;

I will request that participants sign a consent form (detailed in question 10);

The interview length is highly negotiable, depending on the participant's available time and interest in the subject. I will make it clear that they are welcome to abandon the interview at any stage;

Information gathered during the interviews will contribute to the design of my research and to the assessment of social capital within these key communities.

[(a),(b) and (c) should be intelligible to a non-specialist.]

2.   What in your opinion are the ethical considerations involved in this proposal?

(You may wish to comment, for example, on issue to do with consent, confidentiality, risk to subjects, etc.).

The main ethical consideration in this proposal is that it may involve people commenting on the Commonwealth and State government's decision on the Snowy Water Recovery processes and individuals and relationships with other people involved that process. Issues covered during interviews may be sensitive and participants may desire the confidentiality of their responses. The surveys and interviews will be conducted in a confidential manner and specifically, in interviews, subjects may express sentiments which are reflective of their particular set of beliefs, perceptions, customs and cultural heritage. At all times, these sentiments will be treated with respect and sensitivity.

Risk to Subjects: The surveys will be conducted confidentially(meaning, the identity of the subject will not be revealed), and delivered to me directly, therefore, there would be no risk for the participants. The interviewee may discuss personal sentiment, therefore, all their comments and any discussion will be confidential, unless they give written consent to use their name in my thesis.

Confidentiality: For reasons outlined in the above paragraph, participants may have a desire to ensure that their details and their comments remain confidential. Conversations with participants will not be mechanically recorded unless agreed to. Other procedures I plan to follow to protect their confidentiality are detailed in question 12. Briefly, such procedures include storing all records of interviews in locked storage; and within my thesis, names and positions will not be mentioned unless otherwise agreed to, and quotes or comments will not be attributable to any individual unless otherwise agreed.

Individuals and coalitions: The people I hope to interview are not members of political groups, but may have an affiliation with other active organisations. In any case, where a participant is speaking on behalf of an organisation, I will seek clarity as to which comments are those of the individual and those that belong to that group. If the individual does not wish to be associated with the group to which they belong for the purposes of the research, their wish will be honoured.

Consent: Those interviewed and surveyed will do so voluntarily (see question 8 for more details). Participants will be given information on their role in my research, my aim and objectives, potential benefits from my research and also any possible risks for them in participating. I will assure those interviewed that their names will be kept secure and that their identity will not be revealed in my thesis or any subsequent reports or presentations, unless they have agreed otherwise. I will request participants sign a letter that details their role in my research. Once interviews have been conducted, I will summarise my notes to be approved by the interviewees who have indicated that they would like to do so, and at this stage they may adjust their comments and their amendments will be adopted. If any of the interviewees wish to withdraw from the research at any stage, they will in no way be vilified in my thesis or subsequent reports or presentations. More information on 'consent' is covered in question 10.

3.   Outline the reasons which lead you to be satisfied that the possible benefit to be gained from the research proposed justifies the discomforts and risks involved (if any).

I do not believe there to be significant risk to those involved in my research, especially given that I will take all measures possible to protect their identities and ensure that they are happy with their contribution to my research. I believe that there are several benefits that may occur from my research. Such benefits include:

Economic benefits: The research may help identify certain areas of the community that might be able to sustain certain tourism, eco-tourism and other economically beneficial activities.

Social Capital: Social capital is an important part of Australian culture. The recognition of its importance within rural communities, in particular, may help to foster and cultivate even more than what currently exists. The case studies will also bring about an awareness to the neighbouring towns.

Baseline Community Survey: The Snowy River Recovery Program is conducting an environmental baseline project to help gauge the effects of the river flows over the long-term. This research contributes to the Recovery Program's Community Baseline data. This information will hopefully engage governments to invest in areas within these communities, where it is needed. This research intends to guide the government's aid to the places where the communities need and want it.

4.   Who are the investigators (including assistants) who will conduct the research and what are their qualifications and experience?

I, Jeanne Adeland, will be the sole conductor of interviews. I will draw on my previous experience in conducting interviews in which I dealt with all subjects and information with confidentiality and sensitivity. The surveys will be filled out by the individuals themselves, therefore, no one else will be involved in that process.

My work experience outside of university further qualifies me for the research that I will conduct. I have worked with the Nature Conservancy of Canada, conducting interviews and gathering information in rural communities in Canada. This information was kept private. I was researching very sensitive subjects regarding the environment and individual arguments within communities and between levels of government. I value and honour the responsibility of discretion.

For all the reasons mentioned above, I believe I am adequately qualified and experienced to conduct my proposed research project.

As well, my academic supervisor Dr Richard Baker has extensive research experience in rural Australia and will be in a position to give me feedback on my interview methods and will accompany me in the field for some of the research.

5.   Can the proposer certify that the persons listed in answer to 4 above has been fully briefed on appropriate procedures and in particular that they have read and are familiar with the guidelines issued by the NH & MRC and relevant professional body (please specify)?

As the only conductor of my proposed research project, I can certify that I have read and am familiar with the guidelines issued by the NH & MRC.

6.   Are arrangements to handle emergencies or difficulties necessary? If so, briefly describe the arrangements made.

Every participant in my research will be given my contact details and the contact details of my academic supervisor and will be encouraged to contact any of us should any emergencies or difficulties arise. Given that I will be contacting interviewees through the current head of the Snowy River Recovery Program, Graeme Enders, (affiliated with Land and Water Conservation, NSW), he will be available to act as a conduit for complaints or any other matters that may arise.

7.   **Please specify all sources of information:** As described above in this application, the contact details for research subjects will be gained through Graeme Enders. The likely source of contacts are summarised below:

Please indicate specific Department

eg. Individual subjects (Y) Graeme Enders- Snowy River Recovery

Commonwealth Department (N)

State/Territory Department (Y) NSW Land and Water Conservation

Other sources (Y) Local residents, conservation groups, etc

8.   In cases where subjects are identified from information held by another party (eg., doctor, hospital association) describe the arrangement whereby you gain access to this information.   (You may wish to attach relevant correspondence.)

I am likely to identify and contact most of my subjects through Graeme Enders (Land and Water Conservation, NSW and Snowy River Recovery Program). The arrangement is currently that he will introduce me personally to the people he feels most likely will be able to help me in my research. He will have previously made contact with these people to ensure their interest in working with me.

9.   Specify whether subjects will include students, children, the mentally ill or others in a dependent relationship, and specifically if payment will be made to any subjects. Please give details of these arrangements.

The interview process will not include children, mentally ill or students. I will be aiming to interview people who are already involved in community action

regarding the Snowy River and some local adult residents. There will also not be payment to any subjects.

10.   Describe the procedures to be followed in obtaining the informed consent of subjects and/or of others responsible.   If information for the purpose of obtaining consent is provided in writing, attach any relevant documents; otherwise specify the information provided.

As mentioned above, initial contact with research subjects will be made through Graeme Enders. Once subjects have indicated an interest in being involved with this project, I will send them information detailing the aims and nature of my research and detail their role as interviewees, and my obligations to them as a researcher. At the beginning of each interview I will request that each interviewee sign a consent form in which their rights and my obligations are set out clearly. Points that will be stressed include:

any comments or information given to me will be kept confidential:
participants' names and positions will not be mentioned anywhere in my thesis unless agreed otherwise;
if any direct quotes are used in my thesis, they will not be attributable to the participant unless agreed otherwise;
participants will be given the choice as to whether or not they are willing to be tape recorded- if they choose to be, they will have control over what is recorded in the interview;
information, records and notes from the interview will be secured in a locked area in the university and will be destroyed at the completion of my project;
participants will be given the option to view notes from their interview and make any amendments, which will be honoured;
participants will be given the opportunity to receive a summary of my final project if they wish;

participants will be free to withdraw any comments they have made, or withdraw from the research project altogether without vilification

11.   Comment on any cultural or social attitudes of subjects which have affected the design of the research or which may affect its conduct.

Interview questions will be framed in a non-threatening way, and I will conduct myself as an interested observer and will listen respectfully to all comments made;

My survey will be for those only who are wiling to participate and people will not be forced or coerced in any manner.

The identity of the other participants involved in the research will not be revealed in any case;

Each participant will be given the opportunity to review the topics to be discussed in the interview prior to meeting and they will be given the opportunity to alter the topics covered;

If any comments made during interviews or at other times are decided to be too sensitive, or inappropriate in any other way, participants will have the opportunity to withdraw or alter their comments, and such amendments will be honoured.

12.   Give details of the measures which will be adopted to protect confidential information about subjects.

All notes, tapes, e-mails etc. that relate to the identity of participants will be stored in a locked facility within the School of Resources, Environment and Society. Within my thesis, and any subsequent reports or presentations, participants names and positions will not be recorded, unless otherwise agreed. Any direct quotes or other comments will be cited in a way that will not reveal the identity of participants.

13. **Date on which project will begin:** March 30th, 2002 (or once I receive permission from the committee) **and end:** June 30th, 2002

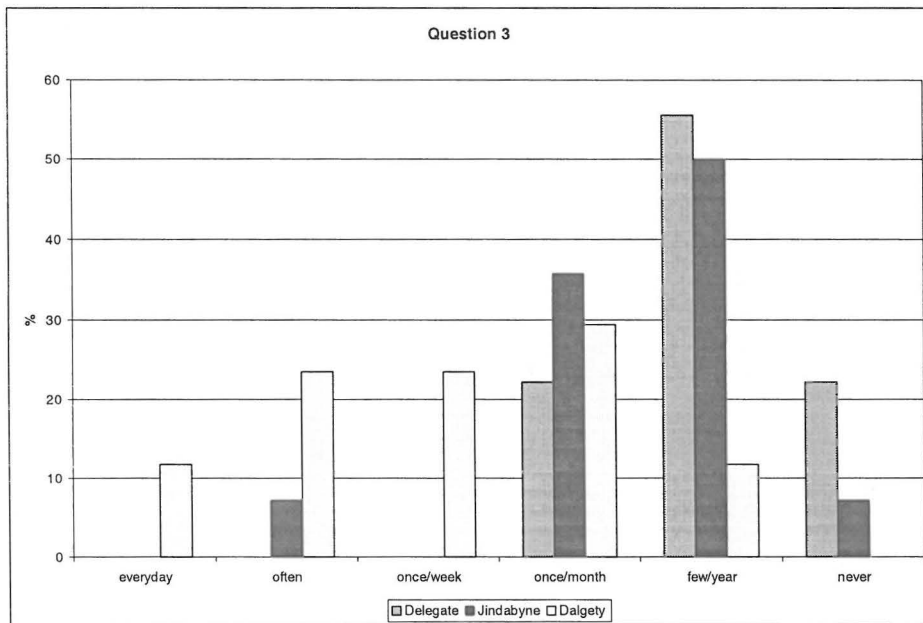14. I agree to notify the Committee in writing of any significant departures from this protocol.
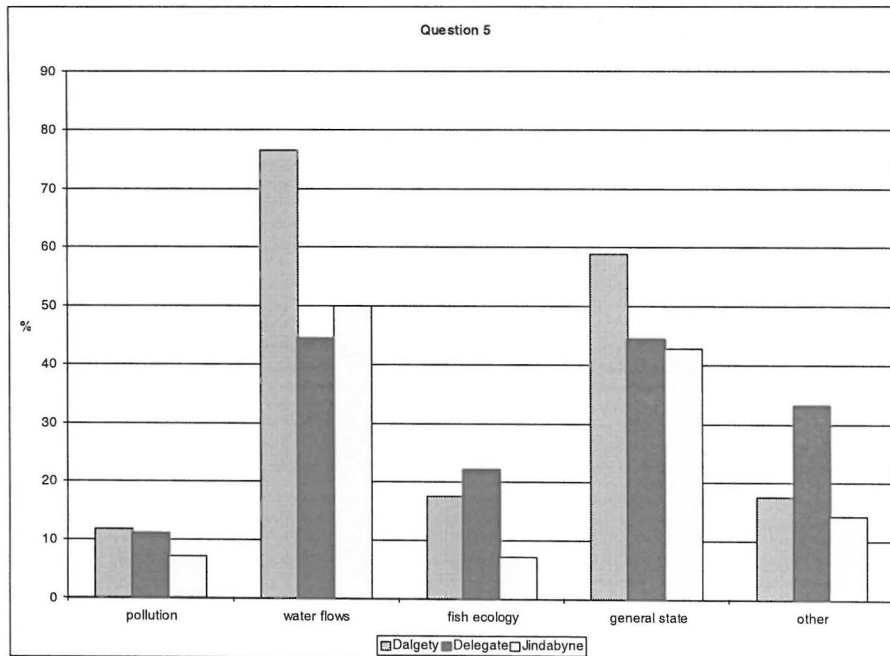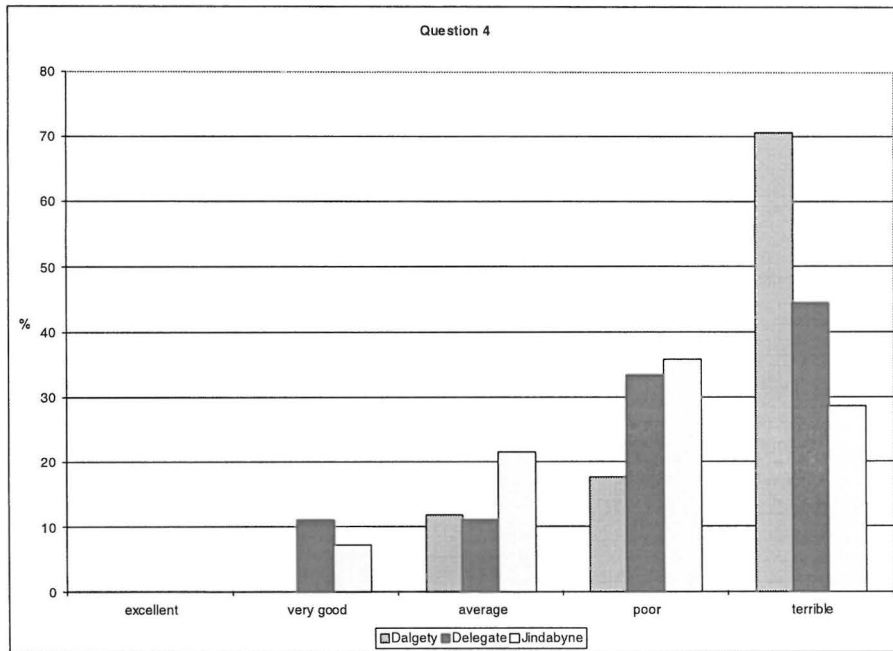
Appendix D

The following data derives from the Snowy River Perceptions Survey.
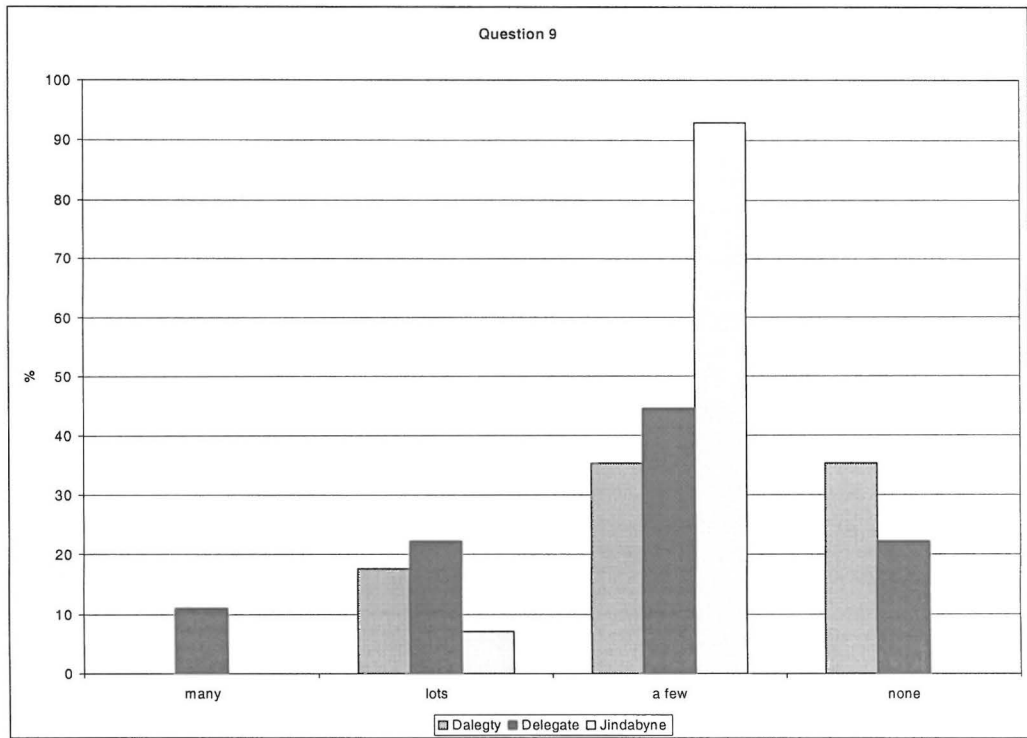
N= number of respondents

Question 2

n=40

Question 3

Question 4

Question 5

n=40

Question 6

n=40

Question 7

n=40

Question 8

n=40

Question 9

n=40

Question 10

n=40

Question 12

n=40

Question 13

n=40

114
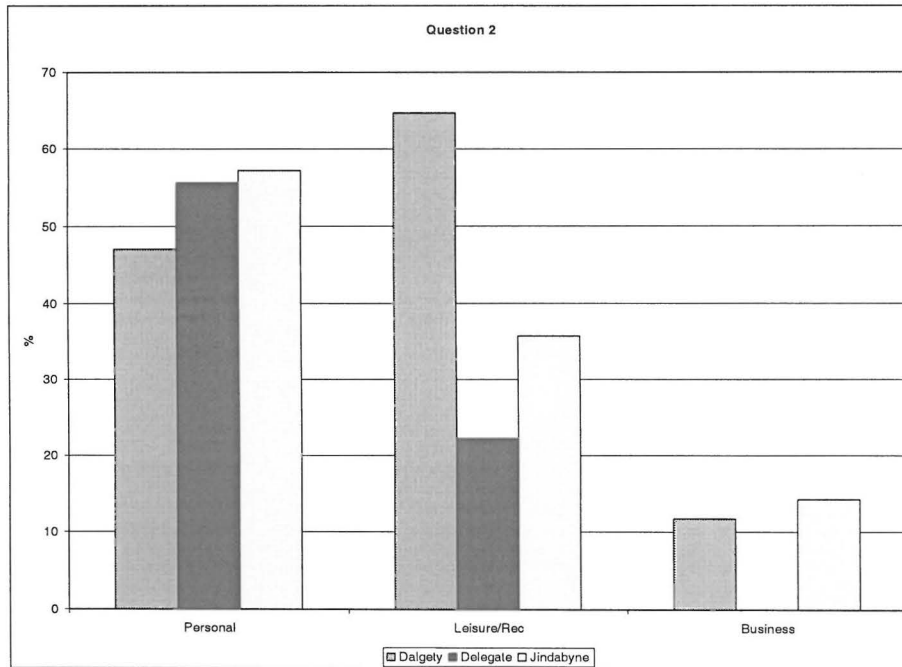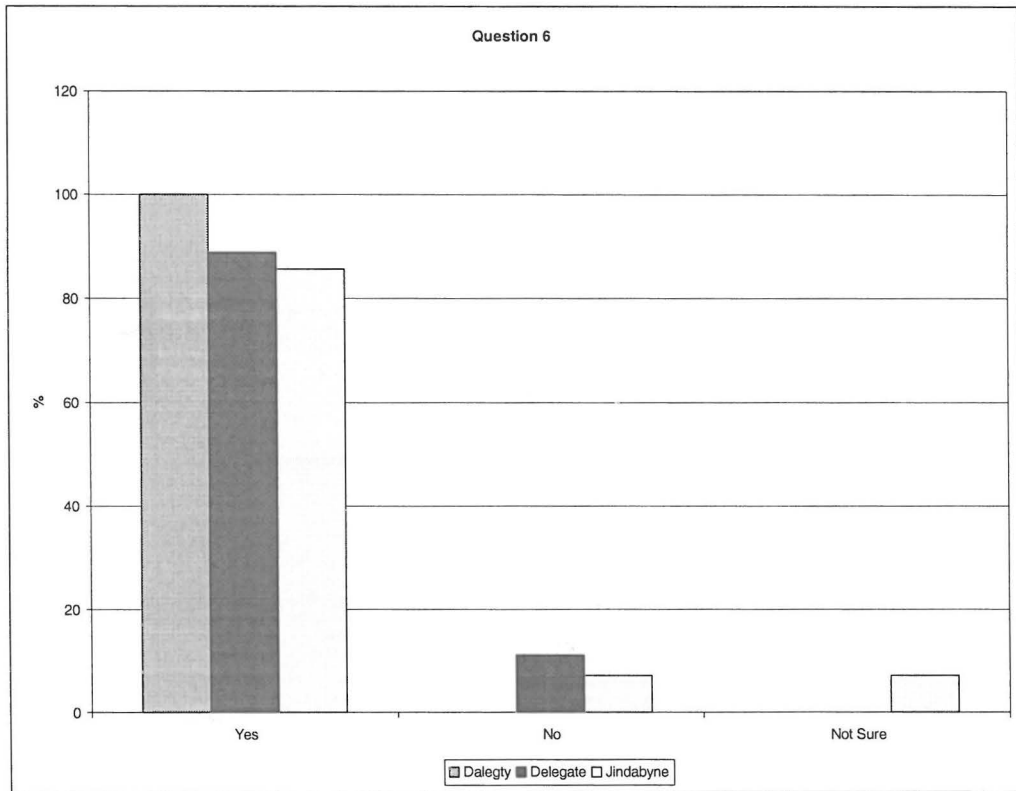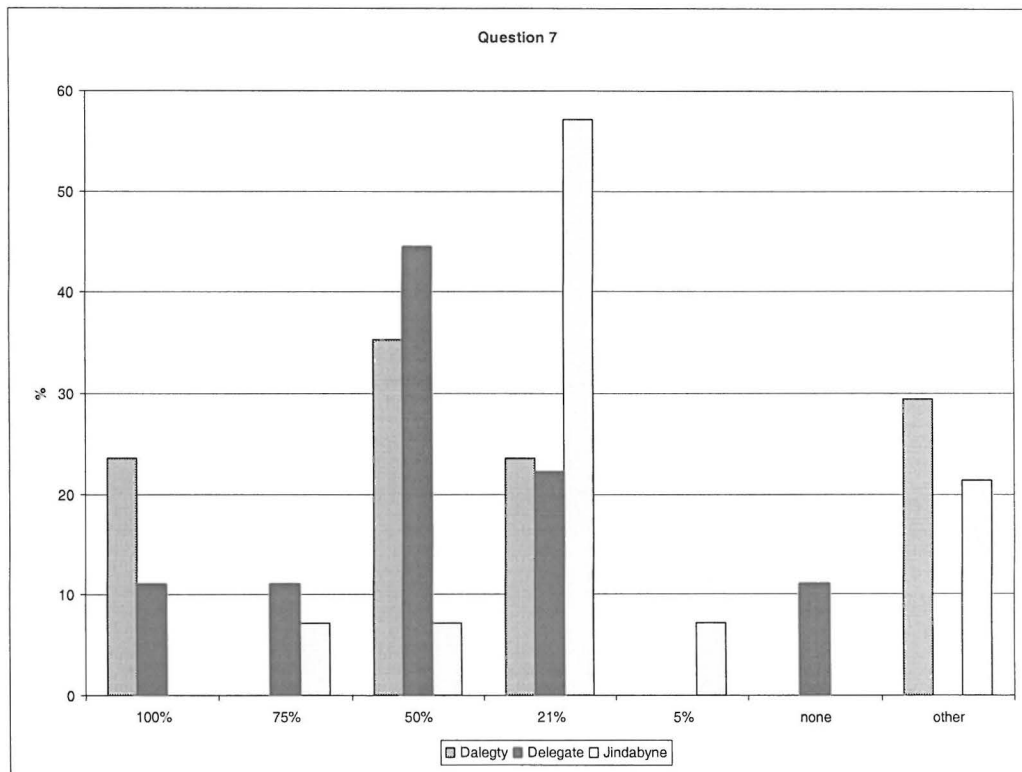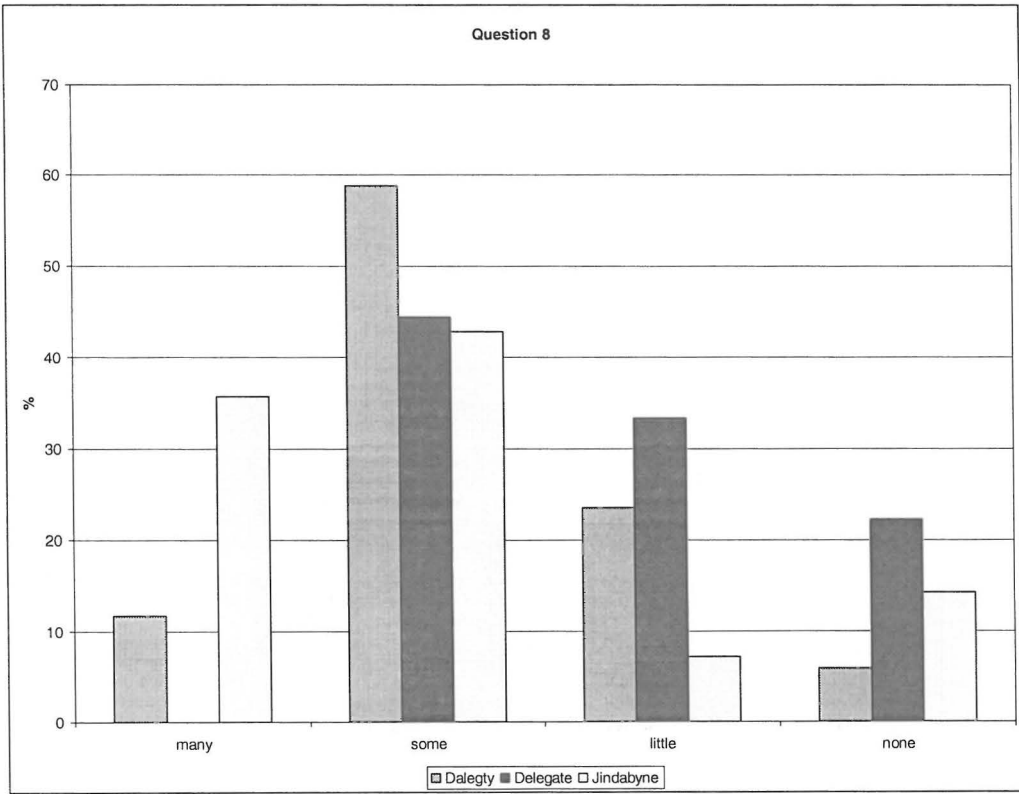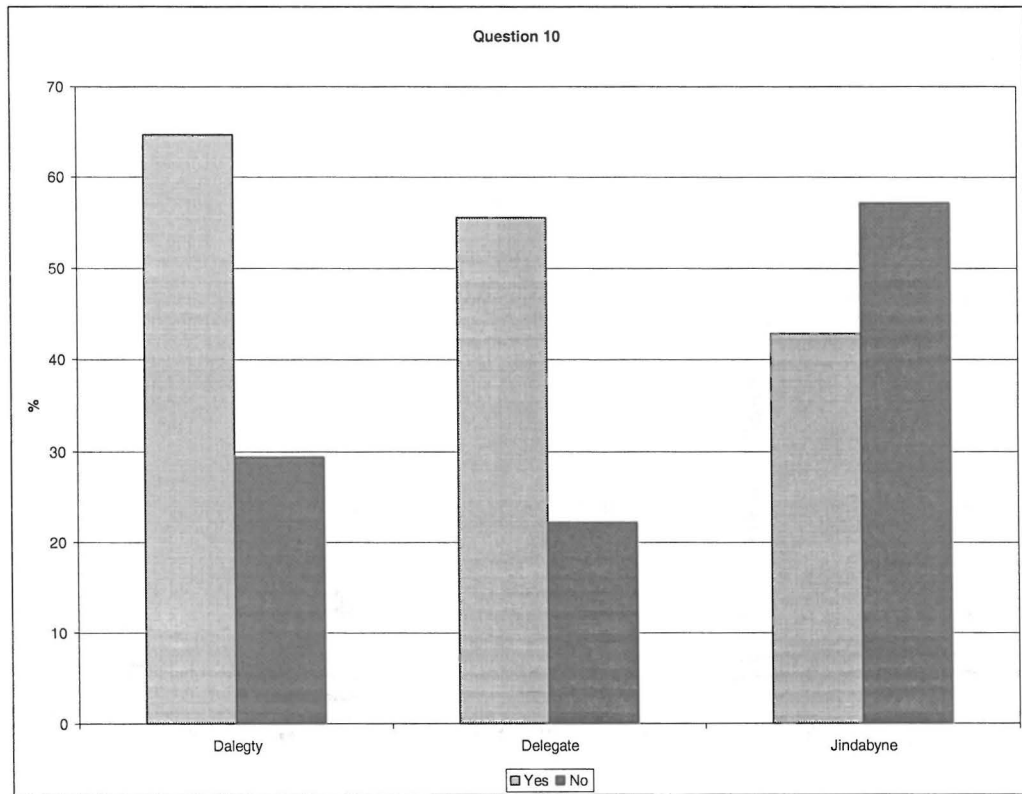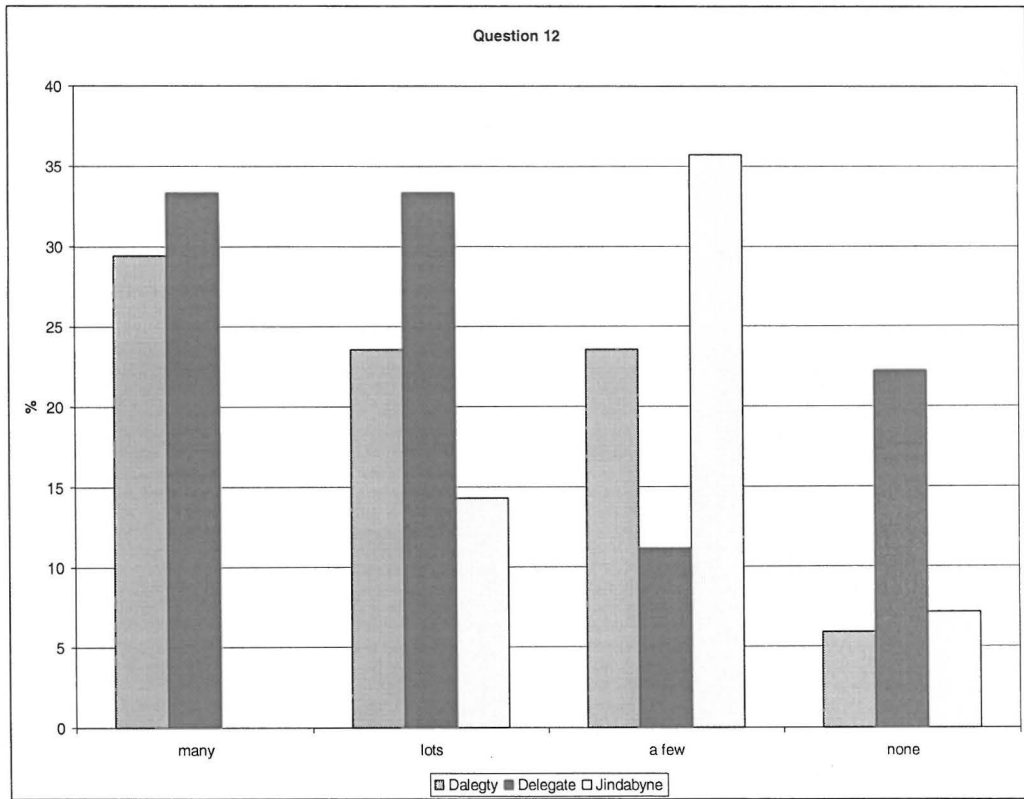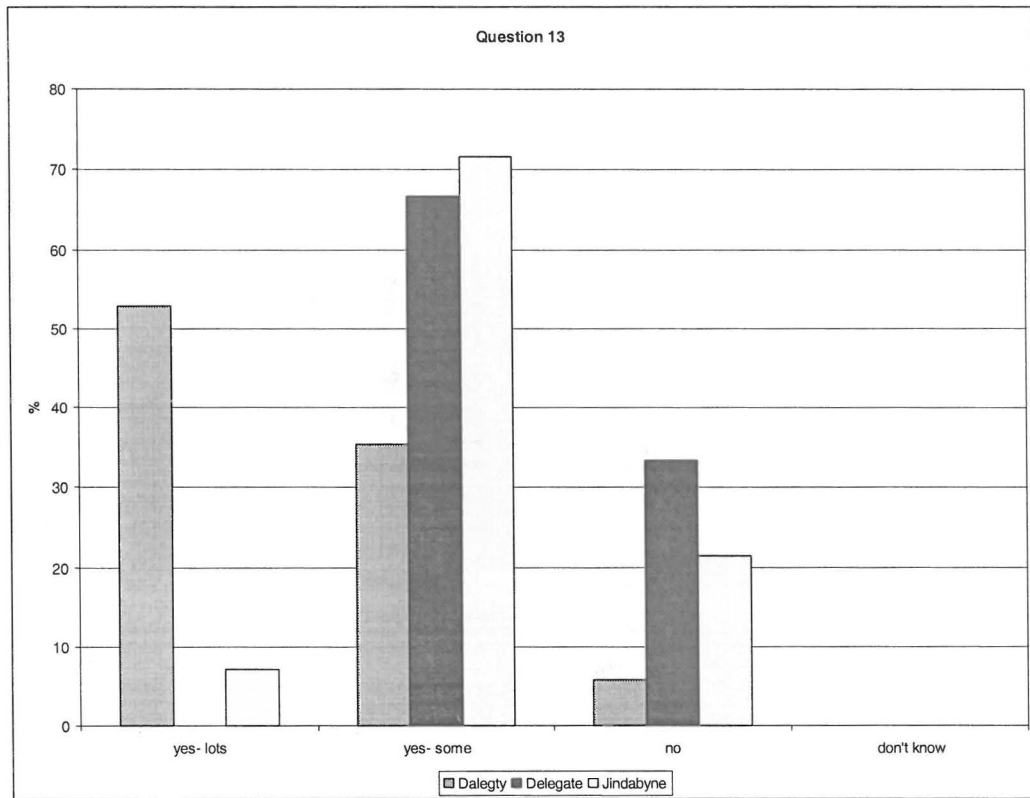
The PhD research program has a practical objective of participating in implementation of NIFS to enhance its chances of success. It has an intellectual objective of contributing to the international and national body of knowledge about government initiatives for capacity building in Indigenous communities. Feedback from the research could be used by government to inform future capacity building programmes.

COMMUNICATION OF RESULTS

Stakeholders to whom results are to be communicated.

The University:	progress seminars, PhD thesis
Wider academic community	published papers in recognised journals
Sponsors (eg. NPWS):	progress reports as per policy for study leave
Aboriginal people generally	articles in Koori Mail, other widely distributed media. Correspondence with people on consultants' stakeholder database.
Specific communities involved in implementation	Newsletter, plain English report on results of research, verbal and visual forms of communication eg poster displays, power point presentations, etc
Timber industry	purpose written paper in appropriate journal, presentations as required, newsletter.

NOT FOR LOAN