Biosecurity through Community Engagement:
A Case Study of a Rural Agricultural Region

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Declaration

I hereby declare that the work herein, now submitted as a thesis for the degree of Doctor of Philosophy of Charles Darwin University, is the result of my own investigations, and all references to ideas and work of other researchers have been specifically acknowledged. I hereby certify that the work embodied in this thesis has not already been accepted in substance for any degree, and is not being currently submitted in candidature for any other degree.

Signature

25 April 2011
Date
Abstract

The word biosecurity is not particularly well known amongst Australian households but in general, it refers to the protection of individual, communal, regional, state, territorial or national economies, environments and human health from the negative impacts of weeds, pests and disease. Although biosecurity is a relatively new term in an Australian context, Indigenous people recognise that the traditional custodians of the land have been caring for country for thousands of years. In contemporary times however, the intergenerational and collective sharing of local skills, expertise, knowledge and practice, that would otherwise identify and address potential threats to food, landscapes and well-being, have been replaced by modern science. While this has provided considerable benefits to food security, agricultural trade and community sustainability, the effective management of plant biosecurity, particularly in relation to commercial crops and domestic produce, has not been addressed by science in the same way. As such, there is a role for social science to examine the social, cultural, physical, political, economic and environmental composition of a community, the existing positions of power and decision making as well as the social connections that link differing sectors of the community. Of particular interest to this research, is to develop an understanding of the manner in which residents and visitors to a northern Australian agricultural community exchange information and take up new knowledge to bring about a change in attitudes, practice and behaviour.

One of the main aims of information provision, particularly by governance systems in Western societies, is to introduce current and accurate material using any number of media to better inform a broad or specific
population group about a range of issues. The downfall of this practice however, is the assumption that information provision equals new knowledge or more specifically, that the greater the volume of information, the greater the uptake of new knowledge and social change. In this community, the size, diversity and transience of the region’s population might suggest that people are more likely to rely on their social networks and personal relations to access trusted, reliable and meaningful sources of information over any other formal or informal method. This research therefore uses a qualitative methodological approach to examine the characteristics that connect and separate people across six sectors of the community and the ways in which shared ideas, stories, energy, experience, cultural beliefs and traditions influence the capacity and willingness of individuals and groups to participate in community activities, take up new knowledge and instigate change. Specific attention is given to the concept of social capital and the manner in which active citizenship and resource sharing are more often fragmented or isolated within specific sectors of the community, as opposed to being universally applied across a broader population. The findings and conclusions of this research therefore provide greater insights into effective community engagement practices within and across different sectors of the community, which in turn can be used to develop and implement policies, practices and further research on plant biosecurity that are inclusive, relevant and meaningful to the people who live in the region.
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1. Overview

1.1 Introduction

In Australia, biosecurity is a term used to describe the way in which the nation, its states and territories, regional centres and individual properties are protected from the unwanted entry, establishment and spread of harmful plants, animals, insects and diseases (AusBIOSEC, 2007). Agricultural industries and local, state and national government agencies recognise that biosecurity is a whole of community issue as all members across communities have the capacity to actively participate in the surveillance of local areas and reporting of biological anomalies to the appropriate agencies (DAFWA, 2005). However, past attempts to raise awareness of biosecurity issues across specified regions have primarily relied on the production of brochures, websites and road signs by government agencies, which by their own admission, have not been overly successful. Therefore, this research will look beyond traditional or existing methods of information provision to determine the most effective methods to raise biosecurity awareness and participation across different sectors of a specific locality.

The northern Australian community in which this study takes place is the main administrative centre for the local government authority, or Shire, which covers an area of 121,189 square kilometres. The community has a population of approximately 5,600 people, 26% of who identify as Indigenous (ABS, 2007a, 2007b). The population has high levels of transience due to tourism, seasonal work opportunities and the employment of people in short-term skilled and semi-skilled positions. Although the north western region of Australia has supported pastoralism since the 1880’s, this community was established in the early 1960’s to
service a growing irrigable agricultural industry. In 2010, some 11,700 hectares were used for irrigable agriculture in the region with a further 64,000 hectares nominated for further redevelopment. An agreement between local, state and national governments in 2008 resulted in a $220AUD million investment in infrastructure spending to enable 8,000 hectares of this allotment to be used for irrigable farmland by 2011. In 2008/09, the total value of irrigated farming in the community was estimated to be worth $101.5AUD million; $65.3AUD million of which included the imputed value of tropical forestry while $36.2AUD million was gained through horticulture, hybrid seed and field crop production (DAFWA, 2010). In 2008, pastoralism was estimated to be worth a further $23.6AUD million (KDC, 2009).

While there are many different biosecurity measures in place in and around this community to protect the agricultural industry from exotic pests and diseases, biological incursions still occur periodically. This research will therefore identify some of the common assumptions about the homogenous nature of communities and why the provision of generic information does not correspond with an increase in new knowledge or a change in attitudes, practice and behaviour. The social, cultural and economic diversity of this community means that information is likely to be interpreted differently from one sector of the population to another. As a result, it is expected that people are likely to gather, share and take up information important and of interest to them within the trusted, honest, respectful and reciprocal relations that exist in close, bonded social networks. Specific attention is therefore given to better understand how the diverse mix of human relations within this community has the capacity to generate new knowledge and motivate community participation, which in turn fosters change and transformation.
1.2 Significance
State and national government regulatory and agricultural agencies have granted this community ‘area freedom’ status because the district is free from the pests and diseases found in other growing areas of Australia. One of the benefits of area freedom is that it allows farmers within the region to export produce to lucrative state, national and international markets without the application of costly post-harvest treatments and stringent quarantine measures. However, to keep area freedom certification in this community, and therefore maintain the commercial viability of the local agricultural sector, farmers, industry groups and government agencies must adhere to strict international biosecurity standards and guidelines. The International Plant Protection Convention (IPPC) (2006), a subsidiary of the Food and Agriculture Organisation of the United Nations, provides a set of guidelines, which have been used and adapted by many countries to safeguard against an incursion of exotic pests and diseases. Here, area freedom status is granted if there are demonstrated and documented systems in place to establish and maintain pest free environments, to verify the continued attainment and maintenance of pest free environments as well as the introduction of identification, integrity and security measures for the import and export of food products (IPPC, 2006).

After three years of collaborative work in this community, farmers, government agencies, the Shire and agricultural industry groups produced a biosecurity plan in 2005 to reduce the risk of biological incursions occurring across the region (DAFWA, 2005). This plan expands the idea that biosecurity should adopt a whole of community approach rather than remain the responsibility of a specific few government agencies. While it was determined during these collaborations that levels
of scientific expertise are generally held within some government agencies, the manner in which biosecurity information and awareness is disseminated to other key areas of this community is relatively limited. The main aim of this research is to therefore understand the networks that exist in the region and examine the ways in which information is gathered and shared across different sectors of the community. This will enable different models of community engagement to be used to generate biosecurity interest, awareness and participation amongst different sectors of the community to reduce the threat of biological incursions in the region.

The biosecurity plan designed for this community recognises that in the past, conventional scientific and environmental approaches, primarily devised within government agencies, have been extremely good at understanding, identifying and responding to biological incursions, but have been lacking in raising community awareness around issues associated with biosecurity. One of the key actions in this regional biosecurity plan is to “Employ an appropriate person to develop a Community Education Awareness Programme” (DAFWA, 2005, p.6). Following this, a partnership between local biosecurity proponents, Charles Darwin University and the Cooperative Research Centre for National Plant Biosecurity was formed in order to fulfil certain aspects of these criteria. While government agencies and the agricultural industry are yet to measure current levels of community awareness or implement successful ongoing strategies to activate widespread community participation, it is expected that the results of this study will have significant implications for biosecurity policy development, practice and research and as such, reduce the risk of biological incursions occurring in this region. Although it is acknowledged that every community is unique, it is expected that the results of this study can also be adopted, modified
and used to address biosecurity issues in other agricultural regions both in Australia and overseas.

1.3 Statement of the problem

Produce grown in this region is currently free from many of the pests and diseases found in other Australian agricultural areas and as such, a significant incursion from a biological threat would have serious and detrimental implications for current and future agricultural industries. In past years, there have been a number of incursions in the region including reports of Mediterranean fruit fly or Medfly (*Ceratitis capitata*) (Broughton & de Lima, 2006) being found in the community in 1995, 1997, 2000, 2003 and 2007. The eradication of these introduced pests is not only expensive but can result in the loss of the region’s area freedom status, which may cost local farmers lucrative contracts with national and international export markets. Investigations into these incursions, and others, indicate that disease and insects (or their pupae, eggs or larvae) are introduced into the community by the human transportation of contaminated fruits, vegetables, honey or other plant products.

This study arises from the understanding that farmers and government agencies can not independently address the issue of biosecurity because the impact of biological incursions has broader implications for the wider community (AusBIOSEC, 2007). Unfortunately, the longer an incursion goes undetected or unreported, the greater the cost to local farmers and the region. Here, all community members can play a valuable role in knowing what to do and who to contact if an anomaly is identified in a specific area. Early detection and reporting of biological threats therefore has the potential to significantly reduce the impact of a biological incursion in the community. Although the regional biosecurity plan designed for this
community aims to educate and raise awareness about biosecurity, representatives from the local agricultural industry recognise that previous attempts by government agencies to engage tourists and local residents using brochures, road signage, websites and reports have proved to be somewhat ineffective (S1-07).

Research published by the Tropical Savannas Cooperative Research Centre recognises that many pastoralists across northern Australia develop a greater appreciation of land management issues and practices in an informal, participative learning environment (TSCRC, 1999). In other words, land holders believe their ability to learn and absorb information is more effective if it is delivered in a visual and practical manner, if the information is personalised and relevant to their specific circumstance or if local issues can be discussed with other pastoralists who have experienced similar issues. Likewise, a study of communication levels amongst pastoralists in the region recognises that even though a significant volume of information is available in the community on a range of different issues, it is provided in a manner that does not encourage active learning (Bolam, 2004). This is no different within the agricultural industry in which top-down, centralised and external government agencies produce and disseminate biosecurity information using brochures, newsletters, websites, reports and industry meetings. The common assumption here is that the information and format used to raise biosecurity awareness amongst government agencies and the agricultural industry is also suitable for use amongst the general public. As a result, biosecurity information is lost on tourists, tour operators, young people, Indigenous groups and other local residents because there is no personal relationship with the provider of that information or motivation to take up information that has limited relevance to key areas of their world.
1.4 Aim
The primary aim of this research is to better understand the means by which information is exchanged across a broad cross section of people in a northern Australian agricultural community. While top-down and centralised approaches to disseminate generic biosecurity information have been described as ineffectual, this study also aims to determine how the principles of community engagement can assist in the take up and adoption of new knowledge to bring about a change in biosecurity attitudes, practice and behaviour. The intention here is to understand exactly 'what it is' that motivates people from different sectors of this community to act. It is therefore expected that research findings and conclusions will provide government agencies, the Shire and the agricultural industry with the necessary tools to plan, develop and implement authentic and meaningful mechanisms to engage with all community members in order to share biosecurity information and exchange local knowledge. The net result of this study can thereby assist in the development and implementation of more effective biosecurity policies and practices to reduce the risk of biological incursions in the community while also providing new opportunities for further social science research in the field of biosecurity.

1.5 Research question
The northern Australian agricultural community in which this study takes place maintains a unique arrangement of social, cultural, physical, political, economic and environmental characteristics. While the findings of this research may be specific to this community, it is expected that the methodologies used to determine these results can be replicated in communities elsewhere. Similarly, it is expected that other communities may find similarity in the themes emerging from this study, which can then
support or refute further research in other fields of social science or biosecurity. The formation and composition of a research question must therefore not only support the realisation of research findings to satisfy the aims of this study and this community but also allow for a level of generalisability, which will enable research results to be transferrable and applicable to communities elsewhere. In accordance with these guiding principles, the research question for this study is 'How do communities engage with new knowledge to bring about change?'

1.6 Research design
This study adopts a qualitative research methodology to best answer the research question, 'How do communities engage with new knowledge to bring about change?' During a period of familiarisation, it was identified that the community supports a cross section of people from diverse social, cultural, political and economic backgrounds who can play an integral role in addressing biosecurity issues namely:

• Agricultural industry;
• Government agencies;
• Indigenous groups;
• Local residents;
• Tourism;
• Young people.

The unique characteristics of each community sector means that different data collection methods are required to determine both similar and distinctive ways in which people exchange information and gather new knowledge. Here, a bricoleur or "multi-perspectival approach" (Kincheloe, 2001, p.682) is used to ensure different research techniques are employed to effectively, accurately and appropriately record data.
from different community sectors to better understand a specific social phenomenon. As this research is considered to be a collective case study of an agricultural community in northern Australia, a nested approach is used to identify certain mechanisms in which information and new knowledge are exchanged within smaller, specific groups to develop a better theoretical and practical understanding of how information and new knowledge are transferred across the broader population.

As a case study, this research concentrates on the experiential knowledge of residents and visitors to the community and pays close attention to the social, cultural, physical, political, economic and environmental influences within the immediate and broader region. In doing so, this study examines the key factors that influence the exchange of information and participation in community activities as well as the theories that support these ideas. In other words, this study documents the ways in which certain sectors of the community engage with new knowledge and participate in local activities, the relationships that exist (and do not exist) between community sectors and the capacity of individuals and groups to work independently or together to achieve a common goal. This study therefore explores what connects people and the ways in which shared ideas, knowledge, experience, energy, cultural beliefs and traditions build the capacity of individuals, groups and the community to address local issues. In order to develop an understanding of how different sectors in the community exchange information and take up new knowledge to bring about change, three distinct aspects of this study occur simultaneously and separately namely community mapping and a literature review, data collection and data analysis.
1.6.1 Community mapping and literature review

An initial period of familiarisation enables a community mapping exercise to be undertaken to describe and identify the social, cultural, human, political, financial, built and natural resources in the region. From this, it is possible to gain a clear picture of the community's:

- People - socio-economic, demographical, cultural and ethnic characteristics;
- Location - geographic boundaries;
- Connectors - shared values, interests and motivating forces;
- Power relationships - communication patterns, formal and informal lines of authority and influence, stakeholder relationships and resource flows (CDC, 1997).

This mapping exercise is primarily undertaken using the ethnographic technique of participant observations, which includes observations, conversations and participation in community events and activities. Literature relating to human agency, social networks, community, social capital, identity, knowledge and learning and engagement is also reviewed to gain a clear contextual and theoretical framework for this study. The combination of a community mapping exercise and literature review then informs the direction and design of the data collection process of this study.

1.6.2 Data collection

The ethnographic techniques of participant observations, semi-structured interviews and a review of documents and artefacts are used to collect data over an 18 month period. Input from people living in and visiting the region provides an important section of the
data for this study and can therefore be expected to reflect a range of different models of information exchange and participation across six different sectors of the community. No more than 90 interviews are held with representatives across all six community sectors. Semi-structured interviews provide specific and detailed information about networks and effective learning techniques and form the main body of data for this study. Participant observations and a review of documents and artefacts give additional data and verify information provided during semi-structured interviews. Research participants also have an opportunity to withdraw from this study at any time or provide further information at a later date if required.

1.6.3 Data analysis
The third aspect of this study involves an analysis and synthesis of all raw data. Once the data is transferred into text using field notes and transcripts, a thematic analysis codes and categorises the data into similarly themed clusters. The data are then collapsed before computer software is used to create diagrams to provide a visual representation of data themes and assist in the further refinement of research material. A synthesis of data analyses then enables key research findings and conclusions to emerge.

1.7 Limitations of the study
The community in which this study takes place is located in the northern region of Australia and consists of a transient, non-Indigenous population and a high but stable Indigenous population. Indigenous people have lived on the land surrounding this community for some 50,000 years (Jacobs, 1991) and continue to maintain significant cultural, spiritual and
traditional ties to country (Mowaljarlai & Malnic, 2001). However, historical and contemporary ideals of colonialism have meant that European occupation, settlement and development have made Indigenous voices invisible. Similarly, Indigenous Australians are the most studied population group in the world (Prior, 2007) and are continually invited to participate in non-Indigenous research. As such, two marked limitations have been identified for this study.

The first of these limitations recognises that Indigenous people make up an important and distinct sector of this community with valuable insights into local histories, activities, networks, culture and land use practices that cannot be found in any other population group. As such, Indigenous participation in this study enhances expected results and findings although the researcher is mindful about again asking Indigenous people to contribute to non-Indigenous research. The second limitation relates to the age, ethnicity, gender, language, education and economic background of the researcher and what these characteristics represent to Indigenous people. In this community, the repercussions of colonialist attitudes, ideals and practices continue to impact on Indigenous health, education, employment, housing and access to traditional lands. This, along with an understanding of the historical treatment of Indigenous people by Anglo-European men across Australia, means that consideration must also be given to the appropriateness of conducting semi-structured interviews with older Indigenous people, and particularly older Indigenous women.

1.8 Chapter outlines
This thesis consists of five chapters, including this, the introduction. An overview of the literature review (Chapter Two), research methodologies
(Chapter Three), results and discussion (Chapter Four) and summary, synthesis, conclusions and implications (Chapter Five) are presented here.

1.8.1 Chapter Two: Review of the literature

A review of the literature in Chapter Two provides a broad, theoretical framework to answer the research question, ‘How do communities engage with new knowledge to bring about change?’ First, social theories relevant to this study are discussed followed by a review of research literature to substantiate the methods used to collect and analyse data. Theories on change and human agency are explained and demonstrate how people influence and introduce action into their immediate worlds without the constraints of fixed social structures. Theories on social networks, community and social capital then describe the importance of human relations and how the formation of trusting, honest, respectful and reciprocal relations supports active citizenship and resource sharing. Concepts of identity are also explained with particular attention given to how identity affects the capacity of an individual to attain and share knowledge and then take up and synthesise knowledge into learning. Theories on engagement and then community engagement examine the processes in which governance and community systems work collaboratively to address issues impacting most on the lives of individuals and communities.

1.8.2 Chapter Three: Methods and description of research site

Once a detailed review of the literature is complete, Chapter Three provides an overview of the epistemological and ontological assumptions as well as the research design and justification for this
study. Following this, a description of the research site is provided along with the specific and different characteristics of research participants, the methods used for data collection and analysis and the limitations encountered during this study. The period of familiarisation with the site is explained and how community mapping exercises enable the identification of six distinct community sectors while also informing the compilation of interview questions, selection of interview participants and arrangement of interview schedules. Chapter Three then describes the manner in which participant observations, semi-structured interviews and a review of documents and artefacts are used to collect data across all community sectors. Finally, an explanation is given on the methods used to analyse and synthesise the data, which enables key research findings and conclusions to emerge.

1.8.3 Chapter Four: Results and discussion

Chapter Four describes the three stages of data analysis used in this study. Stage one provides the results of a thematic analysis in which a large volume of data are tagged and grouped into similarly themed clusters of information. Details are also provided about the diversity of population groups residing in and visiting the community, the factors that motivate people to live in or visit the community and the length of time people choose to stay in the community. The thematic analysis also identifies existing links between people, groups and organisations in the community, the manner in which people access and transfer information, the factors that motivate people to participate in community activities as well as the individuals, groups and organisations considered to be influential in the community. At the conclusion of stage one, data are
condensed into nine similarly themed categories. To gain further meaning from these nine data categories, a second layer of analysis is required to condense and collapse the data into four research themes. Computer generated diagrams are used in stage three of the analysis to provide a visual representation of the data and offer opportunities to explore and refine the research themes further.

1.8.4 Chapter Five: Summary, Synthesis, Conclusions and Implications

Chapter Five provides a summary of all chapters contained in this study and then presents a synthesis of all data analyses and conclusions of the research findings. Here, a synthesis of the data provides clarity, meaning and new definitions to concepts of 'community', 'engagement', 'new knowledge' and 'change' to answer the research question, 'How do communities engage with new knowledge to bring about change?' A further synthesis of the data analyses then enables ten research findings to emerge. Conclusions can then be drawn from these findings, which relate to the relevance of identity and place in relation to community participation, the factors that motivate people to take up new knowledge and instigate change, the introduction of engagement practices that enhance the exchange of information between governance and community systems and the location of social capital within specific social networks as opposed to being universally shared across the community. The implications of these research conclusions are then presented for biosecurity policy development, practice and further research.
Chapter Two: Review of the Literature
2. Review of the Literature

2.1 Introduction

In developing a collaborative response to regional biosecurity issues, growers, the local Shire Council, government departments and peak agricultural groups in a northern Australian agricultural town identified the need for research to better understand the way in which information and new knowledge is shared amongst its residents. This identified need provided the catalyst for a study on how community engagement can assist in the adoption of biosecurity knowledge, which resulted in the formation of the research question 'How do communities engage with new knowledge to bring about change?' To answer this question, a review of the literature relating to social theory is first undertaken to provide a theoretical framework for this study. Chapter Two therefore provides a review of change and human agency, social networks, community, social capital, identity, knowledge and learning and engagement theory.

To begin, this chapter describes the concept of change with particular attention given to human agency. Here, the debate over the effecting nature of social structures, and their influence on an individual's capacity to change aspects of their immediate world, is discussed. Following this, an explanation of social networks, community and social capital provides an account of the dynamics that form around human interactions and relationships, the location of these relations and how they develop as well as the social benefits that result from such interactions. Understanding the connections people make in their communities is essential to determining the manner in which information is exchanged and how it impacts on the ability of people to make decisions about their immediate world and the
worlds around them. A review of the literature on identity then provides an overview of the factors that influence the social position and role of individuals in society, with particular attention given to social identity and place attachment. Concepts of knowledge and learning are then examined and provide an explanation of the processes used by people to transform data into wisdom through community participation and within their social networks. Following this, theories on engagement are discussed and reflect the key components of relationship building and information exchange between governance and community systems.

2.2 Change and human agency
Theories of change, or more specifically behavioural change, have emerged from different schools of thought since the 1950's, including psychology, health, education, business management and recreation and leisure. As a social scientist, Kurt Lewin (1951) first introduced a stepped model of change that requires:

- Unfreezing of prior learning - motivation to change habits, behaviours or identity;
- Changing what needs to be changed - moving to a new state or equilibrium;
- Refreezing to make the current state permanent.

Schein (1996) uses this model to discuss how learning and change originate from a dissatisfaction or frustration with information that disconfirms hopes and expectations. However, disconfirming information is not enough to instigate change because it can be easily ignored, dismissed as irrelevant or denied as being valid. Schein (1996) instead believes that an individual will be willing to enact change if the information they receive is connected to something they care about.
Prochaska and de Clemente (1986) are also influenced by Lewin’s (1951) earlier work and apply a five stepped process to behaviour change:

- Pre-contemplation - no intent to undertake change;
- Contemplation - no commitment to undertake change;
- Preparation - intention to change is supported by behaviour;
- Action - behaviour is modified;
- Maintenance - stabilisation and prevention of relapse.

Prochaska and de Clemente (1986) also recognise that movement through the five stages of change is cyclical, as opposed to linear or unitary, which means that individuals may experience progress but also relapse into previous patterns of behaviour. The five stages identified by Prochaska and de Clemente (1986) also suggest that change is only possible in the context of an enabling or supportive environment. Such a position argues that change is not a behaviour that appears in isolation but is instead supported or influenced by the social structures that surround it. Similar debates within the social sciences argue over the influence of social structures and human agency in determining human behaviour.

In this research, social structures refer to the fixed, interrelated and enduring aspects of the social landscape, which Weik (2006) describes as reoccurring patterns of social relations, social norms, social phenomenon and institutions that influence the actions and activities of individuals in society. According to Giddens (1984), social structures provide the rules with which to govern and regulate social life as well as the human and non-human resources that give individuals access to power. Conversely, agency refers to the capacity of the individual to act freely and make decisions about aspects of their immediate world, without the constraints
of macro social structures (Weik, 2006). Therefore, theorists continue to ask whether an individual's own actions, intentional or not, influence their destiny or whether humans are more simply creatures of habit that follow cultural and linguistic orders that are too large and too powerful to ignore (Bleiker, 2003).

According to Bransen and Cuypers (1998), any study of human activity would be impossible if it did not first consider people as thinking subjects who causally enact change on the world and, more importantly, have reasons for doing so. Bandura (2006, p.164) supports this argument and describes an agent as an individual who "influences intentionally one's functioning and life circumstances". However to do this, individuals participate in reflexive monitoring or self-referential behaviours to determine and understand the impact their actions have on their own world and the world of others (Giddens, 1984). Agency is therefore guided by rational thought as, according to Pols (1982), individuals consider and respect the position of themselves and others in the social milieu and also the context in which their actions and activities take place. As such, human agency is never autonomous from the social landscapes in which it exists as one is interconnected and reliant on the other. According to Bandura (1989, 1999, 2006), human agency is viewed as a dynamic interplay of personal, behavioural and environmental influences whereby an individual's interpretation of their behaviour informs and alters their environment, which in turn informs and alters their subsequent behaviours (Pajares, 2002).

2.2.1 Core elements of human agency

In recognising the interconnecting nature of human agency, Bandura (2006) argues the presence of four core properties if
human development, adaption and change are to occur. These four properties are:

- Intentionality;
- Forethought;
- Self-reactiveness;
- Self-reflectiveness.

Here, intentionality refers to the development of plans and strategies to achieve individual, collective and mutually dependent outcomes. Similarly, forethought denotes the setting of anticipated goals, which in turn guide and motivate individual and collective behaviours. Agency also involves self-reactiveness, which requires not only the ability of individuals to make choices and plan for action but also to construct an appropriate pathway to motivate and regulate the execution of such actions. Bandura's (2006) final core property is self-reflectiveness, whereby people re-examine their own functioning and reflect on their self-efficacy (explained further in 2.2.2), the soundness of their thoughts and actions, the meaning of their pursuits and the necessity to make adjustments to future plans and actions.

As well as presenting four core properties, Bandura (1989, 2006) identifies three primary modes of human agency, which he describes as individual, proxy and collective agency. Bandura (2006) believes that people no longer have direct control over the everyday conditions that impact on their lives and as such, have a very limited capacity to live autonomously and enact individual agency. Individuals must therefore rely on others to achieve their personal goals. Hence, proxy or socially mediated agency is used
by the individual to influence others who have access to resources, knowledge or the means to act on their behalf to secure the outcomes they desire. Bandura (2006) also believes that many of the outcomes people wish to achieve can only be attained by working interdependently with others. As such, collective agency requires the pooling of knowledge, skills and resources to shape their collective futures. While these properties and modes of human agency are significant, Bandura (1989, 1994, 2006) acknowledges that personal efficacy is also a key component of human change and development.

2.2.2 Self-efficacy

One of core mechanisms of human functioning and human agency is self-efficacy or an understanding of one’s capacity to organise and perform tasks at a certain level (Bandura, 1997; Irizarry, 2002; Pajares, 2002, Schunk, 2000; Zimmerman, 2000). The ability for self-reflectiveness therefore enables an individual to assess their skills, knowledge and abilities in relation to their actions and to alter their own thinking and behaviours as a result (Bandura, 1997, 2006). According to Irizarry (2002), self-efficacy regulates the way in which the individual perceives their own competencies, which in turn influences their ability and motivation to complete tasks and set achievable goals (Pajares & Schunk, 2001). For example, unless the individual believes their actions can produce the outcomes they desire, there is little incentive for them to act or persevere in the face of adversity. As a result, self-efficacy is likely to influence the choices the individual makes and actions they pursue because there is a tendency for people to select the activities they feel
confident in and avoid those in which they are not (Irizarry, 2002; Pajares, 2002).

2.2.3 Structuration

As described earlier in this section, human agency refers to the capacity of the individual to actively change the course of social events by causal intervention. One of the key aspects of agency and self-efficacy is the capacity for the individual to act reflexively or continuously monitor their own actions and character against the ongoing flow of social structures. For Giddens (1984, p.2), human functioning should not specifically focus on the actions of the individual change agent or the social structures found in the broader society, but the "social practices ordered across space and time". In other words, human action shapes the social structures in which humans live and in return, social structures help to organise, guide and regulate the behaviours and activities of its members (Bandura, 2006; King, 2004). This duality of structure, whereby social structures can only exist in, and through, the activities of human agents is referred to by Giddens (1984) as 'structuration'.

According to King (2004), the primary task of Giddens' (1984) structuration theory is to explain how human activity contributes to the reproduction of social institutions in society. Although Giddens (1984, 1998) acknowledges that structure includes social systems (reproduced practices) and social institutions (reproduced rules and resources), he also recognises that systems and institutions cannot exist independently from human activity. Instead, the visible patterning of social relations, together with the rules and resources
that individuals rely on, are produced and reproduced by social activity. While Giddens (1984, 1998) recognises the important role that agency plays in reproducing social structures, he also acknowledges that agency is central to instigating change and transformation in society.

Giddens (1984) recognises that an agent's knowledge of their society informs the specific actions they take; the actions of the agent reproduce social structures, which reinforce and maintain the dynamics of human action. These everyday actions and reproduced patterns of behaviour also provide a degree of predictability and trust, which ensures social stability. However, if this stability or trust is broken, the dynamics between human agency and social structures allows the individual to break away from normative actions to instigate a change in society. The ongoing “reflexive monitoring of actions” enables an agent to assess the effectiveness of their own actions and the actions of others in achieving their desired goals (Giddens, 1984, p.191). As such, the agent has the capacity to not only reproduce social structures but transform them as well.

2.3 Social networks

One of the central aims of social science is to identify and describe the relations and dynamics that exist in society. Social network theory is a recent methodological approach to social science that pays particular attention to uncovering the patterns of people's interactions. In its most rudimentary form, social network theory maps the flows, connections and relationships between 'actors', with dots representing the individual, and lines forming the relationships between them as demonstrated by figure
2.1. In doing so, social network theory not only provides an indicator of the actor's social capital, which is explained later in 2.5, but also how the lives of the individual are influenced by their ties to larger networks of social linkages (Borgatti & Cross, 2003; Emirbayer & Goodwin 1994; Freeman, 2006; Gretzel, 2001; Kadushin, 2004; Kavada, 2003; Serrat, 2009).

Figure 2.1: A rudimentary portrayal of the social network of one actor

2.3.1 Psychological versus social views on human activity

Traditional psychological studies on human activity concentrate on the personal attributes that influence the individual's behaviour in their social setting, such as age, gender, education or cultural background. Social network theory on the other hand, recognises the relationships that an actor develops within their social networks, either as an individual, group, organisation, community or society, and provides an explanation of their social outcomes (Borgatti &
Cross, 2003). Social network theory therefore pays particular attention "not to the individual, but the entity consisting of a collection of individuals and the linkages among them" (Wasserman & Faust cited in Gretzel, 2001, p.1). In other words, social network theory aims to map and measure the weak and strong relations amongst individuals to better understand what facilitates and impedes the information flows that bind and influence interactional units. More specifically, an analysis of social networks determines who knows who, who knows what, what information is shared and how information is shared (Serrat, 2009).

This shift away from traditional psychology-based analysis brings with it a change in theoretical concepts from monadic variables, where individual attributes are analysed, to dyadic variables, which focus on analysing the attributes and "binary relations among a set of actors" (Borgatti, 2006, p.4). The dyadic ties that link one actor to another form a field or system of interdependencies, which is more commonly known as a network. This gives social network theory a holistic or broad view that seeks explanations for human activity and outcomes not only from individual actors but also within their network environments. Such a structure may also include distant connections, unknown to the actor, but linked to them through a series of ties that may provide benefits and constraints, which the actor may exploit and manage (Borgatti, 2006).

2.3.2 Network ties

According to Scott (1999), the configuration of social network theory is particularly valuable in determining a network's influence and usefulness to its actors. For example, small networks with strong
ties can be less useful to its members in terms of sharing information than networks maintaining a number of weak connections with individuals outside the main social exchange. As explained in greater detail in 2.5.6 'Strong and weak ties in social capital', open networks with many weak ties are more likely to introduce new ideas and opportunities as opposed to closed networks that retain many strong ties, which are redundant to outside social systems. As such, a group of friends who only do things with each other already share the same knowledge and opportunities. A group of acquaintances with connections to a variety of social networks is more likely to have access to a diverse range of information sources and new knowledge, which can then be shared amongst a greater number of people than the information held within the strong ties of a single group. Here, individuals have the opportunity to act as brokers within their social networks by bridging two networks that are not already directly linked (Granovetter, 2005; Scott, 1999).

2.3.3 The complexity of social networks
Although social network theory advocates the use of qualitative and ethnographic tools to collect empirical and simulated data as described later in 3.5.3.2 Methods of data collection, a range of statistical, mathematical and quantitative models belonging to graph theory are typically used to determine social relations amongst local entities (Alam, 2005; Breiger, 2004; Freeman, 2006). The conflicting use of qualitative and quantitative methodologies in social network theory also calls into question the distinction between quantitative and qualitative approaches to data analysis (Breiger, 2004), which Burt (1992) otherwise refers to as relational and positional models. As a graph-based, theoretical procedure,
relational or statistical models of analysis specifically focus on identifying cliques, or clusters of densely connected network ties, in a non-hierarchical structure. Alternatively, positional or algebra-centred models of analysis are based on a matrix technique that identifies structurally equivalent actors (Breiger, 2004), or pairs of actors, with ties to the same third party. Proponents of both techniques agree that members of cliques or clusters should demonstrate strong commonalities in, for instance, attitude or behaviour. However, since relational cliques are based on direct ties amongst actors and positional clusters reflect a position of structural equivalence, the two models lead to different interpretations of interpersonal influence and similarity (Breiger, 2004; Mizruchi, 1994). While this can lead to some uncertainty about the validity of either technique, Emirbayer and Goodwin (1994, p.1446) recognise that social network analysis uses “abstruse terminology and state of the art mathematical sophistication”, which seems “to have prevented many outsiders” from applying either model to any number of data analysis and mapping exercises.

2.3.4 Criticism of social network theory

While the use of large mathematical formula makes aspects of social network theory cumbersome and complex, Borgatti (2006) puts forward another criticism in that it fails to accurately reflect the post-colonial and historical influences that impact on relationships within specific communities. Emirbayer and Goodwin (1994, p.1425) support this view and believe social network theory inadequately considers and conceptualises the role of culture and human agency in its analysis of social structures and “neglects altogether
the potential causal role of actors' beliefs, values and normative commitments". Instead, social network theory produces network "snapshots" of social structures that give insufficient attention to the historical mechanisms impacting and influencing existing human relations (Kavada, 2003, p.9). Social network theory is therefore criticised for its structural determinism, which focuses on the consequences of networks rather than its historical composition and treats social structures as static and unchanging entities (Borgatti, 2006; Kavada, 2003).

2.3.5 The relevance of social network theory to this research

While social network theory has provided some useful explanations of specific events and social occurrences, much of its focus rests within the structure of local networks and, according to Mizruchi (1994), gives limited recognition to the ability of the individual to act independently and make decisions without the influence of others. Although an advocate of social network theory, Borgatti (2006) believes social capital, as described later in 2.5, is much better placed to analyse social structures by using intuitive and flexible qualitative methodologies. As such, research initiatives that adopt an ethnographic approach are likely to benefit from practices that place greater attention on the role of the individual and measure the impact or influence their actions may have on a broader collective rather than the other way around. Research methodologies must therefore have the capacity to investigate and analyse the ways in which the individual actor can (and does) influence and enact change in a fluid and continuously changing community (Onyx, 2001). Although the research reported here is informed by the conceptual knowledge of social network theory, it
places greater emphasis on agency-based assumptions rather than the bindings of collective networks. This suggests that social capital theory, as well as aspects of theory underpinning community, is more useful in answering the research question for this study, 'How communities engage with new knowledge to bring about change?'

2.4 Community

While theories on community are central to this research, assigning a definitive meaning to the concept is challenging as the term is broadly used by individuals, organisations and institutions in a range of different contexts to describe places and people as well as activities and networks (Bryson & Mowbray, 2005; CDC, 1997; DSE, 2010; Hashagen, 2002; Hatcher, 2006; Ife, 2002; Kenny, 2006; Mistry, 2007; Muirhead, 2002; Onyx, 2001). Although there is considerable literature discussing community, much of the discourse comes from a varied spread of theoretical viewpoints including social, political, scientific, cultural, environmental, anthropological, historical and theological schools of thought (Howarth, 2001). While such a diversity of views may indicate a rise in interest in community, it also makes the meaning of community more contentious and problematic (Bryson & Mowbray, 2005; Henderson & Thomas, 2002; Howarth, 2001; Ife, 2002).

2.4.1 External pressures on community

One of the uncertainties surrounding the concept of community is the idea that a range of external influences such as globalisation, capitalism, individualisation, urbanisation, migration and new technologies has undermined existing forms of social organisation and rapidly altered the perception of how societies work (Brent,
2004; de Benoist 1994; Howarth, 2001; Stone & Hughes, 2002).

According to Brent (2004), Putnam (1995), Stone and Hughes (2002) and Warr (2005), the changing global society has weakened the position of community as any number of external forces now provide the benefits that were previously available to people through localised settings. Howarth (2001) on the other hand, believes (and for the same reason) that these external influences have instead provided a resurgence in community as it offers an important link to the social existence of individuals. For example, governments and government agencies rely on community to provide solutions to a growing number of societal issues (Howarth, 2001) through the use of community art, community policing, community health, community centres, community schools and community care. In doing so, societal structures bring forward ideas of collective, localised action to address critical social concerns.

Mowbray (2005) however, believes the motivation for placing the word community in front of any state funded and state directed activity speaks more about portraying a government or government agency in a favourable light rather than demonstrating an understanding or commitment to the true value or potential of community. For example, property developers commonly use the term community, as opposed to the concept of community, as a "warm and fuzzy" (Hooper, 2006, p1) marketing strategy to entice potential home owners to invest in an, as yet, un-built but "idealised village setting" (Ife, 2002, p.14) where residents engage in neighbourly conversations, families participate in communal barbecues and children play in safe, manicured and well equipped parks. For others however, community is not a
physical entity that can be designed, created or artificially manufactured by a bureaucracy or external body; it exists because of people (Cho, 2004; Kenny, 2006; Mowbray, 2005).

2.4.2 Concepts of community
In its most uncomplicated form, community refers to a group of people who share a common identity or interest, whether it be a geographic location, cultural background, occupation, sport, language, age, school or sexuality (de Beer and Sewanepoel, 1998; Henderson & Thomas, 2002; Kenny, 2006). While Hanchet (1979, p.7) defines community even more simplistically as "people in relationship with others", Cohen (1985) and Willmott (1989) consider a community to be a:

- Geographic location - community of place;
- Community of similar interest - community of practice;
- Community of affiliation or identity (such as an industry group or sporting club).

Community is however, much broader than a collection of people and reflects more the interactions and connectedness that occurs between individuals and groups, where people develop relations and form social networks based on their own interests, experiences and viewpoints (Howarth, 2001; Ife, 2002; Kenny, 2006). It is these interactions, whether they be spontaneous, planned or informal, that help to build a sense of belonging, value and acceptance by others (Wills, 2001). Community is therefore a significant factor in providing individuals with a sense of identity and "is an important aspect on how one views one's position in the world" (Ife, 2002, p. 80). McMillan and Chavis (1986) and later Blanchard and Markus
(2002) and Rovai (2002), recognise the presence of four important elements that enable the individual to feel close and supported in their community:

- Membership enables the individual to feel as though they belong to a particular group or maintain a sense of shared relatedness;
- Influence, or a sense of mattering, indicates a level of reciprocity in that members influence the activities of a group while the continued cohesiveness of the group relies on whether it can maintain influence over its members.
- Integration and the fulfilment of needs occurs when members feel as though their needs are being met by the resources within their group;
- Emotional connection requires a commitment and belief that members have shared, and will share, history, common places, time together and similar experiences.

2.4.3 Community fulfilment of local needs

One of the key features of community is that the individual can have their personal and/or collective needs met by local resources. Goulet (1985) identifies these specific needs as:

- Sustenance - food and water, shelter, health and protection;
- Self-esteem - values systems, self-worth and self-respect;
- Freedom from servitude - having the ability to make real choices about one's life.

Doyal and Gough (1984) expand on this to also include the need for people to participate in social and cultural activities. Following on from this, Muirhead (2002) suggests that our lives are either
enhanced or diminished by whether certain needs are met within four specific spheres as shown in figure 2.2.

![Figure 2.2: Muirhead's (2002) four spheres of need attainment](image)

In describing these spheres, Muirhead (2002) argues that needs are either met by one's self, one's family, a community or within the society in which the individual lives. Those unable to have their needs met through their own efforts, rely on family. Similarly, individuals and families who can not have their needs met from their immediate setting rely on their community. Society, as a last resort, provides the final safety net for individuals, families and communities unable to have their needs met in any other sphere (Muirhead, 2002). According to de Beer and Sewanepoel (1998), it is the attainment of these needs that is central to human fulfilment and living within a sustainable community.
2.4.4 Gemeinschaft and Gesellschaft

Although the interactions between people are recognised as a key element of communities, it is the level or scale of these connections that distinguish community from the broader notion of society. In his book Gemeinschaft und Gesellschaft, Ferdinand Tönnies (1887) describes the significant difference between meeting the needs of a neighbour as opposed to those of a stranger (de Benoist, 1994; Ife, 2002; Truzzi, 1971).

2.4.4.1 Gemeinschaft

Basing his theories on early tribal or national societies, Tönnies (1887) recognises that harmonious collaborations and cooperation are maintained due to a common sense of genetic and cultural identity. Gemeinschaft populations are small, self-contained and rely very little on external influences and as a result, avoid major conflicts as the individual lives within an accepted set of shared values, traditions and sense of destiny (de Benoist, 1994). Members know each other well and have limited distinction between the public and the private space as individuals are known as people rather than the roles they play (Ife, 2002). As a result, relations and interactions enable a population to support its members to address personal needs and communal goals (Kenny, 2006; Truzzi, 1971), which enable greater ownership and control over local issues and promotes a genuine sense of individual and collective empowerment (de Benoist, 1994; Ife, 2002).
2.4.4.2 Gesellschaft

As history progressed however, Tönnies recognises that population centres expand rapidly to become larger multi-ethnic and multi-cultural societies, which he describes “as being united by gesellschaft ties” (cited in de Benoist, 1994, p1). According to Tönnies (1887), gesellschaft populations are not united by any common set of values or historical identity as the exchange of goods and services is the principal purpose for social collaborations (Truzzi, 1971). Gesellschaft is therefore maintained through its members acting in their own self-interest and giving their primary attention to economic relations and the attainment of individual wealth rather than those of a communal nature. Unlike gemeinschaft, gesellschaft places greater emphasises on secondary relationships rather than familial or community ties with generally less individual loyalty to society. According to Tönnies, the diversity of cultural values, the lack of “family feeling” and the distinct division of labour disrupts the harmony of society and causes significant conflict over wealth and basic values (cited in de Benoist, 1994, p.2) as well as class, race and ethnic difference (Truzzi, 1971).

2.4.5 Defining community

Cho (2004) recognises that the line between gemeinschaft and gesellschaft is not as definitive as Tönnies (1887) describes, particularly as both spheres contain many of the characteristics of each other. This view is supported by Wilkinson (1991) in that community is expected to exist in any location as long as interactions between people are ongoing and supported by locally
oriented networks, organisations and structures. According to Wilkinson (1991), the two components most fundamental to community are location and social interaction. This means that gemeinschaft, as a community, exists within any location as long as there is a commonly identified place where the natural process of social interaction can occur, be it a village, residential neighbourhood, social group, sporting club or work place.

Cho (2004) takes Wilkinson's (1991) concept further, and the earlier works of Goulet (1985) and Doyal and Gough (1984), by focusing specifically on four variable human interactions that are particularly relevant to the existence of community (gemeinschaft) within a broader society (gesellschaft):

- Strong social ties;
- Participation in rituals and cultural celebrations;
- Perceptions of similarity, way of life or historical experience;
- Common belief in an idea system, a moral order, an institution or a group.

The viewpoints of Cho (2004), Doyal and Gough (1984), Goulet (1985), Muirhead (2002) and Wilkinson (1991) reinforce the concept that communities are organic structures that are fluid, continuously changing and aim to meet the needs of its members. Community also provides an ongoing point of reference for individuals to gauge shared meanings, values, social norms and activities while also developing relationships based on trust, respect, solidarity, security, membership, collective participation and reciprocity (Brough et al, 2006; Ife, 2002; Kenny, 2006; Parisi et al, 2002; Wenger, 1998). It is this
definition of community that provides the theoretical framework that underpins this research.

2.5 Social capital
Following on from Muirhead's (2002) four spheres of needs attainment presented earlier as figure 2.2, Parisi et al (2002) recognise that the effectiveness of a community to meet the needs of its members is central to its ability to maintain and enhance the wellbeing of its population. At the very core of community is its capacity to come together and act collectively to address any number of specific local issues. However, communities are not homogenous and can only address issues with the social resources it has available. These social resources are referred to as 'social capital' (Parisi et al, 2002; Putnam, 1993, 1995, 2000).

Like the concept of community, there are many different views of social capital (ABS, 2002; Carroll & Stanford, 2003; Daly, 2005; Harper, 2001; Sabatini, 2005; Schuller, 2001) although the OECD (2001a, p.41) refers to it as "networks, together with shared norms, values and understandings which facilitate cooperation within or among groups". While there is no definitive definition of social capital, there is a level of consensus amongst theorists that the essence of social capital is based on the social networks that exist and develop through mutual relations of trust, reciprocity and cooperation (ABS, 2002, 2004; Cuthill, 2003; Fukuyama, 1999; Henderson & Thomas, 2002; Productivity Commission, 2003; Putnam, 2000; Stone & Hughes, 2002). The existence of strong social connections therefore provides greater opportunities for individuals and communities to access, share, exchange and utilise local resources to achieve a varying number of specific, collective and mutually beneficial goals (Bregendahl & Flora, 2002; Fukuyama, 1999; Schuller, 2001). According to Stone and Hughes
the quality and quantity of a community's social capital has a direct impact on the community's capacity to implement and manage social change.

2.5.1 Social capital in a historical context

According to Portes (1998), the first theorists to be credited with describing the concepts of social capital were Emile Durkheim (1893) and Karl Marx (1894) in their writings about the positive consequences of group involvement and participation for individuals and communities. While Marx's (1894) theories evolve from an emergent class consciousness in which different sectors of society learn to identify and support those of a similar social circumstance, Durkheim's (1893) writings on social integration recognise that reciprocal exchanges between individuals are not based on a prior knowledge of one another but on an assumption that repayment on a previous investment would be received from the broader community in the way of honour, approval or status (Portes, 1998). A more recent account of social capital recognises the work of Pierre Bourdieu (1980, 1984, 1985), James Coleman (1988, 1990) and Robert Putnam (1993, 1995, 2000), who have drawn much attention and dialogue for their theoretical and empirical viewpoints since the 1980's. While other authors such as Burt (1997), Foley and Edwards (1997), Fukuyama (1995), Granovetter (1973), Jacobs (1961), Lin (2001), Narayan (1999), Portes (1998) and Woolcock (2001) have all made considerable contributions to the depth and richness of social capital thinking, Bourdieu, Coleman and Putnam are considered to be responsible for introducing social capital to present day discussions and debate.
2.5.1.1 Pierre Bourdieu

In his earlier analysis of class, Pierre Bourdieu (1980) identifies three key elements of 'capital', making a distinction between economic, cultural and social capital (Adam & Rončević 2003; Field, 2008; Harper, 2001; Portes, 1998; Sabatini, 2005; Siisiainen, 2000). In *The Forms of Capital*, Bourdieu (1986, p.248) describes social capital as:

...the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition.

Bourdieu's (1980) early analysis of social capital primarily focuses on the benefits that the individual attains as a result of their participation in groups and social networks (Portes, 1998). Central to Bourdieu's (1980) view of social capital is the concept of habitus, which Field (2008, p.16) describes as a "bridge between subjective agency and objective position". Here, habitus can be defined as a set of values and beliefs that are acquired at birth, through education and socialisation and as a response to a scheme of objective social conditions. The lasting impact of these beliefs provides the individual with subjective perceptions, thoughts and actions of the world and signals their position within specific social structures (Field, 2008). Bourdieu (1984) argues from a neo-Marxist viewpoint to explain how habitus produces and
reproduces unequal access to social, cultural and economic capital, which replicates a disparity of power relations, legitimises dominant class structures and maintains the stratification of social systems (Harper, 2001). In other words, Bourdieu's theory on social stratification acknowledges that an individual's social position in a class-based society is determined by the volume, composition and access to different forms of capital as well as the conversion of one form of capital to another (Adam & Rončević 2003). However, while Bourdieu's view of habitus entails the reproduction of social positions, it also stimulates mobilisation and social change (Field, 2008).

2.5.1.2 James Coleman

The idea that social capital brings about rational action (or decisions that suit one's own purposes) and social change is a concept taken up by James Coleman (1990, p.302), who suggests that:

Social capital is defined by its function, it is not a single entity, but a variety of different entities having characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure.

While Bourdieu (1980) uses social capital theory to denote ways in which elite groups utilise contacts to reproduce power and privilege (Field, 2008), Coleman (1988) was the first to subject concepts of social capital to empirical scrutiny by developing and applying theoretical frameworks to differing
research situations (Baron, Field & Schuller, 2000; Harper, 2001). In doing so, Coleman (1990) determines that individuals, regardless of social, cultural or economic position, benefit from participating in social relations that are governed by high levels of reciprocity, trust and shared values, which in turn, create opportunities to share information and establish social norms (Field, 2008). Coleman (1990) believes that social capital can take three forms in that:

- Obligations and expectations depend on the trustworthiness of a social environment;
- Action is dependent on the capacity of information to flow through social structures;
- Social norms are accompanied by effective and agreed upon sanctions (Harper, 2001).

In presenting these three forms, Coleman (1988, 1990) is able to demonstrate tangible ways in which social resources are able to counterbalance low levels of human, economic and cultural capital and interact with other aspects of social structures (Baron, Field & Schuller, 2000). Coleman (1990, p.302) also recognises that, like other forms of capital, "social capital was productive, making possible the achievement of certain ends that would not be attainable in its absence". Adam and Rončević (2003) consider this variance to be significant as such a suggestion shifts the definition of social capital from the attainment of ego-centric or individual outcomes as espoused by Bourdieu, to more socio-centric outcomes that benefit groups, organisations and societies.
2.5.1.3 Robert Putnam

Drawing on Coleman's account of the productive nature of social capital, Robert Putnam's (1993, 1995, 2000) theoretical and empirical attention focuses on the role of civic communities at a mezzo and macro level to determine the regional and national contexts of democracy and developmental performance (Adam & Rončević 2003). In his comparative study of institutional performances in northern and southern Italy, Putnam (1993) determines that the economic, political and functional prosperity of regional governments are shaped by the public activity of its citizens (Adam & Rončević 2003; Baron, Field & Schuller, 2000; Harper, 2001; Siisiäinen, 2000). According to Putnam's (1993) research, the prospering areas in northern Italy maintain high levels of public activity, which "creates an atmosphere of mutual cooperation, vital social networks, equal political relations and the tradition of citizen participation" (Siisiäinen, 2000, p.3). At the conclusion of this study, Putnam (1993, p.167) emphasises that:

Social capital here refers to features of social organisation, such as trust, norms and networks, that can improve the efficiency of society by facilitating coordinated actions.

Despite a rise in levels of education, which is considered to increase social connectedness (Baron, Field & Schuller, 2000), a further study by Putnam (1995) in the United States determines that reduced levels of civic engagement correlates with a secular decline in social capital. In his book,
Bowling Alone, Putnam (2000) argues that receding community membership to, and participation in, politics, community and sporting groups, religious organisations, professional associations, voluntary activities and informal social events reduces access to social interactions (Harper, 2001). According to Putnam (2000), such a decline in social activity weakens elements of individual and organisational trust, social norms, localised networks and therefore the social, economic and political prosperity of a society.

Although Shullo (2008, p.2) believes there is an increased number of people “flying solo”, Putnam (2000) recognises that US citizens have also increased their affiliations with mass membership organisations that offer ideals or symbols, such as veteran associations or mass congregational churches, that purposely address the immediate needs of the individual but do not accomplish anything of substance for the greater good (Shullo, 2008). Although Putnam (1995, 2000) provides minimal solutions to this phenomenon, he does believe that societies in general will benefit, in the way of active citizenship and trusting relationships, from the people-to-people bonds that form through increased membership and participation in voluntary and locally-based groups and gatherings (Shullo, 2008).

The core of social capital theory is that social networks have value... social contacts affect the productivity of individuals and groups... and the norms of reciprocity and trustworthiness arise from them (Putnam, 2000, p.18-19).
According to Putnam (1995, 2000), social networks based on relations of reciprocity and trust, and the norms that arise from these networks, are central to social capital and act more as a precondition to social, political and economic prosperity than as an adjunct or consequence of community wellbeing (Field, 2008; Shullo, 2008). Connecting with others and working together not only brings social, cultural, political and economic benefits to individuals but it also provides a greater good to society.

2.5.2 Key themes of social capital
While Bourdieu, Coleman, Putnam and others provide a theoretical base for social capital, a review of the literature by Onyx and Bullen (2000) identifies five key themes that consistently appear as important factors in defining and describing social capital. In their summary, Onyx and Bullen (2000) determine that social capital:

- Is focused on the networks that evolve in varying levels of density among individuals and groups;
- Is based on reciprocity where support, energy or service, offered in these networks, is returned in the long or short term;
- Requires trust in that individuals or groups take socially contextualised risks because they are confident in the relations they have with others and the manner in which they believe others will respond to certain situations;
- Requires unwritten and shared norms and values, which direct behaviour and interactions between individuals and groups;
- Requires local citizens to actively and willingly participate and engage in the community, which in turn, determines personal and collective efficacy.
Although the presence of these five themes are important in determining social capital, they also exist at varying levels of intensity and at different hierarchies of society, whether it be family networks, sporting groups, work environments, community based structures and even between nation states (ABS, 2004; Onyx & Bullen, 2000; Productivity Commission, 2003; Stone & Hughes, 2002). While theorists believe that high levels of social capital provide positive social, cultural, political and economic outcomes that contribute to the wellbeing of communities (ABS, 2000, 2002, 2004; Bregendahl & Flora, 2002; Fukuyama, 1999; Onyx & Bullen, 2000; Putnam, 1995; Schuller, 2001; Stone & Hughes, 2002; Woolcock & Narayan, 2000), others are more critical of certain aspects of the concept. For example, Evans (1997), Levi (1996) and Spronk (2001) recognise that concepts of social capital do not pay particular attention to the role of state or government agencies in building social capital and bringing about social change. According to Evans, (1997), social capital in some circumstances is reliant on the reciprocal relationships that exist between the state and the community in that the participation of people in local governance structures determines the human, social, political, financial, built, natural and cultural well-being of a community. This highlights the important contributions that a wide range of social resources, or community capital, makes to the wellbeing of population groups (Cuthill, 2003; Evan, 1997; Levi, 1996; Spronk, 2001).

### 2.5.3 Community capital

To effectively contribute to the wellbeing of a specific community, social capital must rely on and provide input to other local resources, including human capital, political capital, financial
capital, built capital, natural capital and cultural capital (ABS, 2004; Cuthill, 2003; Flora & Flora, 2008; Flora, Flora & Fey, 2004; Grootaert, 1998; Jacobs, 2007a). Flora, Flora and Fey (2004) refer to this collection of social resources as community capital, which is presented as figure 2.3. Flora and Flora (2008) go on to state that the most successful communities, in terms of sustainability and economic development, pay particular attention to all seven types of capital and that an investment in one particular area could build assets in others or detract from them.

![Figure 2.3: Intersections of community capital (source: Flora & Flora, 2008)](image)

This view is supported by Burkhart-Kreisel (2004) who suggests that the seven aspects of community capital resemble the layers of an onion, shown as figure 2.4, with each being dependent on the next to be sustainable. It is the composition, variance and relationship between the differing aspects of community capital that makes each community unique (Burkhart-Kreisel, 2004; Jacobs, 2007a).
2.5.3.1 Human capital

Human capital, in this context, refers to the assets, resources and attributes that individuals contribute to a community. Education and training as well as physical and mental health are important factors in generating and sustaining an income while the evolution and capacity of leaders to focus on local assets and be inclusive, proactive and participatory are also considered to
be central in shaping the future of a community (Burkhart-Kreisel, 2004; Falk, 2001; Flora & Flora, 2008; Hart, 2006).

2.5.3.2 Social capital
As mentioned earlier in 2.5 and 2.5.2, social capital refers to the collective benefits that arise from the development of trusting and reciprocal networks and participation in group activities in an environment of shared values and norms. The World Bank (1999) describes social capital as:

... 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, which underpin a society - it is the glue that holds them together.

2.5.3.3 Political capital
According to Burkhart-Kreisel (2004), political capital refers to the capacity of individuals and groups to influence the distribution of resources and determine where and when such resources will be located. As a result, Casey (2008) believes that political capital is the most authoritative of all aspects of community capital because of its association with power and the ability of individuals and groups to influence and reinforce standards, rules and regulations.

2.5.3.4 Financial capital
Flora and Flora (2008) acknowledge that financial capital relates to those resources that are available to invest in and support community capacity building, business development and civic and social entrepreneurship while also accumulating wealth for
future community development. Forms of financial capital include land, capital goods and financial instruments such as cash, stocks, bonds and access to credit (Burkhart-Kreisel, 2004).

2.5.3.5 Built capital
Build capital refers to the infrastructure and permanent facilities that support a community such as roads, public and private buildings, airports, industrial sites, water and sewage. According to Hart (2006), built capital also incorporates food, clothing, cars, internet access and other forms of telecommunications.

2.5.3.6 Natural capital
Hart (2006) and Flora and Flora (2008) identify that there are three specific aspects to natural capital, which include natural resources (minerals, water, land and timber), ecosystems and natural beauty. The strength of natural capital depends on the availability of raw materials, the capacity for systems to support life or the aesthetics that contribute to a quality of life.

2.5.3.7 Cultural capital
According to Flora and Flora (2008, p.1), cultural capital "reflects the way people know the world and how to act within it" and includes symbols, language, heritage, ethnicity, festivals, events, celebrations and geographic location. Cultural capital also considers the strength of collaborations within and across race, gender, ethnicity and generations and can determine who is heard and listened to in a community, who has influence and how aspects of creativity, innovation and power evolve and are encouraged. Jacobs (2007b) also recognises that cultural
capital provides communities with its distinct character, which in turn influences the identity of its people and the way they relate to others.

2.5.4 Social capital and human capital
Although the connection between each of the seven forms of community capital is important, particular attention is given to the relationship between human capital and social capital; firstly because both resources are specifically focused on people (Bregendahl & Flora, 2002; Cuthill, 2003) and secondly, because they result from, at varying degrees, the coming together of all social resources (Grootaert, 1998). While social capital reflects the mutual relationships between individuals, the social networks they form and the collective action that is achieved, human capital is more focused on the behaviour and capacity of the individual (Falk, 2001; Schuller, 2001). According to Coleman (1988), the primary distinction between social and human capital is their respective impact on the broader public good. For example, any gains achieved through social capital are more likely to benefit all members of a particular group, whereas an investment in human capital typically focuses on the individual (Falk, 2001; Giorgas, 2000). Even so, social capital and human capital are still distinctly linked and interdependent on one another. For example, human capital describes the skills, knowledge, education and competences of people, which in turn contributes to the broader social development of local communities (Bregendahl & Flora, 2002; Coleman, 1988; Cuthill, 2003; Schuller, 2001). Similarly, the capacity to develop and share the skills, assets and resources of the
individual can only occur in an environment that is conducive to social and community engagement (Cuthill, 2003; Schuller, 2001).

2.5.5 Social capital and cultural capital
Another important component of community capital is the connection between social capital and cultural capital. Although closely linked to human capital (Bourdieu, 1986; Coleman, 1988), cultural capital is central in the development of social capital, especially in communities with local Indigenous histories and populations (Bregendahl & Flora, 2002; Brough et al, 2006; Cotter et al, 2006; Fuller, Howard & Buultjens, 2005). While Bourdieu (1986) recognises that cultural capital evolves from the habitus or social origins of the individual, Indigenous practitioners and theorists believe such concepts extend beyond the immediate family circle and acknowledge that lifestyles, traditions, rituals, laws, languages, beliefs and values are shaped by an individual’s sense of place and relationship to country, which is explored further in 2.6.3.4, ‘Place identity and Indigenous people’ (Brough, et al, 2006; Carter et al, 2004; Bregendahl & Flora, 2002; Jacob, 1991; Moore & Davis, 2001; Mowaljarlai & Malnic, 2001; Walsh & Mitchell, 2002).

2.5.6 Strong and weak ties in social capital
As discussed earlier in this chapter, one of the key components of social capital is the presence and strength of reciprocal and trusting relations, or social networks, between people in a specific population group. In his initial research, Granovetter (1973) suggests that individuals are more likely to gain employment through their weak ties, rather than their strong, close ties, because the nature of the relationship bridges together different networks that would not
otherwise be connected. Alternately, strong ties are typically interconnected, overlapping and form dense and closed relationships, which reinforce group cohesion within an agreed set of norms and values (Foster, Meinhard & Berger, 2003). The central aspect of the strong and weak tie discussion as first proposed by Granovetter (1973) recognises that acquaintances, or weak ties, are less likely to be socially involved with one another as opposed to close friends who develop strong ties or bonds.

According to Granovetter (1973, p.1362), the strength of a tie can be defined by a “combination of the amount of time, the emotional intensity, the intimacy (mutual confiding) and the reciprocal services that characterise the tie”. Ties can therefore be considered to be strong, weak or absent; the stronger the tie between individuals, the greater the overlap in their friendship and presence of relational lines (Carolan & Natriello, 2005; Maddrell, 2008). This overlap also influences the density of connections amongst individuals. Because any one person can only cognitively and emotionally maintain a certain number of social ties, larger groups of people maintain lower density relationships than smaller groups (Maddrell, 2008). As a result, those who are considered to be acquaintances maintain low density ties while a group of friends foster relations that are densely knit (Carolan & Natriello, 2005). Burt (1992) expands on Granovetter’s (1973, 1983) initial theory to also include network holes, which exist in the absence of network ties. Although bridging ties are considered to be weak, Burt (1992) recognises that people with multiple connections that bridge across various networks have more power and influence than those who are not connected because of their extensive links to social
resources (Granovetter, 2005; Maddrell, 2008). As such, communities comprise of clusters of strong tie relationships, which are bridged by weak tie acquaintances (Maddrell, 2008).

2.5.7 Bonding, bridging and linking social capital

One of the key factors required in establishing or identifying the presence of social capital in a community is the type, strength and quality of relationships that exist amongst its local population. Following on from Granovetter's (1973) early work, which focused on the strength of weak ties in social networks, Putnam (2000), Narayan (1999) and Woolcock (2001) distinguish between three different dimensions of social capital, which include bonding, bridging and linking social capital.

2.5.7.1 Bonding social capital

Bonding social capital is typified by close, closed and densely knit relations that develop within homogenous groups of people who share and maintain common interests, situations or characteristic (Falk & Surata, 2007). Loyalty within bonded groups is highly valued with attention primarily given to satisfying the needs and interests of its members. As a result, relations are formed based on trust and reciprocity, which strengthen ties amongst group members and provide the social and physiological supports required in day to day activities (Foster, Meinhard & Berger, 2003; Frank, 2003; Wilson & Mayer, 2006; Woolcock, 2001).
2.5.7.2 Bridging social capital
Bridging social capital on the other hand, is typified by weaker ties amongst a more sparse, heterogeneous group of people from varied social networks. The diversity of these relations cuts across age, cultural backgrounds, occupation or socio-economic position, which enables an overlapping of group membership. This overlap allows individuals to gain access to a wide range of resources and information inside and outside a community (ABS, 2004; Brough et al, 2006; Productivity Commission, 2003; Stone & Hughes, 2002; Warr, 2005).

2.5.7.3 Linking social capital
The third dimension, as described by Woolcock and Narayan (2000), is linking social capital and refers to the development of relations with people in positions of power or organisations that are influential. Linking social capital enables individuals or sectors of the community to leverage resources, ideas and information as well as engage in processes of governance and decision-making from beyond the community’s immediate perimeter (ABS, 2002; Stone & Hughes, 2001; Woolcock 2000).

2.5.7.4 The impact of bonding, bridging and linking social capital on communities
There is debate about the significance of bonding, bridging and linking social capital and the impact each dimension has on the capacity of a community to manage change. For example, findings presented by Onyx and Bullen (2000) and
Stone and Hughes (2001) recognise that people living in rural and remote Australian communities are more likely to develop close, informal, bonded ties than their metropolitan counterparts. However, communities that maintain a disproportionately high number of internally bonded ties, formed around trust and cooperative norms, can also direct low levels of trust and cooperation to those outside their specific population group. Strong ties also promote a level of social conformity, which in turn, limits the prospect of innovation and social change (Cuthill, 2003; Foster, Meinhard & Berger, 2003; Stone & Hughes, 2001). As a result, communities can pursue narrow interests that readily discriminate against people from outside a specific group or new practices and ideas that bring about social change (ABS, 2002, Burt 2002).

As described previously in this chapter, Putnam (1993, 1995, 2000) argues that high levels of mutual, public activity results in the increased sharing of trust, norms and networks, which in turn provide a range of social, economic and political benefits to society. In doing so, Putnam’s research in both Italy (1993) and the United States (1995), suggests that the benefits of social capital are almost universal in nature. However as Lee and Newby (1983) explain, the fact that people live in close proximity to one another does not necessarily mean there exists a pattern of close, mutual or cooperative interaction between neighbours but instead, people form strong bonded relations with others who share a common interest (Burt, 2002; Portes, 1998; Woolcock &
Narayan, 2000). Such a dynamic therefore means that information (Burt, 2002) and social resources (Bourdieu, 1986; Portes, 1998) are more likely to be retained within the close, bonded networks of like-minded people rather than be universally shared across a community. Therefore in an ideal setting, a balance should exist between all aspects of social capital otherwise social fragmentation may occur (ABS, 2002; Foster, Meinhard & Berger, 2003; Onyx & Bullen, 2000; Stone & Hughes, 2001). The difficulty being however is to measure the level of social capital in any specific community while also considering the complex nature of social capital as a concept.

2.5.8 Complexity and measurement of social capital
According to Claridge (2004), Krishna and Uphoff (2002) and Narayan and Cassidy (2001), the many efforts to define, measure and conceptualise social capital have resulted in over-simplification, which can in turn understate the very complexity of social capital. Hean, Cowley and Forbes (2003) also believe that the vast accumulation of literature on social capital has led to an ambiguous understanding of the concept while inappropriate measurement techniques have raised debate over whether the concept is relevant or appropriate at all (Stone 2001). For McHugh and Prasetyo (2002, p. 1),

 the proliferation of competing definitions, analytical methods and applications associated with the term is perhaps only dwarfed in volume by the literature critical of its theoretical ambiguity, ambitious conceptual scope and practical over-versatility.
Figure 2.5 provides an example of the different processes and relationships operating between the determinants of social capital, the structure or elements of social capital and the consequences or manifestations of social capital.

![Diagram of links between determinants, structural elements and consequences of social capital](source: Claridge, 2004)

While it is acknowledged that a wide range of factors influence the development of social capital as indicated previously in 2.5.2 Key themes of social capital, Claridge (2004) believes that limited attention has been given to the causal factors and functional relationships that exist within communities and more particularly, the multi-level and multi-dimensional determinants of social capital. Here, Claridge (2004) believes that attempts to conceptualise and measure social capital should not only focus on particular social structures but also the factors or determinants that lead to the formation of those structures, such as the dynamic relationships that constantly evolve on both a spatial and temporal scale. According to Claridge (2004), all social interactions within a community have
wide ranging and unpredictable outcomes to the structure and consequences of social capital in that community. While social interactions can have both positive and negative consequences as shown on the continuum in figure 2.5, other factors such as time, space, information and chance also impact on the complexity of relationships and therefore the complexity of social capital. As such, Claridge (2004) believes it to be particularly important to identify the causal factors and context of these relationships as these are most critical in determining the structural elements and consequences or manifestations of social capital.

While there are differing views and complexities of social capital as described here and earlier in this chapter, the ability to measure its presence in communities remains similarly problematic (Grootaert, 1998; Harper, 2001; Sabatini, 2005; Stone & Hughes, 2002). For Kilpatrick and Abbott-Chapman (2005), the capacity to measure social capital, as a multi-dimensional resource that is the property of the community, is based on the aggregated results of the individual while Harper (2001) suggests the collection and analysis of population data, attitudinal data and participation data through the use of qualitative and quantitative research methodologies (Grootaert et al, 2004; Hughes, 2001; Onyx & Bullen, 2000; Putnam, 1993, 1995, 2000). Krishna and Shrader (2002) believe that any instrument used to measure social capital must be flexible enough to address contextual issues, such as cultural sensitivities, but also tight enough to provide a conceptual framework that unifies different dimensions of social capital. Grootaert and van Bastelaer (2002) agree and suggest community profiles, household surveys and organisational reviews to measure the social networks and
localised norms of trust and reciprocity to better understand the aggregate potential for community action (Krishna & Shrader, 2002). The aim of social capital assessment tools therefore is to determine levels of participation, processes of participation and perceptions of participation in order to measure the strength of relations and capacity for change amongst individuals, community and society.

While social scientists use varying assessment tools to determine civic engagement in different communities, Grootaert et al (2004) measure six social structures to determine levels of social capital:

- Groups and networks – the level of participation in social groups and informal networks and the reciprocal nature, density and diversity of group membership. Survey questions can measure the role individuals play within groups, the extent of democratic functioning and connections that individuals and groups have to other collectives;
- Trust and solidarity – the extent of trust afforded by individuals and households to neighbours, institutions, service providers and strangers;
- Collective action and cooperation – the capacity of individuals to work with others on joint projects and/or during times of crisis as well as the consequences of violating community expectations regarding collective participation;
- Information and communication – the ways and means by which individuals and households receive information about market conditions and public services, social networks outside the community as well as the level of access to communication infrastructure;
• Social cohesion and inclusion – the nature and extent of division and difference in the community, the mechanisms by which difference is managed and the groups that are included and excluded from key public forums, decision making and collective action;

• Empowerment and political action – the extent to which individuals have control over institutions and the processes affecting their wellbeing as well as levels of happiness, personal efficacy and the capacity to influence local events and broader political outcomes.

The measure of social capital in empirical studies will vary from one social setting to another as a result of social context, data availability, study objectives and the researcher's definition of social capital (Kilpatrick & Abbott-Chapman, 2005; Krishna & Shrader, 2002; Onyx & Bullen, 2000; Productivity Commission, 2003). However, the consistent use of assessment tools such as community profiles, household surveys and organisational reviews can determine individual and group membership and participation in community activities, the subjective perceptions of localised trust and norms, the manner in which social capital operates and functions as well as the outcomes and consequences of social capital at an individual, community or societal level (Grootaert et al, 2004). For Onyx and Bullen (2000), the use of consistent assessment tools is particularly useful in the measurement of social capital in rural communities.
2.5.9 Social capital in rural communities

According to Rogers (2005), rural communities understand the importance of human relations to effectively mobilise skills and resources to create and maintain facilities and essential services, primarily through activities such as fundraising and volunteerism. Basile and Cecchi (2005) acknowledge that such an investment in the public good is strictly linked to the actions of people living within that rural community; actions that can not or would not otherwise be provided by the state or outside entities. In Australia however, privatisation, devolution of services and globalising forces have meant that economic and political power are moving away from rural communities to be centralised within state, national and international institutions (Alston, 2000). Such a move coincides with a decline in population, as well as differing levels of access to education, health and other community services (Talbot & Walker, 2007); which means that rural communities are becoming more reliant on their own local resources to have their local needs met.

In their study of bonding and bridging social capital, Leonard and Onyx (2003) found that communities in Australia, isolated by geography and social standing, have fewer opportunities for social or economic development than those with links to other communities. Their research also suggests that in order to “get ahead”, rural communities need to find additional ways to form bridging ties or linkages with other communities to access and exchange resources, as opposed to remaining dependent on the bonding ties within their own internal networks (Leonard & Onyx, 2003, p. 201). Leonard and Onyx (2003) identify professionals who are trusted in the community (because of their role or position) to
be significant in developing bridging links with other external resources, while Macadam et al (2004) believe that such tasks are likely to be taken up through local leadership. Although the professional standing and leadership of individuals can play a strategic role in developing connections with outside resources, these two characteristics are not enough. Rather than be reliant on a role or position in a community, Leonard and Onyx (2003) and Macadam et al (2004) believe that the capacity to develop bridging or linking ties between communities is dependent on a demonstrated commitment to the values of community. As explained earlier in 2.4.5, 'Defining community', community forms in any location where social interactions exist and relations develop through the mutual exchange of trust, respect, membership, reciprocity and collective participation to meet the needs of its citizens. A symbol of the commitment a professional or leader may have to these values is demonstrated by their ability and willingness to voluntarily contribute to the activities, events and organisations of a community or invest otherwise in the public good (Leonard & Onyx, 2003; Macadam et al, 2004).

Another Australian study by Onyx and Bullen (2000) found that rural communities maintain high levels of social capital compared to urban environments, particularly when measuring social dimensions of safety and trust, neighbourhood connections and local participation although less likely to embrace social change and tolerance of diversity. As a result, Onyx and Bullen (2000) suggest that rural communities have the capacity to generate strong bonding social capital as indicated by high levels of mutual support for local events and participation in community life. The flip-side to
this however, is that rural communities may also display limited recognition and support for minority groups from inside the community or be open to people from outside. This view is shared by Coleman (1988), Portes (1998) and Woolcock (1998) who believe that social capital is more likely to form in closed communities where informal norms and sanctions are strong. As a result, Indigenous people living as a minority in rural and urban Australian communities attach a different meaning to social capital.

2.5.10 Social capital and Indigenous people
As explained earlier in this chapter, social capital refers to networks of social relations, which are characterised by norms of trust and reciprocity that lead to mutually beneficial outcomes for a group, community or society (Bourdieu, 1986; Coleman, 1988; Putnam, 1993). While a universal definition is not forthcoming, there has been limited discussion in any forum about social capital and its impact on Indigenous people living in a non-Indigenous context. In Australia, social capital and the networks of civic membership and participation primarily refer to a “white society” (Hunter, 2004, p.5). This means that the social networks and social norms that define social capital do not take into consideration cultural difference, which in turn risks viewing and measuring social capital from an ethnocentric perspective (Brough et al, 2006; Christie & Greatorex, 2004). For example, unemployment is viewed to be in conflict with contemporary Australian norms although for some Indigenous people, low levels of participation in the workforce can facilitate greater connectedness to traditional activities such as hunting, fishing, ceremonies, family duties, caring for country and sharing knowledge with other generations, which in turn increases social
capital in Indigenous communities (Christie & Greatorex, 2004; Hunter, 2000).

While much of the literature focuses on the positive outcomes associated with high levels of social capital, there has been little discussion about the negative impacts that may affect some sectors of the community (Hunter, 2004). As described previously in 2.5.9, 'Social capital in rural communities', populations that maintain high bonded social networks also have the propensity to maintain lower levels of tolerance toward diversity and social change (Onyx & Bullen, 2000; Leonard & Onyx, 2003). While social capital encourages and enables the inclusion and participation of some sectors of the community, it can also exclude and segregate others through inadequate social participation, a lack of social integration and an uneven distribution of power (Brough et al, 2006; Hunter, 2004). A study undertaken by Brough et al (2006, p.7) acknowledges that in some communities, or social networks within those communities, racism and discrimination are seen to be the norm whereby it is "safe to speak in terms of racial stereotypes". In such environments, the capacity to live within social norms and develop social relations built on trust and reciprocity is limited, which restricts opportunities for Indigenous people to develop bonding and bridging social capital beyond an Indigenous context (Christie & Greatorex, 2004; Hunter, 2004).

According to Brough et al (2006), the promise of policy makers to socially fix inequities by stimulating the growth of social capital is both simplistic and idealistic. While traditional definitions of social capital have a tendency to compartmentalise bonding and
bridging ties in communities, they do so without providing any depth or meaning to the space in between. For Indigenous people seeking both acknowledgement of their Aboriginality and freedom to participate in a multi-cultural Australia, being "bonded" and/or "bridged" raises questions of how Indigenous identity is constructed and policed, particularly in a society with a strong history of colonisation (Brough et al, 2006). Because racism, discrimination and stereotyping, and therefore social, cultural, political, economic and physical standing, allows and encourages the exclusion and segregation of Indigenous people from bonded and bridging ties in Australian society, the space between these dichotomies of social capital is filled by identity. As such, social capital and social networks must incorporate and acknowledge the social construction of identity as a central component of both theoretical and empirical research (Brough et al, 2006).

2.6 Identity
The term identity broadly describes the perceptions and understanding an individual may have of themselves as a discrete, separate entity. According to Falk and Balatti (2004, p.1), it was Erikson's (1975) work on 'conceptualising identity', both as a "lifework of the individual and as a lifework located in community and, more generally, society" that led to the disciplines of psychology and sociology producing differing though complementary theories on identity (Michalski & Helmig, 2008). For example, while the viewpoints and the writings of Bourdieu (1984) on habitus and Giddens (1984) on structuration theory originate from differing schools of thought, both provide an understanding of identity in terms of its relationship between micro and the macro social settings (Falk & Balatti, 2004). As a result, the following section provides a review of the
literature relating to identity theory, which is followed by the key concepts associated with social identity and place theory.

2.6.1 Identity theory

According to Stets, Carter and Fletcher (2008), identity is a set of meanings that an individual applies to themselves to characterise their positions and roles in society and to make them unique from others. Influenced by George Mead's (1934) work on the relations of self and society, Stryker (1968) termed the phase 'symbolic interactionism', which pays attention to the small and large social structural settings where social interactions take place and the individual 'self' is able to develop. In his earlier writings, Stryker (1968) focuses much of his attention on describing the manner in which the roles (behavioural expectations) and identities (internalised expectations) of individuals develop in social relations and the way in which large social structures, such as institutions and society, facilitate and constrain the attainment of each. Here, Stryker (2007, p.1084) defines social structures as the "patterned regularities of human interactions" whereby individuals mostly interact with the same or slow changing "cast of others", who perform roles and behaviours on a consistent basis in groups or networks. As a result, Stryker's identity theory is derived from a "structural symbolic inter-actionist framework" that provides an explanation of why people make the choices they do when they can enact "alternative role-related actions" (2007p. 1084). For example, using Stryker's (2007, p.1088) "prototypical question", identity theory can be used to explain why one person chooses to take their children to the zoo on their free weekend while another person chooses to spend that time playing golf with their friends?
Identity theory therefore seeks to examine and develop a theoretical explanation of role choice behaviour (Stryker, 2007) in order to answer 'who are we?' (Stryker & Serpe, 1982).

Central to an individual's identity is the categorisation of the self into specific social roles and in doing so, incorporating the meanings and expectations associated with those roles and its performance (Desrochers, Andreassi & Thompson, 2002; Stets, 2005; Stets & Burke, 2000). These meanings and expectations provide an individual with a set of standards that guide behaviour (Stets & Burke, 2000) and act as the individual's internal, perceptual control system (Powers, 1973). As a result, the individual and others act according to their prescribed role within the boundaries of a social structure, such as the familial identity of a parent, partner or child or the occupational identity of for example, a carpenter, accountant or car sales person, so that each recognises the other as the occupant of a specific role in society (Desrochers, Andreassi & Thompson, 2002; Michalski & Helmig, 2008; Stets, 2005; Stets & Burke, 2000). The relationship between the individual and others also incorporates resources and institutions to ensure social interactions, and therefore identities, remain within the context of social meanings and expectations (Freese & Burke, 1994). Both Stryker (1987) and Burke (1991, 1996) recognise that the individual who performs their role or identity adequately, in other words their behaviour meets social meaning and expectations, are rewarded with positive emotions while those who do not, receive feelings of negativity (Stets, 2005).
2.6.1.1 Principles of identity

In his examination of human identity, Breakwell (1983) asserts the existence of four key principles:

- Self-esteem;
- Self-efficacy;
- Distinctiveness;
- Continuity.

According to Breakwell (1983), self-esteem refers to the capacity of the individual to undertake positive self-evaluation, or a positive group evaluation of the cliques they associate and identify with. Alternatively, self-efficacy is defined as the individual's desire to feel competent and in control of aspects of their life while distinctiveness refers to the manner in which the individual emphasises their uniqueness when comparing themselves to others, either singularly or in groups. Continuity, on the other hand, subjectively connects identity across time and situation while also linking the past, present and future (Breakwell, 1983; Hauge, 2009). Although these four principles of identity will vary comparatively over time and across differing situations, they will also vary in salience (Hauge, 2009).

2.6.1.2 Identity salience

While it is recognised that the individual has a varying number of identities (Forehand, Deshpande & Reed, 2002; Kleine, Kleine & Kernan, 1993; Michalski & Helmig, 2008), less is known about why different identities are more active than others. While Callero (1985, p.203) acknowledges Mead's (1934)
early view that identity can be viewed as a structure of roles, he also argues that "some role-identities are more a part of the self than others and consequently, have a variable effect on the self-concept". According to Stryker and Serpe (1982), identities are arranged into hierarchies of salience whereby the most prominent identities are more likely to influence perceptions, behaviour and performance over those that are less important (Forehand, Deshpande & Reed, 2002; Stryker, 1968; Stryker & Burke, 2000). Desrochers, Andreassi and Thompson (2002) recognise that identity salience is one of the key concepts of identity theory as it determines how much an individual is likely to put into a role and how well they perform in it. For example, an individual who maintains a salient occupational identity will allow their work and their working environment to define 'who they are' over perhaps their role in their family (Michalski & Helmig, 2008).

2.6.2 Social identity

Like identity theory, social identity deals principally with the components of a structured society, although instead of classifying individuals according to roles they play out, social identity considers the social position of the individual within differing groups. Based on the writings of Mead (1934), Festinger (1954) and Sherif (1966), Tajfel (1972, 1984) expanded on the earlier concepts of social categorisation and social comparison to develop his theory on social identity. Using studies relating to group dynamics and processes, Tajfel (1978, p.16) defines social identity as "aspects of an individual's self-image that derive from the social categories to which [an individual] perceives [themselves] as belonging". Tajfel
(1982, p.24) later adds to this by recognising that social identity "derives from [an individual's] knowledge of [their] membership of a group together with the value and emotional significance attached to the membership." In other words, based on their perceptions of self-image, an individual will benefit and gain value from being part of the social groups that consist of members from similar social categories. As determined by Tajfel (1978, 1982) and Hogg and Abrams (1988), these social categories are a construct of society and existed before individuals were introduced and ascribed to them. As a result, the individual is born into a structured society and derive their identity from the social structures in which they belong. Social structures are therefore central to the individual's concept of self and social identity (Hauge, 2007; Tajfel, 1982).

### 2.6.2.1 Social categorisation and social comparison

As Tajfel (1984) extends his writings, he identifies and describes three fundamental features of social identity (Doise, 1988):

- Cognitive - recognition of belonging to a group;
- Evaluative - recognition of the value attached to the group;
- Emotional - attitudes group members hold of people inside and outside the group.

While self-concepts enable an individual to form perceptions of themselves through an abstract arrangement of social categories, self-concepts also inform perceptions of others, which enable the formation of social groups (Hauge, 2007). Stets and Burke (2000, p.3) define a social group as "a set of people who hold a common social identification or view
themselves as members of the same social category”, which allows groups to be classified according to, for example, nationality, age, culture, financial status, occupation or family. This process of social comparison enables an individual to recognise those who are similar to themselves as the ‘in-group’ against those who differ from themselves as the ‘out-group’ (Stets & Burke, 2000). Social comparisons also assume that individuals are more likely to view their personal characteristics, and the characteristics of others in the in-group, more positively than those in the out-group. An individual as a result, will be motivated to be part of those groups that reinforce a positive view of their own characteristics and social behaviours because of the humanistic motivation to maintain a positive self-esteem. This quest for positive distinctiveness means that an individual’s sense of who they are is defined in terms of ‘we’ rather than ‘I’ (Doise, 1988; Hauge, 2007; Stets & Burke, 2000).

Stets and Burke (2000) recognise that social categorisation and social comparison are the primary processes involved in social identity formation, each producing a different set of consequences. Social categorisation primarily places greater emphasis on the perceived similarities between the self and other members of the in-group as well as the perceived differences between the self and members of the out-group. This accentuation occurs across “all attitudes, beliefs and values, affective reactions, behavioural norms, styles of speech” and any other correlations with the relevant inter-group categorisation (Stets & Burke, 2000, p.3). Alternatively,
the process of social comparison encourages a selective application of those dimensions that provide self-enhancing outcomes for the individual. Such a process evaluates the dimensions associated with the in-group as positive, which raises the individual's self-esteem, and those linked to the out-group to be negative (Stets & Burke, 2000). As Hogg and Abram (1988) acknowledge, the social categories in which individuals place themselves only exist in relation to contrasting categories with each having more or less power, status or prestige.

2.6.2.2 Maintaining positive social identity
In any given situation, an individual will be confronted by different combinations of the self-concept, which provides a variety of self-images that correspond to a widening membership to social groups. While in some circumstances, self-concepts and group membership will have an influence on the social behaviours of the individual, in other contexts, an identity may be silent (Hauge, 2007; Stets & Burke, 2000). For example, the social behaviours of the individual may be influenced by their membership of, and participation in, a sporting group although remain silent with regards to their same sex orientation. This reinforces Tajfel's (1978, 1982) theory that a positive social identity is maintained by focusing on the manner in which an individual views themselves within the group and the way in which the group differs itself from other groups. If the individual is however, unable to preserve a positive self-esteem by maintaining membership to a
specific group, they will join another group (Hauge, 2007; Stets & Burke, 2000; Tajfel, 1982; Turner 1982).

Doise (1988) and Deschamps (1982) however, recognise that the ease by which individuals 'jump ship' from one in-group to another in order to maintain a positive self-identity, is not so straightforward. For example, members of dominating social groups are more likely to see themselves as unique individuals and a point of reference by which other people are defined. Members of a dominating group are thereby less likely to search for self-definitions or identity through their membership to specific groups. Alternatively, individuals from dominated groups are likely to define themselves, and be defined by others, more often in terms of the social categories imposed on them. The search for difference amongst individuals would therefore be the privilege of members from the dominant groups, which are likely to be further enhanced when group affiliations become more prominent (Doise, 1988; Deschamps, 1982).

2.6.2.3 Indigenous self-categorisation

For Indigenous people, the process of self-categorisation can be challenging as the individual is often faced with the dilemma of displaying an Indigenous identity while trying to be part of a dominant, non-Indigenous social space that has its social categories clearly defined. In a recent study, Brough et al (2006, p.401) describe the difficulty that Indigenous Australians encounter in managing aspects of self on a daily basis and, more specifically, which self to present amongst
differing cultural and social settings. For example, the use of
the term ‘mainstream’ primarily denotes non-Indigenous
space, such as education, politics, family life and the
workplace, and as such, Indigenous Australians participating
in these settings either have to continually prove themselves
(or disprove the social categories held against them) or be
perceived to have lost contact with cultural beliefs, traditions,
language and country (Brough et. al. 2006). In contrast,
Indigenous Australians participating in Indigenous spaces are
provided with greater clarity and certainty of the social
groups that offer and maintain positive self-esteem. This is
particularly evident for Indigenous Australians living on, or
returning to, traditional lands, which typically determine a
wide range of cultural protocols, language and social
structures (Jacob, 1991; Rose, 2000). Attachment to country,
and thereby place, becomes one of the key characteristics in
the formation and shaping of identity for Indigenous, and
non-Indigenous, Australians (Brough et. al. 2006; Memmott &
Long, 2002).

2.6.3 Place Identity
Although the connection between place and Indigenous identity
appears later in this section, it is necessary to review the literature on
place to first understand place identity theory. In their chapter, ‘The
social construction of reality’, Berger and Luckmann (1966, p.61)
recognise that “society is a human product... society is an objective
reality”... and that humans are “a social product”. Central to
discussions raised by Berger and Luckmann (1966) is the assertion
that any analysis undertaken of the social world without addressing
these three key features would be a misrepresentation of the binding relationships that exist between society, people and the physical places people occupy. The focus in this next section describes place and the outcomes that result from the interactions between social and natural landscapes.

2.6.3.1 Defining place

While social psychology employs social categorisation and comparison to answer the question ‘who we are?’, environmental psychology draws on place identity to answer this same question by determining ‘where we are?’ (Dixon & Durrheim, 2000; Falk & Balatti, 2004; Proshansky, Fabian & Kaminoff, 1983). Proshansky, Fabian and Kaminoff (1983, p.60) provide one of the earlier and more comprehensive insights into place identity by defining it as a “pot pourri of memories, conceptions, interpretations, ideas and related feelings about specific physical settings as well as types of settings”. According to Proshansky, Fabian and Kaminoff (1983), place is a distinct substructure of the larger concept of self because of the holistic and reciprocal interactions that exist between people and the physical environment. People affect the places they interact with and places (including the subsequent manner in which places are affected by these interactions) influence how people see themselves (Hauge, 2007).

Place-identity, as a cognitive sub-structure of self-identity, consists of an endless variety of cognitions related to the past, present and anticipated physical settings that define and circumscribe the day-to-day

The field of environmental psychology has paid particular attention to the relationships between place and people and the influences place may have on the identity of people. Tuan (1977, p.6) for instance, suggests that the meaning of place is based on human experience by explaining that “what begins as undifferentiated space becomes place as we get to know it better and endow it with value” (cited in Backlund & Williams, 2003). Similarly, Speller (2000) and Williams and Steward (1998) describe place as a geographic location that is assigned feelings, beliefs, values and meaning, which result from individual or group interaction. Falk and Balatti (2004, p.3) recognise place to be the physical setting in which people interact with “both the human and non-human elements of their entire environment”. The level of value or meaning assigned by the individual to a specific location is therefore reflected in the level of attachment they have to place.

Giuliani (2003) takes these definitions further and recognises that when place attachment grows, the individual begins to identify themselves more with both large scale places, such as cities, states or nations, and small scale places, like neighbourhoods, streets, a park, bushland or river. The individual then develops self-concepts based on their place attachment or ‘place belongingness’, which Korpela (1989) explains is the basis for place identity (Dixon & Durrheim, 81).
2000). Falk and Balatti, (2004) expand on this by describing how the bonds between people and place become threatened when the individual is removed from familiar places and relocated to foreign environments. It is during these moments of change and transition that the significance of place identity becomes apparent (Falk & Balatti, 2004). The loss of place can therefore invoke strong social and psychological responses because it also entails a loss of self (Dixon & Durrheim, 2004).

2.6.3.2 Functional and emotional attachment to place

According to Bilgenoglu (2006), Backlund and Williams (2003), Dixon and Durrheim (2000), Falk and Balatti (2004) and Hauge (2007), an individual will typically form a functional or emotional attachment to place. Functional place attachment, or place dependence, refers to the ability of a physical resource to meet the needs or goals of an individual (Schreyer, Jacob & White 1981; Stokols & Shumaker, 1981; Williams & Roggenbuck, 1989). As a result, the attachment that people relate to a functional place is determined by how well the physical resource satisfies the needs of an individual and how it compares to other places an individual has experienced or may know of from their past (Backlund & Williams, 2003). Factors such as location and accessibility can also inhibit or promote the ability of a place to meet the needs of the individual, which in turn impacts on feelings of place attachment. Alternatively, emotional place attachment, or place-identity, refers to the emotional impact
that a place has on an individual and how place affects an individual's concept of self and identity (Hauge, 2007).

2.6.3.3 Place attachment and place identity

While Proshansky, Fabian and Kaminoff (1983) recognise place identity to be a substructure of self-identity, Twigger-Ross and Uzzell (1996, p.206) believe that “all aspects of identity will, to a greater or lesser extent, have place related expectations”. Using Breakwell’s (1983) four principles of identity (self-esteem, self-efficacy, distinctiveness and continuity) Twigger-Ross and Uzzell (1996) provide a link between place attachment and the development of place identity by determining that ‘self-esteem’ remains high while individuals maintain a continued attachment and sense of belonging to a socio-physical environment (Bilgenoglu, 2006; Yuen, 2005). Similarly, feelings of ‘self-efficacy’ remain stable if the environment does not hinder the lifestyle and daily routine of the individual although self-efficacy can be threatened if the environment is perceived to be unmanageable. Twigger-Ross and Uzzell (1996) also review Breakwell’s (1983) remaining principles of identity with similar results by recognising that ‘distinctiveness’ of place supports feelings of belonging to a similar social group while ‘continuity’ of place provides familiarity and relations with past, present and future personal experiences (Bilgenoglu, 2006). As a result, Twigger-Ross and Uzzell (1996, p. 218) conclude that the “environment becomes a salient part of identity as opposed to merely setting a context in which identity can be established and developed".
2.6.3.4 Place identity and Indigenous people

Although supporting Breakwell's (1983) principles and the findings presented by Twigger-Ross and Uzzell (1996), Yuen (2005) underlines that people acquire a sense of belonging through their long term involvement with place, which reaffirms the role that history, experience and memories play in place attachment and place identity (Hay, 1998; Jorgensen & Stedman, 2001). This is particularly evident for Indigenous Australians, where local water and land scapes are considered to be embedded and indivisible with local Indigenous culture (Brough et al, 2006; Davis, 1998; Memmott & Long, 2002; Quin, 2003). Like Indigenous literature specific to other regions of Australia, research undertaken in northern Australia (see Christie & Greatorex, 2004; Jacob, 1991; KLRC, 1996; Memmott & Long, 2002; Mowaljarlai & Malnic, 2001; Rose, 2000; Taylor; 2003, 2008) recognises the interdependent relationship that exists between Indigenous people and country. The close attachment to land is central to traditional land use practices (such as sources of water, food, shelter, trading places), sacred areas (birthing, ceremonial and burial sites) and Indigenous belief systems (Memmott & Long, 2002). Traditional beliefs particularly refer to the relationship between Indigenous people and the spiritual world, which encompass the very creation of the land and water and all things within it (Jacob, 1991). As a result, the linkage between Indigenous people, land and water is one of the most significant aspects of Indigenous lifestyle, tradition, beliefs and culture (Carter et.al, 2004; Christie & Greatorex, 2004; Jacob, 1991; Moore & Davis, 2001; Mowaljarlai &
Malnic, 2001; Walsh & Mitchell, 2002). As Kakadu elder, Big Bill Neidjie explains:

Our story is the land ... it is written in those sacred places. My children will look after those places; that's the law. Dreaming place... you can't change it, no matter who you are. No matter you rich man. No matter you King. You can't change it (cited in Davis, 1998).

All aspects of Indigenous land and water, including its features, environments and products, form cultural landscapes that are specific and significant to Indigenous belief systems (Davis, 1998; Jacob, 1991; Mowaljarlai & Malnic, 2001; Quin, 2003). These cultural landscapes are the result of, and provide an explanation for, ancestral events, which derive their meaning from 'The Dreaming' (Davis, 1998; Jacobs, 1991; KLRC, 1996; Mowaljarlai & Malnic, 2001). For Indigenous people, The Dreaming refers to the period of creation when “the earth was soft” (Tapley, 2003, p.1) and provides a central understanding of Indigenous relations to traditional country. The Dreaming explains, through stories, the way in which ancestral spirits moved across the land creating human, animal and plant life, geographic landforms as well as religious and moral systems, which were, and are still, the foundations of Indigenous social and cultural existence (Mowaljarlai & Malnic, 2001; Quin, 2003; Tapley, 2003). These spirits are then transformed into physical features or sacred places, which provides evidence that The Dreaming remains in the natural environment and continues
to be a powerful spiritual force for Indigenous people
(Mowaljarlai & Malnic, 2001; Jacob, 1991; Quin, 2003). It is
also the integration of place into cultural systems that form
the basis for Indigenous knowledge (Davis, 1998).

2.7 Knowledge and learning
The attainment and sharing of knowledge has been a central component
of human behaviour, human understanding and human relations
throughout human civilisation (Nonaka, 1994). In classical philosophy,
Plato argues that a statement must meet three key criteria if it is
considered to be knowledge in that it has to be justified, true and
believed (cited in von Krogh, Ichijo & Nonaka, 2000). While such a view
has caused debate over many centuries, Davenport and Prusak (1998,
p.5) offer a more contemporary definition of knowledge, describing it as
"a fluid mix of framed experience, values, contextual information and
expert insight that provides a framework for evaluating and incorporating
new experiences and information". According to Zeleny, (1987), the take
up of knowledge does not occur in isolation or within a framework of fixed
rules but is instead reliant on an individual's subjective perceptions of the
world, which are created, recreated and adapted through personal
experiences, social networks and self-coordinated actions. Zeleny (1987)
goes on to recognise that knowledge takes on different forms, which he
describes as:

- Data – know nothing;
- Information – know what;
- Knowledge – know how;
- Wisdom – know why.
The relationship between data, information, knowledge and wisdom therefore forms a pyramid, which is otherwise known as the knowledge hierarchy (Ackoff, 1989; Bellinger, Castro & Mills, 2004; Bernstein, 2009; Davenport & Prusak, 1998; von Krogh, Ichijo & Nonaka, 2000).

2.7.1 The knowledge hierarchy

While Zeleny (1987) may have been the first to discuss data, information, knowledge and wisdom as differing forms of knowledge, Ackoff (1989) is believed to be the first to position these different forms into a hierarchical relationship (Bernstein, 2009; Trainmor-Knowmore Partners 2008). At the base of the hierarchy, Ackoff (1989) recognises that the human mind predominately contains large volumes of data, which Bernstein (2009) and Rowley (2007) describe as a set of discrete, objective facts that have no relevance or meaning unless processed into a usable form of information. Information is therefore a collection of data that provides meaning, purpose, explanation or an interpretation of a particular object, event or process, which in turn, impacts on an individual’s judgement and behaviour (Davenport & Prusak, 1998). Information that is organised, synthesised or summarised then becomes knowledge, which further enhances comprehension, understanding or awareness and enables individuals to take action or make decisions (Trainmor-Knowmore Partners 2008). Davenport and Prusak (1998) also recognise that if information is to be transformed into knowledge, individuals must either:

- Make comparisons - how information about a situation compares with other known situations;
- Understand consequences - what implications does this information have for decisions and actions;
• Make connections - how does this information relate to other segments of information;
• Have conversations - what do other people think about this information.

Adding value:
Action oriented
Measurable efficiency
Wiser decisions

Adding value:
Comparisons
Consequence
Connections
Conversations

Adding value:
Contextualised
Categorised
Calculated
Corrected
Condensed

Wisdom
Collective application of knowledge in action

Knowledge
Experience & context applied to a message

Information
A message or collection of data that changes perceptions

Data
Discrete, objective facts about an event

Figure 2.6: The relations between data, information, knowledge and wisdom form the knowledge hierarchy (adapted from Trainmor-Knowmore Partners 2008).

As a result, wisdom forms as the human ability to identify truth, evaluate actions, and their long term consequences, and make informed judgements and decisions based on previous knowledge, experience and insight (Bellinger, Castro & Mills, 2004; Bernstein, 2009). An adaption of Ackoff’s (1989) knowledge hierarchy is presented as figure 2.6.
In his earlier work, Ackoff (1989) also includes the term understanding in the knowledge hierarchy, which he believes is the cognitive and analytical space between knowledge and wisdom. Ackoff (1989) argues that understanding is a process of synthesising existing knowledge into new knowledge in order to make specific, wiser decisions or undertake useful actions. While recognising the work of Ackoff (1989), Bellinger, Castro and Mills (2004) believe that rather than being a separate level on its own, understanding exists throughout the knowledge hierarchy and supports the transition of data into information, from information into knowledge and from knowledge into wisdom (Rowley, 2007). As a result, Bellinger, Castro and Mills (2004) use the following graphic, figure 2.7, to represent the transition from data to wisdom.

Figure 2.7: Understanding supports the transition of data to information, to knowledge to wisdom (source: Bellinger, Castro & Mills, 2004).
2.7.2 Theory of knowledge creation

Nonaka (1991) and Nonaka and Takeuchi (1995) take the concept of knowledge further and describe how knowledge is created through an iterative and spiral process of socialisation, externalisation, combination and internalisation. Although their theories of knowledge creation and transfer are specifically located within an organisational setting, many aspects of Nonaka and Takeuchi’s (1995) work is still applicable at an individual, group and community level (Hafeez & Alghatas, 2007; Hildreth & Kimble, 2002).

Central to Nonaka (1991) and Nonaka and Takeuchi’s (1995) theories on knowledge creation is the distinction between tacit and explicit knowledge. Using ideas first raised by Polanyi (1967), Nonaka (1991) recognises that tacit knowledge is highly personalised and therefore subjective, experiential and not easily expressed because it is primarily context specific (Dalkir, 2005; Hildreth & Kimble, 2002). While tacit knowledge includes ingrained, “taken for granted”, cognitive skills such as beliefs, perceptions, intuition and mental models, it also includes technical skills, which Nonaka (1991, p.165) describes as the “informal, hard-to-pin down skills captured in the term know-how”. Alternatively, explicit knowledge is objective, formal, rational, systematic and context free, which enables concepts to be communicated and shared for example, as a computer programme, theoretical approach, resource manual or scientific formula (Nonaka, 1991).

For Nonaka (1991), tacit and explicit knowledge are not separate entities but mutually complimentary. The interaction between tacit and explicit concepts, or knowledge conversion, is central to the
creation and transfer of knowledge, which occurs in four stages (Dalkir, 2005; Halfeez & Alghatas, 2007; Sun & Hao, 2006):

- Socialisation;
- Externalisation;
- Combination;
- Internalisation.

According to Nonaka (1991), ‘socialisation’ is an interactive process between individuals that enable the sharing of tacit knowledge through observation, experimentation, imitation and practice. Dalkir (2005) however, recognises that because tacit knowledge remains primarily in the minds of the individual, it is rarely captured other than in one-to-one human situations and therefore has limitations as an effective means to create and share knowledge. If tacit knowledge is to be converted into explicit knowledge, a process of ‘externalisation’ is required whereby individuals within a group articulate their own tacit knowledge as well as elicit and translate the tacit knowledge of others into an understandable, explicit form (Dalkir, 2005; Nonaka, 1991). Such a process gives substance to tacit knowledge through the sharing of meaningful dialogue and reflection during face to face communication (Hafeez & Alghatas, 2007; Sun & Hao, 2006). The process of ‘combination’ enables explicit ideas to be mixed with other explicit ideas to identify dependencies, eliminate redundancies and allow a complete description of processes or procedures to be formed. Explicit knowledge from internal and external sources is systematically improved, synthesised or logically organised to be more usable and transferable to other groups (Nonaka, 1991).
The final stage of the knowledge spiral is 'internalisation', whereby explicit ideas are understood and embedded as tacit knowledge. Strongly linked to concepts of “learning by doing”, internalisation integrates shared and individual experiences and knowledge into individual mental models (Nonaka & Takeuchi, 1995, p.70). Once internalised, new knowledge is located, although at a higher level, in the socialisation stage and the process commences again to broaden, extend or reframe an individual’s existing tacit knowledge (Dalkir, 2005; Hafeez & Alghatas, 2007; Nonaka, 1991; Nonaka & Takeuchi, 1995). Nonaka and Takeuchi's (1995) knowledge spiral is presented here as figure 2.8.

Figure 2.8: The knowledge spiral (source: Nonaka & Takeuchi, 1995)
2.7.3 Communities of practice

Nonaka and Takeuchi (1995) recognise that their theory of knowledge creation provides a learning environment in which knowledge is shared, generated and practiced through group collaboration. While Nonaka and Takeuchi’s (1995) assertion that ‘learning by doing’ can improve the effectiveness of organisations, a similar approach can also bring about change and transformation in communities. However, rather than assume that learning is the net result of knowledge acquisition and accumulation by the individual, Lave and Wenger (1991) believe that learning is situated in the activity, context and culture in which it occurs and as such, evolves from social relationships and situations of co-participation. Learning, as described by Wenger (1998), is gained through the informal processes of active participation in social communities where individuals have the opportunity to grow and learn from their social and collective interactions. Lave and Wenger (1991) refer to this as ‘communities of practice’ and argue that groups of people, who are linked through shared interest, passion or concern, collaborate and work together to raise ideas, identify solutions, promote innovation, build social capital and facilitate the generation and transfer of knowledge within the group (Kilpatrick, Barrett & Jones, 2003; Wenger, 1998, 2006). The central concept of communities of practice therefore is that the individual will deepen their knowledge and expertise by interacting with others on an ongoing basis (Saint-Onge & Wallace, 2003; Wenger, McDermott & Snyder, 2002).

Wenger (1998, 2006) recognises that three characteristics have to be present if communities of practice are to exist, including a
domain, a community and a practice. Firstly, communities of practice require an identity, which is defined by a common domain of interest. Membership requires a commitment to the domain and a level of shared competence or expertise, which distinguishes domain members from non-members. Participants in communities of practice value their collective competence and learn from each other, even though people outside the group may not value or recognise their levels of expertise. The formation of a community is also an essential characteristic of communities of practice. In pursuing their individual needs within their domain, members engage in joint activities, share information, provide support and, in the process, form relations that enable the individual to learn from each other. However, members from communities of practice do not just form around an area of common interest or concern but instead become practitioners by developing a shared repertoire of resources such as tools, experiences, stories or problem solving techniques. The concept of shared practice however, takes time and sustained interaction but together with a domain and community, form a community of practice (Wenger, 1998, 2006).

For Wenger (1998), learning is central to human activity and can either be an unintended outcome of social interaction or the primary purpose for communities to come together. As members participate in a set of relations over time, communities develop around the issues, items or events that are important to people who live where such activities take place (Lave & Wenger, 1991; Wenger, 1998, 2006). As such, an individual can be involved in communities of practice in any number of locations and at varying levels of participation, be it sporting clubs, professional affiliates,
industry associations, environmental groups or leisure activities. The grouping of people around a particular area of knowledge gives members a sense of joint enterprise and identity and enables communities of practice to generate and adopt a shared collection of ideas, memories, approaches and practices as well as common mechanisms to carry the accumulated knowledge of the community to solve local problems (Wenger, McDermott & Snyder, 2002). As an active participant in the practices of social communities, the individual continuously creates their own shared identity by engaging in and contributing to the practices of communities.

2.8 Engagement

While Lave and Wenger (1991) recognise that social interaction and participation to be a central characteristic of learning, the term ‘engagement’ can often be used in a number of different contexts to describe a broad range of interactions between people (DSE, 2010). Although there are numerous definitions of engagement in the literature, the term is often used to describe a form of “consultation, extension, communication, education, public participation, participative democracy or working in partnership” (DSE, 2010, p.1). Engagement is often referred to as a tool for large organisations, including mining companies, land developers and local, state and national government agencies, to communicate, consult or gather information from specific or broad sectors of the community (see for example BP Australia, 2011; Communities Scotland, 2007; DES, 2001; DITR, 2006; DSE, 2010; Harvey & Brereton, 2005; l&dea, 2009; Rio Tinto, 2009). However, as consultative processes are predominantly initiated and controlled from a centralised source, they do not always give adequate attention to the concerns or
issues raised within a community (Wyman, Shulman & Ham, 2000). As a result, this approach to, and understanding of, engagement has been criticised for providing people with limited opportunities and power to participate in meaningful dialogue and decision making to bring about social change.

According to the Hashagen (2002), Mowbray (2005), the OECD (2001b) and Wyman, Shulman and Ham (2000), the view to ‘consult’ or ‘involve’ people can be considered to be self-serving and centrally driven as the motivation, resources and action associated with engagement primarily focus on supporting the perspective of large complex systems rather than the community in which these activities occur. For example, in describing the role of the state in engagement practices, the OECD (2001b, p.1) believes that “governments may seek to inform, consult or engage with citizens in order to enhance the quality, credibility and legitimacy of their policy decisions”. However, engagement is meaningless and disempowering if it becomes a process of gathering feedback about predetermined and centralised policy decisions that do not take up or address the needs and aspirations of the community (Blake et al, 2008; Hashagen, 2002; Mowbray, 2005; Silverman, 2004).

Hashagen (2002) suggests however, that unlike the terms ‘inform’, ‘consult’ and ‘involve’, engagement acknowledges the presence of two systems in society; a governance system and a community system. Hashagen (2002, p.2) recognises that if complex activities such as the community management of biosecurity are to meet the needs of all community members, relations have to be formed whereby:

...governance systems fully understand the dynamics of the community with which it seeks to work, and be prepared to adapt
and develop structures and processes that make them accessible and relevant to those communities.

In this way, engagement not only warns against making assumptions about communities, it also asks for a dialogue with communities. This being the case, engagement implies that attention remain on the development of relations between governance and community systems and that government agencies engage with communities and ask that communities engage with them (Blake et al, 2008; Hashagen, 2002). As these processes and activities specifically rely on building and sustaining relations with people, the term community and its associated meanings as detailed earlier in 2.4, should be central in the description of engagement when positioned in the field of social science (DSE, 2010).

2.8.1 Community engagement

In 1997, the Centres for Disease Control and Prevention (CDC) in Atlanta developed a set of principles for community engagement, specific to the public health sector. These principals have since been widely used and adapted by social scientists, community practitioners, non-government organisations, local and state government authorities and large corporations across a number of different settings. The CDC (1997, p.3) defines community engagement as:

The process of working collaboratively with groups of people affiliated by geographic proximity, special interests or similar situations with respect to issues affecting their well-being.

Of particular importance to the CDC is the development of partnerships and coalitions between government agencies, health
providers and the community to bring about a change in programmes, policies and practices in public health (CDC, 1997). One of the underpinning positions of community engagement is that it builds on the strength of social networks while also providing opportunities to exchange information with specific or all sectors of a specific population group. Community engagement can therefore be viewed more as a process, rather than an outcome, which is fostered through the development and maintenance of relationships (Aslin & Brown, 2004). Such an approach to community engagement places significant importance on locally driven ideas, activities and energy to enable local residents to play an active role in addressing local issues. According to Muirhead (2002, p.27), quality community engagement processes allow ideas to "bubble up" from a grass roots level to address the issues that impact on the lives of local people (Communities Scotland, 2007). Similarly, the OECD (2001a, 2001b) believes that the effectiveness of community engagement processes is specifically linked to the strength of relationships in the community. If relationships are strong between, for example, a government agency and a sector of the community, the process of engagement will enable local people to participate in the development of solutions and make decisions that bring about meaningful change and transformation to its members (Bryson & Mowbray, 2005; Communities Scotland, 2007; Hashagen, 2002; OECD, 2001b).

While an investment in improving relations between government and community systems provides considerable benefit in the development of local policies, it is also the basis for good governance. According to the OECD (2001b), good relations not
only open lines of communication but allow government agencies to tap into local knowledge, ideas, expertise and resources, which in effect, builds trust, increases the quality of democracy and strengthens civic capacity and participation. While Aslin and Brown (2004) agree that community engagement is central to maintaining an inclusive and participatory system of decision making, the CDC (1997) and DES (2001) also acknowledge that such processes greatly benefit community empowerment, community capacity building, the promotion of common understandings and the strengthening of localised relationships. Like the interactions that occur within an individual’s social network, the formation of relationships, through a process of community engagement, is built on aspects of trust and reciprocity.

2.8.2 Reciprocity in governance and community relations
Cooke (2004) reminds us that relationships between governance and community systems are reciprocal and community members need to be both aware and satisfied that what they receive in return for their participation in community engagement processes and the sharing of expertise, knowledge and local assets, is a fair exchange. Mohan (2001, p.158) acknowledges that it is common for governance systems to view community systems as the "unknowable" although it is the community that holds information, knowledge and therefore some degree of power over the resources that government systems often seek. Cooke (2004) suggests that these resources always remain the property of the community and as such, the community retains the power and authority to determine which resources are to be used and how. In this instance, community systems, or sectors of those systems, have
a legitimate right to not participate in community engagement processes if they chose to, particularly if there is limited confidence in the relationships between governance and community systems or if there is uncertainty about the reciprocal value of their participation (Kothari, 2001).

2.8.3 Building relationships

Although the strength, nature and purpose of relations between governance and community systems will differ from the strong, bonded ties typically found between individuals in close social networks, bridging and linking relations can be formed between individuals on the inside of government agencies and those on the outside. Based on his own community engagement practice, Muirhead (2002) uses aspects of theoretical research, such as that explained earlier in 2.8.1, 'Community engagement', to provide a model of relationship building that enables the development of sustainable partnerships within a community, which opens up opportunities for community engagement. According to Muirhead (2002), relationships are the very fabric of community and require:

- Honesty - information is exchanged as genuinely as possible;
- Respect - the perspective of others is well regarded;
- Inquiry - questions are asked to provide clarity and meaning.

Muirhead (2002) expands on these core elements as shown in figure 2.9 to acknowledge that when honesty and respect are present, trust will exist. Similarly, when relationships support inquiry and honesty, understanding will be present while those relationships containing respect and inquiry will also develop a sense of acceptance. Muirhead (2002) also argues that while much
attention focuses on building relationships, the absence of any one of the three key characteristics is likely to cause the relationship to break down. For example, if honesty is lost in a relationship, so are the elements of trust and understanding. Similarly, if respect is absent, so too are acceptance and trust and if opportunities to ask questions or make inquiries do not exist, understanding and acceptance are no longer present (Muirhead, 2002).

![Figure 2.9: Muirhead's (2002) key elements of relationship building](image)

While Muirhead's (2002) model is not definitive and may only be practical within a specific social context, key elements of his perspective are supported by Coleman and Putnam's theories on the development of reciprocal relations based on trust and social norms, as described earlier in 2.5.1 ‘Social capital in a historical context’. For example, in Bowling Alone, Putnam (2000, p.135) believes that “honesty and trust lubricate the inevitable frictions of
2.8.4 Trust

According to Giddens (1990), Luhmann (1979, 1997) and Putnam (2000), trust is an indispensable part of social life, which requires a confidence in the reliability of people and systems. Trust can exist at an inter-personal, inter-group, inter-organisational and societal level and is influential in the effective operation of systemic structures and processes (Cummings & Bromiley, 1996; Harris & Provis, 2000; Phillips, 2004). Mayer, Davis and Schoorman (1995, p.712) define trust as:

...the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to control or monitor.

Similarly, Cummings and Bromiley (1996) believe that trust is defined by beliefs and behaviours or more specifically, whether two parties are willing to keep commitments, negotiate with honesty and not take excessive advantage over another (Phillips, 2004). Dirks and Ferrin (2001) believe trust to be a psychological state, rather than a trait or disposition, whereby one party accepts vulnerability based on the positive expectation of the intentions or behaviour of another. While there is a range of differing views about trust (Buskens, 2002), Coleman (1990) provides four distinguishing elements to define trust between a trustor and a trustee:

- The trustor has the possibility to place resources with the trustee who has the possibility to honour or abuse that trust;
• The trustor benefits if trust is honoured by the trustee but regrets placing trust with the trustee if it is abused;
• There is no binding agreement that protects the trustor from the possibility that the trustee may abuse their trust;
• There is a time lag between the placement of trust by the trustor and the actions of the trustee.

While acknowledging Coleman’s (1990) position on trust is particularly in relation to social capital as described earlier (2.5.1.2), Hardin (1992, 2001, 2002) believes trust to be relational. Here, Hardin (2002) argues that one person’s trust in another is dependent on the relations that exist between the two, either directly through their own ongoing interactions or indirectly through intermediaries and reputational effects. If for example, two people participate in only a passing relationship, then a trusting relationship does not exist. For Hardin (1992, 2001, 2002), emphasis is not only on the capacity of a person to trust another but also on the trustworthiness of the trustee to act in the best interests of the trustor. Hardin (2002) also believes that the trustee has an incentive to be trustworthy if they perceive there to be value in maintaining and continuing a future relationship with the trustor. Hardin (2002, p.3-4) describes this as encapsulated interest, in that:

I trust you because your interest encapsulates mine, which is to say that you have an interest in fulfilling my trust (because) you want our relation to continue.

According to Hardin (1992, 2001, 2002), people who view their relations with others as rich, valued and ongoing interactions are more likely to be trusting and trustworthy in those relations. For
Luhmann (1979) however, trust requires the eagerness of an actor to enter into a position of complexity and uncertainty, which then makes them vulnerable to the opportunistic behaviours of others. As such, there are two prerequisites for trust to exist; risk and interdependence or reciprocity (Kazemipur, 2006; Lewis & Katsorchi-Hayes, 2008; Misztal, 1996). Luhmann (1979, 1997) suggests that communication between ‘actors’ is considered to be the fundamental unit of society as opposed to the collective and shared actions, values and interests of individuals. Trust forms therefore around the actions of communicative actors rather than the actions of individuals (Jalava, 2001). As a result, Luhmann (1979) believes trust, through the use of communication, is an effective mechanism to reduce the complexities of social interactions because individuals can develop more informed expectations about the future behaviours of others.

While Luhmann (1979) recognises communication to be a central mechanism in establishing trust across social situations, he also believes there to be a need to trust institutions in order to reduce the complexity of system interactions. In this context, formal regulations and informal cultural understandings combine over time to influence social behaviours through shared beliefs, experiences and backgrounds (Bachmann, 2001). Such rules and norms provide a structure that reduces the risks of social interactions and coordinates expectations of institutional roles and functions (Lewis & Katsorchi-Hayes, 2008). However, Diamond (2007, p.1-2) believes that trust should not be “blind or total” as a certain level of “questioning scepticism” is vital to maintain good governance and democratic processes while also scrutinising institutional practices
and the use of power. For Luhmann (1979), systems trust is much easier to attain than personal trust because it does not require the same level of social interaction to build relations, although on the other hand, can be much more difficult to control because it is not derived from communication or personal preference (Jalava, 2001).

Giddens (1990) acknowledges the important work of Luhmann although he believes trust to be continually present in social settings as opposed to being located within an exact or specific situation (Jalava, 2001). The continuity of trust results from individuals being confronted by a multitude of risks, contingencies and changed relations between time and space (Giddens, 1990). However, Giddens’ (1984) structuration theory and Luhmann’s (1979) trust of systems also share some common ground as both recognise the process of societal and organisational modernisation has meant an increased reliance and need for trust. As social and economic relations and exchange arrangements become more complex and dynamic, Bachmann and Zaheer (2006, p.2) suggest that “trust is needed as a lubricant to keep the motor running”.

2.9 Summary

A review of the literature in Chapter Two provides a broad, theoretical framework to answer the research question, ‘How do communities engage with new knowledge to bring about change?’ In this chapter, an explanation of change and human agency is presented and discusses the capacity of an individual to influence aspects of their immediate world without the constraints of fixed social structures. Social network theory then describes the patterns of human relations and in particularly, the manner in which strong, weak and absent ties influence the social
position of people within and amongst the larger networks of social interaction. Concepts of community are also described as a collection of people who share a common geographical location, interest or identity in which social norms, values, meanings and activities transpire. Communities also foster relations based on trust, respect, solidarity, security, membership, collective participation and reciprocity, which in turn supports the needs of its members being met. The collective resource that results from community relations and participation is referred to as social capital and can be drawn upon to build the community's capacity to develop and respond to localised issues and social change.

Chapter Two explains theories on identity, which is described as a set of meanings an individual applies to themselves to characterise their position and roles in society, and the position and roles of others. The literature also examines the impact of social interactions on the formation of identity as well as how an individual's functional or emotional attachment to place influences 'who they are' as a result of 'where they are'. While the interplay between identity and an individual's capacity to take up knowledge is discussed, Chapter Two also examines the core aspects of knowledge creation, learning and communities of practice. Here, learning transpires through the informal processes of social and collective interaction, whereby groups of people (linked through shared interest, passion or concern) work together to raise ideas, identify solutions, promote innovation, build social capital and facilitate the generation and transfer of knowledge from within. Processes of engagement and community engagement are then discussed and reflect the importance of working collaboratively, across and within governance and community systems, to address the issues that impact most on the lives of local people. Chapter Three will now provide a detailed description of the
epistemological and ontological assumptions associated with this research, the research design, justifications and research site as well as the methodologies used to collect and analyse the data.
Chapter Three: Methods and Description of the Research Site
3. Methods and Description of the Research Site

3.1. Introduction

In answering the question, 'How do communities engage with new knowledge to bring about change?', this research adopted a qualitative, bricoleur theory building approach to piece together a collection of viewpoints to better understand the complexities of a single social phenomenon (Kincheloe, 2001). Six sectors of the community, central to addressing biosecurity issues, were identified by the researcher while undertaking a scoping study during a period of familiarisation at the site. Using a participative approach, data were collected from each sector using the ethnographic techniques of participant observations, semi-structured interviews and a review of documents and artefacts. These techniques were gained through the ethnographically informed immersion of the researcher in the community, which in turn allowed a genuinely participative approach to data gathering. Using QSR International nVivo software, a thematic analysis of interview transcripts was undertaken, which resulted in the identification of main themes. Diagrams were created using Mindjet Mindmanager software to refine the analysis further and provide a visual representation of each theme. Once all analyses were completed, further interviews were conducted with seven people for cross-referencing purposes and independent verification of the analyses. Key findings emerged from the data following a synthesis of all data analyses.

3.2. Research epistemological and ontological assumptions

The central focus of this research is to study the social phenomenon of information exchange and knowledge transfer within a specific northern Australian community. Here, social phenomenon refers to a family of subjective objects, events or experiences that can be considered together for further analysis and explanation (Aho, 1998). In the field of
social science, qualitative research provides opportunities to introduce a
rich, in-depth and naturalistic approach to understanding certain social
phenomena within a context specific setting (Denzin & Lincoln, 2005;
Hoepf, 1997; Myers, 2000; Weil, 2008). Although quantitative research uses
experimental methods, mathematics and statistical data to test
hypothetical generalisations (Hara, 1995; Hoepf, 1997), qualitative
approaches recognise that people assign different meanings and realities
to the external world based on their own historical, social and cultural
experiences. Qualitative research aims to understand specific social
occurrences by observing individual and communal behaviours as well as
recording the viewpoints and descriptions of people’s cognitive and
symbolic actions (Flick, 2009; Hara, 1995; Myers, 2000; Patton, 1990, 2003).
One of the key intentions of qualitative research therefore is to
acknowledge and validate the recording of individual viewpoints, which
are shaped by everyday life experiences rather than by a concrete set of
scientific rules (Denzin & Lincoln, 2005; Patton, 1990, 2003). As a result,
qualitative research is more suited to collecting and analysing data during
social science investigations rather than the “test-and-control
experimental method” of the sciences (Abdi, 2001, p.1). According to
Merriam and Simpson (2000, p.97):

The key philosophical assumption upon which all types of qualitative
research are based is the view that reality is constructed by
individuals in interaction with their social world. Thus, there are
many realities rather than one observable, measurable reality which
is key to research based in the positivist paradigm.

Qualitative methods can also be particularly beneficial when used in
conjunction with, or following on from, quantitative research to interpret,
qualify or expand statistical findings. For example, Brown and Lloyd (2001)
believe that clinical policies formed in a health setting are based on
scientific evidence although often encounter problems when they are put
into practice. The use of qualitative methods enables a broad examination of problem areas and offer mechanisms to address and prevent such problems occurring again. In this instance, the views and experiences of end user groups become central in the formation and improvement of developmental policies and practice. While Brown and Lloyd (2001) specifically describe the use of qualitative methods in the area of health, the same view can be applied to the development and application of policies associated with biosecurity.

In this study, the definition of qualitative research offered by Denzin and Lincoln (2005, p.3) has been adopted in this study:

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings and memos to self. At this level, qualitative research involves an interpretive, naturalistic approach to the worlds. This means that qualitative researchers study things in their natural setting, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them.

The information observed and recorded in these social settings is qualitative data and one of the most effective methods to collect and interpret qualitative data (Hammersley & Atkinson, 1983, 2007) is the application of ethnographic research methodologies.

3.2.1. Applying an ethnographic methodology to the study
Ethnographic research is historically based in anthropological tradition to reproduce in text, the interesting aspects of 'other people' to give the reader an appreciation of, and familiarity with,
another social world (Genzuk, 2003; Hammersley & Atkinson, 1983, 2007; Kincheloe & McLaren, 2005; Nugent & Abolafia, 2007; Riemer, 2008; Taylor, 2002). According to LeCompte and Schensul (1999), ethnography takes the position that human behaviour, and the way in which people construct and make meaning of their world, are highly variable and locally specific. Research based on ethnographic principles assumes the researcher is 'immersed' in a culture so that a rich, contextual and holistic picture can be presented from within (looking out) as opposed to a bits and pieces view constructed from the periphery (Freire, 1970, 1985; Walcott, 1990). In other words, ethnographers must first understand what people do, and the reasons they give for doing it, before their actions can be interpreted (LeCompt & Schensul, 1999). According to Kincheloe and McLaren (2005), an ethnographer, as the collector and interpreter of data, can not discover, describe and explain a specific social setting unless they enter into and become part of that culture.

Ethnography is a form of social research (Hammersley & Atkinson, 1983, 2007) and as such, the ethnographic researcher immersed in a distinct cultural setting becomes the primary tool for data collection (Flick, 2009; LeCompt & Schensul, 1999; Riemer, 2008; Taylor, 2002). The three primary ethnographic techniques for data collection in qualitative research are participant observation, interviews and a review of documents and artifacts (DeWalt & DeWalt, 2002; Genzuk, 2003; Hammersley & Atkinson, 1983, 2007; Kincheloe & McLaren, 2005; LeCompt & Schensul, 1999; Nugent & Abolafia, 2007; Patton, 2002; Riemer, 2008; Taylor, 2002). While multiple data sources and data collection methods increase the validity and trustworthiness of research findings, Riemer (2008) also believes that regardless of the location of a study, whether it occurs
in a village or classroom, the key aim of the ethnographer is to provide a cultural interpretation of explicit observations to support new descriptions or extensions of social theory. Genzuk (2003) supports this view and identifies three key principles that ethnographic research and interpretation must be consistent with.

- **Naturalism** - social research captures naturally occurring characteristics of human behaviour through first hand contact with research participants. The impact of the researcher on participant behaviour is minimised so research findings can be generalisable in other settings. Social events and processes should also be explained in relation to the social context in which they occur.

- **Understanding** - if human actions, attitudes and activities are to be effectively explained, researchers must gain an understanding of the cultural setting from where such behaviours originate.

- **Discovery** - ethnographic research process are inductive, or located in raw data and discovery-based, as opposed to being limited to the testing of explicit hypotheses. While there may be general and theoretical interest in a social phenomenon, research narrows, sharpens and changes as it proceeds. As such, theoretical ideas develop over the course of the research to explain and describe all that has been observed.

While ethnography can provide observations and recordings of the actions, activities and behaviours of a specific social setting, ethnographers immersed in a community can also take a critical view to better understand the interplay that exist between individuals within a community as well as the relationships that extend outside the community.
3.3. Research design and justification

One of the central criticisms of quantitative approaches to social research is that it can not account for the interactions that take place in a social setting and ignores important events that are not statistically significant or reportable. Alternatively, qualitative methodologies will support the discovery of new information that can not be adequately described or measured by quantitative methods such as feelings, behaviours or emotions attached to past events or experiences (Brown & Lloyd, 2001; Hoepfl, 1997; Strauss & Corbin, 1990). According to Patton (2002), Stake (1995, 2005) and Yin (2003), using case studies as a qualitative research strategy provides a view of simple and complex phenomenon within real-life boundaries and context that not only provide the voice and perspective of specific actors, but also the voice and perspective of groups of actors and the interactions that exist (or do not exist) between them. Tellis (1997) views this as one of the salient characteristics of the case study as it provides opportunities for the powerless and voiceless to be heard.

As described earlier in this chapter, ethnography refers to the long term, qualitative study of groups, communities, people and their culture whereby data are collected using different methods such as participant observation, semi-structured interviews and a review of documents and artefacts (Abdi, 2001; Denzin & Lincoln, 2005; Farber, 2006; Hoepfl, 1997; Kincheloe & McLaren, 2005; Mack et al, 2005; Merriam, 2009; Neuman, 2003; Patton, 2002; Tashakkori & Teddlie, 2003; Taylor, 2002). The first of these ethnographic techniques, participant observation, typically use the elements of observation, conversations and participation (DeWalt & DeWalt, 2002). In this research, participant observations of social, cultural, physical, political, economic and environmental characteristics amongst people, events and organisations was undertaken over a fixed time period. Conversations with community members enabled the formation
of trust, which facilitated a greater sharing of information across different community situations and issues. The immersion of the researcher in the community also provided opportunities for integration and participation in local activities and decision making, which provided a better understanding of social dynamics, cultural exchange and power structures (Tashakkori & Teddlie, 2003). As a result, the researcher was able to go beyond the rhetoric of ‘what people say' to an understanding of ‘what people do'.

Being immersed in the community, the researcher gained access to internal and external documents as well as a variety of physical artefacts such as reports, newspaper articles and Indigenous art, which offered a broad historical perspective of the community (Farber, 2006). Interviews with community members were especially important in this qualitative study as each individual provided access to a direct source of rich data. Forty seven interviews were held with a total of 78 people over a 24 month period. Six follow up interviews were held thereafter with a further seven people to cross reference and verify the researcher’s interpretation of the data. In total, 53 interviews were conducted with 85 people.

The combination of these ethnographic techniques was essential, particularly in those circumstances where one or more methods of data collection were unsuitable. For example as explained in 3.8, ‘Limitations’, interviews with Indigenous women and Indigenous young women were not practical or appropriate during the period of data collection. However, participant observations and a study of local artefacts provided the researcher with opportunities to collect data that would otherwise not be available by alternate means. The data collected in these situations using ethnographic techniques were later measured against independent feedback provided in follow up interviews as described in 3.7.4.
Unlike quantitative research where the testing of hypotheses occur sequentially using statistics and mathematical equations, qualitative data analysis was performed concurrently with data collection to take account of the themes and categories emerging from field notes and transcripts of participant observations, interviews and document reviews (Brown & Lloyd, 2001; Hoepfl, 1997; Patton, 2002, 2003). While qualitative research techniques generate large volumes of data that may not be entirely relevant or central to answering the research question (Baptiste, 2001; Patton, 2003), data reduction or condensation processes were used to organise, arrange and synthesise data into “primitive quantities” (Miles & Huberman, 1994, p.11). While data collection methods described earlier aim to provide an accurate representation of a specific social event, activity or occurrence (Brown & Lloyd, 2001), the primary purpose of data analysis in this study was to capture, identify, code and categorise patterns found in that data (Boyatzis, 1998; Crabtree & Miller, 1999; Hoepfl, 1997; McRoy, 1997; Miles & Huberman, 1994; Patton, 2002). One of the challenges of qualitative analysis however, is making sense of the considerable volumes of data collected during ethnographic research. As a result, a synthesis of all data analyses provided a concise explanation of the data to enable key research findings to emerge (Patton, 2002).

3.4. Site and context
To demonstrate the complex nature of this research, it is necessary to describe where this study took place and the historical milestones of the region, particularly those associated with Indigenous custodianship and native title.

3.4.1. Location
The community in which this research takes place is located in a remote, rural region in the semi-tropical zone of northern Australia. The community is the main administrative centre for the local
government authority, or Shire, which covers an area of 121,189 square kilometres. Although the north western aspect of Australia has supported pastoralism since the 1880’s, this community as a township was formed in the early 1960’s to support the construction of an extensive irrigable agricultural system and subsequent farming activity. Since this time however, other industries as explained in 3.4.2.4, ‘Industry’, have become central to the region’s local economy.

3.4.1.1. Land
Geographically, the region’s landscape is comprised of extensive river systems, wetlands and seasonal waterways, fine textured alluvial plains and steep, rocky outcrops and ranges. The soil on the flood plains is a heavy, fertile black to dark clay, which sustains grazing cattle, forestry plantations and intensive agriculture production. Seasonal monsoonal rains and an extensive irrigation system ensure a consistent supply of fresh water, which is used for domestic, recreation, leisure, tourism, agriculture and industrial purposes. The surrounding districts are also known to hold deposits of lead, zinc, nickel, silver and gas, although the most notable natural resource operation in the area is the mining of diamonds (Kinhill, 2000; SWEK, 2009).

For Indigenous people, the landscape has a different meaning, which is inextricably linked to their spiritual and ancestral attachment to country (3.4.2.1, ‘Indigenous people’). This close connection to the land dates back 50,000 years and still is central to Indigenous belief systems (Jacobs, 1991). This is particularly evident in the relationship between Indigenous people and the spiritual world, which
encompasses the very creation of the landscape and all things within in it (Mowaljarlai & Malnic, 2001). As such, the link between Indigenous people and traditional land is one of the most significant aspects of Indigenous lifestyle, beliefs and culture (Carter et.al, 2004; Jacob, 1991; Moore & Davis, 2001; Mowaljarlai & Malnic, 2001; Walsh & Mitchell, 2002).

3.4.1.2. Climate

The regional climate is characterised by three main seasons; the dry, the build-up and the wet. The dry season extends from April to September and consists of warm days, mild evenings and minimal to no rainfall. With clear skies, an average relative humidity of 35.8% and temperatures ranging from 17.2°C to 33.2°C, the dry season is the optimal period for tourism and agriculture production. The ‘build-up’ occurs between October and November, although can extend from September to December, and is marked by very hot and humid conditions. Occasional monsoonal rains keep the relative humidity at 45.5% on average, with temperatures ranging from 23.8°C at night to 38.8°C during the day. While a considerable fall in tourist numbers can be observed at the commencement of the build-up, October and November also mark the beginning of the mango picking season. The wet season occurs from December to March with an average temperature range of 24.4°C to 36.1°C, humidity of 64% and irregular periods of sometimes severe monsoonal rains, which provide the bulk as the region’s average annual rainfall of 837.2ml (Bureau of Meteorology, 2009).
3.4.1.3. Flora and fauna
Although there are variations in native vegetation consistent with the changing geology and landforms in a northern Australian location, the most common flora are grasslands, boab trees (Adansonia gregorii) and savannah woodlands, which are dominated by Eucalypts including Acacia, Terminalia, Gardenia, Erythrophleum, Planchona gyrocarpus, Brachychiton and Melaleuca (Kinhill, 2000). The fauna is represented by cockatoos, lorikeets, magpie geese, wallabies, water monitors, frill-necked lizards, snakes, barramundi, fresh water and salt water crocodiles, and now, cane toads (Australian Museum, 2010; Kinhill, 2000).

3.4.2. History
One of the most notable characteristics of the community is the impact that Anglo-European settlement, development and industry has had, and continues to have, on Indigenous people and traditional lands. While pastoralists and missionaries have lived in isolated areas of the region from the 1880’s, the establishment of irrigable agriculture, mining, tourism and government agencies has meant that more concentrated populations have since been located in more centralised and purpose built communities. While pastoralism still plays a key role in the region’s economy, the increase in new industries since the 1960’s has brought with it a distinct demographic, which includes a high level of transience amongst residents, a high percentage of young people and young families as well as a high Indigenous population compared to the state and national average.
3.4.2.1. **Indigenous people**

Archaeological evidence suggests that Indigenous people have inhabited the land on which this study takes place for over 50,000 years (Jacob, 1991). According to Mowaljarlai and Malnic (2001), before European occupation there were some 55 different language groups in the region, each with their own geographically defined area and cultural beliefs. Since European contact however, that number has at least halved with only a small number of languages still remaining in any complete form (Jacob, 1991). Up until the early 1880's, an extensive Indigenous population was spread across the region although the expansion of the pastoral industry brought with it a new culture of land acquisition and land ownership (Williams & Kirkby, 1989). The initial strategy developed by many pastoral managers was to “indiscriminately massacre” local Indigenous people to make the country “safe for their purposes” (Rose, 2000, p.9).

With the expansion of regional pastoralist activities in the early 1900's and the introduction of legislation to further regulate Indigenous people by the state, Indigenous communities were relocated from traditional lands to collective and centralised missions and cattle stations. During this time, one third of all Indigenous children were removed from their families and placed under the guardianship of the state or the church (HREOC, 1997). The forced acquisition of land continued in the 1960's, 70's and 80's with the building of an irrigation scheme that included the construction of a new town (the community), the damming of a major river system and establishment of a diamond mine on culturally significant land. This transformed traditional Indigenous country into an
intensive agricultural and mining district, which included a lake with a surface area of 2,072 square kilometres at full capacity (SWEK, 2009). Social research later suggests that the regional economic policies and decisions at the time treated Indigenous people as invisible (Howitt, 1997) as development followed the interests of the settler population while neglecting the position of traditional land owners (Bolger, 1987; Sullivan, 1987).

In 1978, a joint national-state review of the irrigation scheme accepted that "the development... contributed to the dislocation of the life and religion of Aboriginal people living in the area" (ORIARC, 1979, p.5), "destroyed and irrigated land of sacred and traditional value to Aborigines" and "unquestionably contributed to the change which occurred in the life style of a number of displaced Aboriginal families" (ORIARC, 1979, p.106). The dislocation of people also brought with it a range of social issues such as poor health, chronic housing shortages and overcrowding, real unemployment of over 80% (Taylor, 2003), depression, excessive alcohol consumption, violence between different family groups and a "general feeling of hopelessness about the future" (ORIARC, 1979, p.107). The joint committee subsequently recommended that both the state and national governments examine the impact of development on Indigenous people in the region (ORIARC, 1979), although as stated in subsequent social and economic impact assessments, little has changed and in some circumstances, the situation has become worse (Bolger, 1987; Clement, 1989; ORIARC, 1979; Sullivan, 1987; Taylor, 2003, 2008; Williams & Kirkby, 1987).
3.4.2.2. European occupation

The first non-Indigenous explorers visited the region in 1879 and immediately established themselves as land agents specialising in the leasing of 21 million hectares to prospective pastoralists. Up until the development of the irrigation scheme in the 1960's, the region was mostly used for open range grazing of some 500,000 cattle over an area of approximately 350,000 square kilometres (DNR, 1976).

Government sponsored experimentation on the rich, alluvial soils began in the 1920's (LISWA, 2001) however, because of the region's climatic conditions as explained earlier in 3.4.1.2 'Climate', the only sustainable option for agriculture would involve the construction of an extensive irrigation system to supply fresh water to proposed farms on the surrounding river plains (DNR, 1976; Kinhill, 2000; Powell, 1998). A joint state and national government funded research station was established in 1941 to examine local soil types and topography, trial different crops according to local conditions and investigate potential sites to dam and supply water to 72,000 hectares of fertile flood plains (DNR, 1976; LISWA, 2001; ORIARC, 1979; Powell, 1998; PWD, 1972). Based on evidence provided by the research station, a town was established in 1960 (the community) with work completed on a diversion dam in 1963 to irrigate 14,000 hectares of land. A second, more substantive dam structure was completed 50 kilometres upstream in 1972. In 2008, state and national governments agreed to invest $220AUD million to expand the irrigation system to include a further 8,000 hectares of land. As a result, irrigable agriculture has been central to the community from the early 1960's.
Since the time of European exploration in the later 1870's, the region has attracted pastoralists, miners, farmers and others interested in 'developing the north', although as mentioned earlier in 3.4.2.1, 'Indigenous people', most have ignored the rights and interests of the region's Indigenous population. Much of the land is occupied by extensive pastoral leases while mineral production is dominated by diamond, nickel and iron ore mining to the south west of the community. However, even with extensive development and interest in the region over recent decades, the usual non-Indigenous population in the community is approximately 2,700 people as discussed in 3.4.2.3, 'Demographics'. Recent reports by Taylor (2003, 2008) also suggest that while government policies specific to the region focus on stimulating large scale commercial development, the reality is that a significant proportion of the region's economic activity is heavily dependent on government spending and investment.

3.4.2.3. Demographics

In Australia, a census of population is held every five years to accurately record the number of people, and their key characteristics, living in different geographic locations and population centres across the country. In 2006, the Australian Bureau of Statistics (ABS) recorded for the first time, the population of every community according to 'Place of Enumeration' and 'Place of Usual Residence' (ABS, 2007a, 2007b). Such an approach initiated a break from tradition and allows census data to now reflect the location of people on the night the census occurs (place of enumeration) as well as the place where people typically live (place of usual
residence). The purpose of providing two population profiles is "to minimise the effects of seasonal fluctuations in holiday/resort areas" (ABS, 2007a, p.8), which would in effect indicate the level of transience in any one community.

According to the ABS (2007a), 5,619 people were in the community on the night of the 2006 census, which included 2,856 (50.8%) males and 2,763 (49.2%) females, as detailed in table 3.1. Of these 5,619 people, 42.5% were aged between 25 and 54 years, 29.5% were aged 24 years and younger, 28.0% were aged 55 years and over and 3.8% (or 213 people) were identified as overseas visitors (ABS, 2007a).

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>148</td>
<td>176</td>
<td>324</td>
</tr>
<tr>
<td>5-14 years</td>
<td>358</td>
<td>330</td>
<td>688</td>
</tr>
<tr>
<td>15-19 years</td>
<td>148</td>
<td>129</td>
<td>277</td>
</tr>
<tr>
<td>20-24 years</td>
<td>188</td>
<td>181</td>
<td>369</td>
</tr>
<tr>
<td>25-34 years</td>
<td>385</td>
<td>418</td>
<td>803</td>
</tr>
<tr>
<td>35-44 years</td>
<td>373</td>
<td>399</td>
<td>772</td>
</tr>
<tr>
<td>45-54 years</td>
<td>406</td>
<td>408</td>
<td>814</td>
</tr>
<tr>
<td>55-64 years</td>
<td>500</td>
<td>478</td>
<td>978</td>
</tr>
<tr>
<td>65-74 years</td>
<td>285</td>
<td>207</td>
<td>492</td>
</tr>
<tr>
<td>75-84 years</td>
<td>57</td>
<td>23</td>
<td>80</td>
</tr>
<tr>
<td>85 years and over</td>
<td>7</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,856</strong></td>
<td><strong>2,763</strong></td>
<td><strong>5,619</strong></td>
</tr>
</tbody>
</table>

Table 3.1: The community's total population by age and gender using a place of enumeration population profile (source: ABS, 2007a)

On the night of the 2006 census, 1,008 people also identified themselves to be Indigenous Australians, of which 460 (45.6%) were male and 548 (54.4%) were female (ABS, 2007a) as shown in table 3.2. This figure equates to 17.9% of the
community’s population of 5,619 people, which is higher than the national average of 2.3% for Indigenous people living in Australia (ABS, 2007c).

<table>
<thead>
<tr>
<th>Indigenous Australians</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal Australians</td>
<td>445</td>
<td>539</td>
<td>984</td>
</tr>
<tr>
<td>Torres Strait Islander</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Aboriginal and Torres Strait Islander</td>
<td>11</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>460</td>
<td>548</td>
<td>1,008</td>
</tr>
</tbody>
</table>

Table 3.2: The community’s total Indigenous population by age and gender using a place of enumeration population profile (source: ABS, 2007a)

While there may have been 5,619 people in the community on the night of the 2006 census, not all identified the community as their usual place of residence as presented in table 3.3 (ABS, 2007b).

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>136</td>
<td>173</td>
<td>309</td>
</tr>
<tr>
<td>5-14 years</td>
<td>319</td>
<td>280</td>
<td>599</td>
</tr>
<tr>
<td>15-19 years</td>
<td>140</td>
<td>119</td>
<td>259</td>
</tr>
<tr>
<td>20-24 years</td>
<td>138</td>
<td>138</td>
<td>276</td>
</tr>
<tr>
<td>25-34 years</td>
<td>331</td>
<td>355</td>
<td>686</td>
</tr>
<tr>
<td>35-44 years</td>
<td>323</td>
<td>334</td>
<td>657</td>
</tr>
<tr>
<td>45-54 years</td>
<td>280</td>
<td>231</td>
<td>511</td>
</tr>
<tr>
<td>55-64 years</td>
<td>176</td>
<td>136</td>
<td>312</td>
</tr>
<tr>
<td>65-74 years</td>
<td>64</td>
<td>40</td>
<td>104</td>
</tr>
<tr>
<td>75-84 years</td>
<td>10</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>85 years and over</td>
<td>7</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,925</td>
<td>1,823</td>
<td>3,748</td>
</tr>
</tbody>
</table>

Table 3.3: The community’s total population by age and gender using a usual place of residence population profile (source: ABS, 2007b)
Data collected by the ABS (2007b) indicates that a more realistic record of the community’s population was 3,748 people, 1,925 (51.4%) were male and 1,823 (48.6%) were female. Of these 3,748 people, 49.4% were aged between 25 and 54 years, 38.5% were aged 24 years and younger and 12.0% were aged 55 years and over.

ABS (2007b) data also identified that 993 Indigenous people considered the community to be their usual place of residence on census night in 2006 as shown in table 3.4, which consisted of 449 (45.2%) males and 544 (54.8%) females. This figure equates to 26.5% of the community’s population, which is considerably higher than the 2006 national average of 2.3% for Indigenous people living in Australia (ABS, 2007c).

<table>
<thead>
<tr>
<th>Indigenous Australians</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal Australians</td>
<td>437</td>
<td>532</td>
<td>969</td>
</tr>
<tr>
<td>Torres Strait Islander</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Aboriginal and Torres Strait Islander</td>
<td>9</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>449</td>
<td>544</td>
<td>993</td>
</tr>
</tbody>
</table>

Table 3.4: The community’s total Indigenous population by age and gender using a usual place of residence population profile (source: ABS, 2007b)

A comparison between the community’s population as determined by place of enumeration (POE) and usual place of residence (UPOR) indicates that one third (33.3%) of the people providing statistical information on the night of the 2006 census were short term or transient residents as detailed in table 3.5. According to the ABS (2007a, 2007b), the most notable population disparities occur amongst people aged between 65 and 74 years (78.9% variation), 75 and 84 years
(78.7% variation) and 55 and 64 years (68.1% variation), which is consistent with a community attracting a high number of tourists, particularly grey nomads and winter drifters, which are described later in 3.6.1.5 ‘Tourism’. ABS (2007c) also denotes a 37.2% variation in the number of people aged between 45 to 54 years in the community, which indicates that freedom seekers, families and international travellers, as also explained in 3.6.1.5 ‘Tourism’, were recorded on census night as were short term residents who had taken up professional, semi-professional or trades positions in any one of the community’s local industries. Similarly, a 25.2% variation in the population of 20 to 24 year old people indicates the presence of backpackers who had travelled to the community to earn money and/or gain an extension on their tourist visa by participating in agricultural related activities.

<table>
<thead>
<tr>
<th>Age</th>
<th>POE</th>
<th>UPOR</th>
<th>Variation %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>324</td>
<td>309</td>
<td>4.6%</td>
</tr>
<tr>
<td>5-14 years</td>
<td>688</td>
<td>599</td>
<td>12.9%</td>
</tr>
<tr>
<td>15-19 years</td>
<td>277</td>
<td>259</td>
<td>6.5%</td>
</tr>
<tr>
<td>20-24 years</td>
<td>369</td>
<td>276</td>
<td>25.2%</td>
</tr>
<tr>
<td>25-34 years</td>
<td>803</td>
<td>686</td>
<td>14.6%</td>
</tr>
<tr>
<td>35-44 years</td>
<td>772</td>
<td>657</td>
<td>14.9%</td>
</tr>
<tr>
<td>45-54 years</td>
<td>814</td>
<td>511</td>
<td>37.2%</td>
</tr>
<tr>
<td>55-64 years</td>
<td>978</td>
<td>312</td>
<td>68.1%</td>
</tr>
<tr>
<td>65-74 years</td>
<td>492</td>
<td>104</td>
<td>78.9%</td>
</tr>
<tr>
<td>75-84 years</td>
<td>80</td>
<td>17</td>
<td>78.7%</td>
</tr>
<tr>
<td>85 years and over</td>
<td>22</td>
<td>17</td>
<td>22.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,619</strong></td>
<td><strong>3,748</strong></td>
<td><strong>33.3%</strong></td>
</tr>
</tbody>
</table>

Table 3.5: Variations in the community’s population according to place of enumeration and usual place of residence (modified from ABS, 2007a, 2007b)
In contrast to the high level of transience amongst the community’s non-Indigenous population as presented above, ABS (2007a, 2007b) data indicate that Indigenous Australians are the most stable population group in the community. A comparison between the two population profiles, as detailed in table 3.6, identifies that 98.6% of Indigenous people in the community on the night of the 2006 census considered the community to be their usual place of residence.

<table>
<thead>
<tr>
<th>Indigenous Australians</th>
<th>POE</th>
<th>UPOR</th>
<th>Variation %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal Australians</td>
<td>984</td>
<td>969</td>
<td>1.5%</td>
</tr>
<tr>
<td>Torres Strait Islander</td>
<td>10</td>
<td>9</td>
<td>10%</td>
</tr>
<tr>
<td>Aboriginal and Torres Strait Islander</td>
<td>14</td>
<td>15</td>
<td>(7.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>1,008</td>
<td>993</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

Table 3.6: Variations in the community’s Indigenous population according to place of enumeration and usual place of residence (modified from ABS, 2007a, 2007b)

As mentioned earlier, the community’s usual population on the night of the 2006 census was 3,748 people. A further review of the ABS (2007a, 2007b, 2007c) data reveals that the community had a medium age of 31 years compared to the broader Australian medium age of 37 years as shown in table 3.7. This same table indicates that 24.3% of the community’s population were 14 years and younger while 49.4% were aged between 25 and 54 years. This suggests that 2,763 or 73.7% of the population were likely to be part of a family unit that usually reside in the community.
<table>
<thead>
<tr>
<th>Age</th>
<th>UPOR</th>
<th>%</th>
<th>Australia</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>310</td>
<td>8.3%</td>
<td>1,260,405</td>
<td>6.3%</td>
</tr>
<tr>
<td>5-14 years</td>
<td>600</td>
<td>16.0%</td>
<td>2,676,807</td>
<td>13.5%</td>
</tr>
<tr>
<td>15-24 years</td>
<td>536</td>
<td>14.3%</td>
<td>2,704,276</td>
<td>13.6%</td>
</tr>
<tr>
<td>25-54 years</td>
<td>1,853</td>
<td>49.4%</td>
<td>8,376,751</td>
<td>42.2%</td>
</tr>
<tr>
<td>55-64 years</td>
<td>313</td>
<td>8.4%</td>
<td>2,644,374</td>
<td>13.3%</td>
</tr>
<tr>
<td>65 years and over</td>
<td>136</td>
<td>3.6%</td>
<td>2,644,374</td>
<td>13.3%</td>
</tr>
<tr>
<td>Total</td>
<td>3,748</td>
<td></td>
<td>*19,855,288</td>
<td></td>
</tr>
</tbody>
</table>

* Excludes overseas visitors

Table 3.7: The community's age breakdown compared to national statistics (Source: ABS, 2007c)

ABS (2007c) data recognises that of the 3,748 usual residents in the community on census night, 49.0% or 1,836 people aged 15 years and over were in the labour force. Of these 1,836 people, 71.2% were employed full-time, 18.4% were employed part-time, 5.2% were employed but away from their place of work, 2.9% were employed but did not state in what capacity and a further 2.2% were unemployed. While an unemployment rate of 2.2% in 2006 was considered to be low compared to the national average of 5.2%, ABS (2007c) data also identifies that 544 usual residents aged 15 years and over were not in the labour force. Recent studies in the region by Taylor (2008) identifies that 20% of Indigenous people in the community at the time were employed while the remaining 80% participated in work-based welfare initiatives such as Community Development Employment Projects1 (CDEP) or not engaged in the labour market at all.

Of the 1,836 Indigenous and non-Indigenous people participating in paid employment, 17.3% identified

1 A national government work for welfare scheme for Indigenous people
themselves to be professionals, 14.5% were technicians and tradespeople, 13.7% were labourers, 13.1% were managers and 12.5% were clerical and administration workers as presented in table 3.8. The main industries for employment included non-metallic mining and quarrying (8.4%), school education (5.6%), local government administration (4.8%), accommodation (4.3%) and hospitals (3.3%) (ABS, 2007c).

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Industry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionals</td>
<td>Mining</td>
<td>150 (8.4%)</td>
</tr>
<tr>
<td>Technicians/Trades</td>
<td>Education</td>
<td>101 (5.6%)</td>
</tr>
<tr>
<td>Labourers</td>
<td>Local Govt.</td>
<td>86 (4.8%)</td>
</tr>
<tr>
<td>Managers</td>
<td>Accommod.</td>
<td>78 (4.3%)</td>
</tr>
<tr>
<td>Clerical &amp; Admin.</td>
<td>Hospitals</td>
<td>59 (3.3%)</td>
</tr>
<tr>
<td>Machine operators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.8: The community’s main areas of occupation and main industries of employment (Source: ABS, 2007c)

3.4.2.4. Industry

Although the community is considered to be remote, it remains the central hub for a number of industries offering regional services and employment opportunities in a range of skilled and unskilled areas. The most prominent of these, in terms of capital investment and economic return, include government services, mining, agriculture and tourism with Indigenous and supporting service industries also playing a key role in the community. In 2008/09 for example, the total value of irrigated farming was estimated to be worth

---

2 The community is 3,200 kilometres by road from the state’s capital city, 800 kilometres from the capital city in the adjacent territory and 100 kilometres to the nearest town.
$101.5AUD million, $65.3AUD million of which included the imputed value of tropical forestry while a further $36.2AUD million was gained through horticulture, hybrid seed and field crop production (DAFWA, 2010). Pastoralism was worth a further $23.6AUD million in 2008 (KDC, 2009) while the most recent statistics suggests that tourism added a further $32AUD million to the local economy (Tourism Western Australia, 2008). The most significant industry however, is a diamond mine based some 200km south of the community, which produced an estimated $426.5AUD million worth of diamonds in 2007 (Rio Tinto, 2008) with a $760AUD million expansion expected to see production continue at the site until 2020 (KDC, 2006).

Although profit orientated industries generate revenue for the local economy, they are also susceptible to a wide range of unseen market forces, environmental threats and global events that impact on their production outputs. For example in 2007, sugar production, which was worth $18.7AUD million the previous year, was suspended in the region because falling world prices forced the sugar mill’s foreign owners to cease its local operations. Similarly in 2005, a series of severe storms and a highly competitive national market made bananas obsolete as a commercial crop in the community. However, as agricultural production has decreased over recent years, the amount of irrigable land allocated to tropical forestry has increased to the point where it is estimated that by 2012, sandalwood plantations will occupy more hectares across the region than all other crops put together (DAFWA, 2010). While private sector industries continue to have fluctuations in production levels,
government services have maintained a consistent presence in the region since European occupation.

3.4.3. Indigenous and Western land ownership: Native Title

Any dialogue or research concerning this region needs also to consider the colonial history impacting on the Indigenous people of the area as earlier discussed in 3.4.2.1, 'Indigenous people'. This is seen most recently in the political struggles and ensuing legal context of Indigenous land ownership. In December 2003, the Federal Court of Australia agreed that native title existed on the land where this project takes place. This ruling recognised that native title had not been extinguished as a result of regional mining, agriculture, tourism and pastoral activities and that traditional land continued to be of cultural significance and heritage to local Indigenous people (NNTT, 2003). In recognition of this ruling, an agreement was signed in October 2005 between traditional owners, the state government and the private sector to resolve native title and heritage issues affecting approximately 65,000 hectares of land around the community. The Indigenous Land Use Agreement provided compensation to traditional land owners for the past acquisition of land as well as for the attainment, extinguishment and impairment of native title over future developments in the community. This agreement also provided financial payments, which were (and continue to be) held in trust and used to promote, develop and preserve the economic, social, cultural and political position of Indigenous people in the community.

3.4.4. Sites for data collection

In accordance with the purposive sampling techniques used in this study as explained later in 3.6.2, the following sites were selected. The sites below are the geographic application of the six
community sectors established through the community scoping study as detailed later in 3.5.3.1, 'Community scoping and immersion'.

3.4.4.1. Schools

In the community, there is one private school of Catholic denomination (grades 1-7) with approximately 200 students, 80% of who are Indigenous. There is also one district high school (grades 1-12) with approximately 850 students. At the time of this study, an Australian rules football academy was attached to the district high school with 53 students, which according to the school's deputy principal, aimed to encourage Indigenous young males to return to education using Australian football as an incentive (pers. comm., 2010). Permission was granted by the state's education department and the district high school to conduct interviews with four specific groups at the school. These included six non-Indigenous young women aged 15 years and seven non-Indigenous young men aged 15 years from the 'mainstream' system (as referred to in 2.6.2.3, 'Indigenous self-categorisation') as well as five Indigenous young men aged 12 to 14 years and six Indigenous young men aged 15 to 16 years from the football academy. As explained in 3.8, 'Limitations', no similar education programmes existed for Indigenous young women at the time of data collection and as such, interviews with this group of young people were not forthcoming. However, the researcher was able to collect data by observing, conversing and participating with Indigenous young women and men aged between 12 and 18 years while employed as a tutor of Indigenous students at this site.
3.4.4.2. Indigenous organisations

As identified in 3.4.2.3, ‘Demographics’, the community retains a high Indigenous population, which is supported by fourteen locally based Indigenous organisations. Upon the project receiving permission from traditional elders, described later in 3.5.2, the opportunity to interview Indigenous participants within three Indigenous organisations became available. These included one interview with an Indigenous male at an Indigenous non-government organisation, one interview with an Indigenous male elder at a language and resource centre and one interview with six Indigenous adults (three females and three males) at an Indigenous arts centre. Interviews were also held with two groups of Indigenous young men associated with an Indigenous football academy as described in 3.4.4.1, ‘Schools’.

3.4.4.3. Local government (The Shire)

Known as the third tier of government behind the state and the national governance systems, the primary role of local government is to administer municipal by-laws and services closest to the community. With the appointment of a democratically elected Council and paid administrative staff, the key responsibilities for local government include the collection of residential fees and charges to provide public infrastructure such as parks, ovals, libraries, swimming pools and other recreation facilities. Along with this, local government is responsible for key services such as town planning regulation, building approval, environment health and refuse collection (SWEK, 2009). Although six requests for interviews were submitted to individuals undertaking varying paid and elected roles within the Shire, two interviews were
held with the authority's Chief Executive Officer and a young person employed at the local swimming pool.

3.4.4.4. Government agencies

Although the community is considered to be remote as detailed in 3.4.1, 'Location', it also provides a range of social, community and infrastructure services by the way of state and national government agencies. Interviews were held on-site with individuals employed in state government departments associated with education, agriculture, economic development and police services. Invitations to participate in the study were also extended to staff employed in two national government agencies, although these were not forthcoming.

3.4.4.5. Tourist related sites

As detailed in 3.4.2.4, 'Industry', tourism is one of the region's key economic activities in terms of its capacity to generate sustainable employment and infrastructure investment. This study identified that six different categories of tourist visit the community as discussed later in 3.6.1.5, 'Tourism', and include travellers, backpackers, holidaymakers, packaged tour groups, business travellers and people visiting family and friends. Taking into consideration the broad mix of tourists and tourism activities in the community, six different sites were identified to conduct interviews with tourism participants. An interview occurred on-site with a long-term operator of river cruises while two managers participated in a paired interview at one of the community's seven caravan parks. Two independent interviews were held with family members at a local rum distillery while an employee at one of the
community's four art galleries was interviewed on-site. As well as collecting data from tour operators, tourists visiting the community also participated in on-site interviews at two specific locations.

While the researcher was able to collect data by observing holidaymakers, packaged tour groups, business people and those visiting family and friends in the community, travellers and backpackers collectively make up the bulk of tourists visiting the region. As a result, six interviews were conducted with three pairs of travellers residing at a caravan park while two interviews were conducted with two backpackers staying at the same site. Two further interviews were held with a retired couple who had lived in the community for four years although preferred to reside at the same caravan park rather than at a fixed location. Four interviews also occurred with two pairs of travelling companions at one of the community's three backpacker hostels while a further interview was conducted with a group of six backpackers at the same site. The researcher also had the opportunity to observe the activities, attitudes and behaviours of backpackers while residing at a hostel for a period of three months during the initial period of this project. The sites selected for interviews were representative of the diversity found in the tourism sector.

3.4.4.6. Agricultural industry

Agricultural industry sites varied across the community from large scale companies with national and international profiles to small, independent activities that operate from a residential setting. Seven on-site interviews were conducted
with people from the agricultural sector and included a company director of a large, intensive fruit production company, a manager from an irrigated forestry plantation and an agricultural field officer with a government agency. An Indigenous environmental field officer was interviewed on-site (also identified in 3.4.4.2 ‘Indigenous organisations’), while two interviews were conducted with co-owners of a native seed picking business. Interviews were also held with two members of the same family who had long-term involvement in the agricultural industry as well as tourism (also identified in 3.4.4.5 ‘Tourist related sites’).

3.4.4.7. Community sites
While conducting on-site interviews was important in providing context to the data collection process, data was also gathered at three community sites. One participant had lived in the community (interrupted) since 1963 and was a volunteer at the district high school, local museum and historical society. As a result, an interview was conducted at the local museum. Four separate interviews were held with members of ‘Toadbusters’, a community action group aiming to raise awareness and slow the progress of the cane toad (*Bufo marinus*) into the community (Australian Museum, 2010). Two interviews were held at a café providing a meeting and display space for toad busting activities while a further two interviews were held in vehicles travelling to and from a weekend ‘toad bust’. Participant observations also occurred during a toad busting weekend at a site two hours east of the community.
3.4.4.8. Private homes

On eight occasions, it was appropriate and more convenient to hold semi-structured interviews in the home of the research participant. Interviews were held at various sites across the community with participants who identified themselves to be professionals, government and non-government employees, a stay at home parent and a retired couple. A further six follow up interviews were conducted with seven people in their homes at the conclusion of the data analysis as described in 3.5.3.3.3, 'Follow up interviews'.

3.5. Procedures and instruments

As noted at the commencement of this chapter, ethnographic techniques were used to collect data throughout the research. However, before any data were collected by the researcher, human ethics approval had to be secured and permission granted from local Indigenous elders and the state's education department. Once these approvals were achieved, a schedule of activities was developed to detail the duration of data collection, which included community scoping and immersion, data collection as well as follow up and clarification.

3.5.1. Ethics

An application was submitted to the Charles Darwin University Human Research Ethics Committee on 8 November 2006, which was subsequently granted and annually renewed throughout the duration of this study. Ethical clearance was also required from the state government's Department of Education and Training before interviews with young people were permissible within a school setting. An application for ethics approval was submitted to the Department of Education and Training with clearance granted on 14 March 2008.
3.5.2. Permission from Indigenous elders

Following local Indigenous protocols, the researcher introduced the project to traditional elders and Indigenous leaders at a peak Indigenous organisation’s management council meeting, which is a representative body for Indigenous people living in the region. As a result, the researcher was granted permission to invite Indigenous people to participate in the study. Personal contact was also made with Indigenous parents, grandparents and/or guardians to raise awareness of the research and discuss the participation of Indigenous young people in the study. Consent was granted from Indigenous parents for these purposes.

3.5.3. Duration of data collection

Although it can be difficult to determine exactly when data collection is concluded in a qualitative project involving ethnographic research (Patton, 2002), three specific phases were identified in this study as shown in table 3.9.

<table>
<thead>
<tr>
<th>Phase 1: Community Scoping &amp; Immersion</th>
<th>Phase 2: Data Collection</th>
<th>Phase 3: Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 months</td>
<td>18 months</td>
<td>2 years</td>
</tr>
<tr>
<td>Familiarisation activities</td>
<td>Ethnographic methods</td>
<td>Clarification</td>
</tr>
<tr>
<td>o Community scoping</td>
<td>o Participant observations</td>
<td>o Paraphrasing responses</td>
</tr>
<tr>
<td>o Stakeholder groups</td>
<td>o Documents and artefacts</td>
<td>o Feedback on transcripts</td>
</tr>
<tr>
<td>o Interview questions</td>
<td>o Interviews</td>
<td>o Follow up interviews</td>
</tr>
<tr>
<td>o Interview schedule</td>
<td></td>
<td>o Progressive focusing</td>
</tr>
</tbody>
</table>

Table 3.9: The three phases of data collection for this study

While table 3.9 specifies the three separate phases of this ethnographic study, there were also periods of overlap between the immersion of the researcher into the community and the processes of data collection and follow up. During the period of
familiarisation, a scoping study identified existing stakeholder groups and stakeholder gaps, which provided insights into the preparation of interview questions and an appropriate interview schedule. The ethnographic techniques of participant observation, semi-structured interviews and a review of documents and artefacts were used to collect data while follow up procedures ensured the data were accurately interpreted and recorded by the researcher.

3.5.3.1. Community scoping and immersion
An initial 18 month period of familiarisation involved exploring the physical layout of the community as well as developing informal and formal relations with local people, groups and industries. This period also provided an opportunity to develop a better understanding of local customs, attitudes, behaviours and lifestyles as well as existing social, cultural, physical, political, economic and environmental structures. These familiarisation activities were central to the compilation of a community scoping study, which identified the involvement (or potential involvement) of 17 groups in local biosecurity policy, planning and practice.

Using data reduction techniques as suggested by Miles and Huberman (1994) and Marshall and Rossman (1999), a review of the community scoping study identified similarities amongst the 17 groups, which were collapsed to form five coherent clusters, called here ‘community sectors’. A sixth group was added at this stage even though it had not been included in the initial scoping study. This group was considered important in the context of biosecurity because it contained a large number of people, most of who were concerned about the environment and participated in a range of outdoor
activities. After discussions with primary industry leaders and a review of scoping study outcomes, these six groups were identified as:

- Agricultural industry;
- Government agencies;
- Indigenous groups;
- Local residents;
- Tourism;
- Young people.

This scoping study identified six sectors within the community from which the data would be gathered. As the attributes and locations of each sector were different, it became clear that this would markedly influence the nature and methods of data collection, which are now described.

3.5.3.2. Methods of data collection

Data for this project were collected using a mixed methods approach (Tashakkori & Teddlie, 2003) consisting of ethnographic techniques such as participant observations, semi-structured interviews and a review of documents and artefacts.

3.5.3.2.1. Methods of participant observations

Participant observation is a major qualitative and ethnographic methodology, as discussed earlier in 3.2.1, 'Applying an ethnographic methodology to this study', whereby the researcher is immersed in the day to day activities of a specific group, culture or community. Using elements of observation, conversation and participation, this methodological
approach was central to this study and provided the researcher with an understanding of the social context in which the investigation took place. These elements are much easier to achieve if community members trust and respect the observer and, since this is best attained by regular participation in the life of the community (Freire, 1970, 1985), the researcher relocated to the community and became a local land owner. The complete integration and participation of the researcher into community life also simplified the logistics of data collection. For example, the familiarity with the community (people and place) meant it was easy to set appointments and locate meeting places, and since there were no tight travel deadlines, more time was available to listen to people. This period of observation also provided opportunities to cross-reference and verify data collected using other ethnographic techniques.

As suggested by Kvale (1996), Mack et al (2005) and Merriam (2009), research that specifically relies on semi-structured interviews is likely to provide a limited view of community activity and can not accurately reflect the practices of a broader population or group. This view is supported by Houle’s study on programme planners (cited in Arnott, 1994), which indicates that the actual practices of people very often differ from the practices they put forward during semi-structured interviews. In this study, participant observations were measured
against data collected during semi-structure interviews and a review of documents and artefacts to better understand whether espoused theories of practice are actual theories in use (Arnott, 1994).

3.5.3.2.2. Methods to review documents and artefacts
In this research, documents and artefacts refer to the physical and symbolic artefacts that relate to the six community sectors and wider community (produced from either inside or outside the community) as well as historical data, religious icons and cultural objects. Here, documents and artefacts included historical and contemporary reports and research papers, brochures, minutes of meetings, letters, memoranda, photographs, local, state and national newspapers, industry bulletins, websites as well as Indigenous rock art and Indigenous paintings as presented in table 3.10.

<table>
<thead>
<tr>
<th>Documents</th>
<th>Local</th>
<th>State</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspapers</td>
<td>156</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Photographs in competition</td>
<td>1097</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Referenced photographs</td>
<td>224</td>
<td>86</td>
<td>6</td>
</tr>
<tr>
<td>Brochures</td>
<td>156</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>Reports</td>
<td>9</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Industry bulletins</td>
<td>3</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Rock art sites</td>
<td>4</td>
<td>2</td>
<td>2 (other states)</td>
</tr>
<tr>
<td>Indigenous paintings</td>
<td>124</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>Minutes of meetings</td>
<td>48</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>Letters</td>
<td>18</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Websites</td>
<td>18</td>
<td>18</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3.10: Approximate number of documents and artefacts cited during this study
A review of documents and artefacts was useful in determining how information and new knowledge were transferred in the community while also providing a historical reference of the social, cultural, physical, political, economic and environmental impact of non-Indigenous occupation on Indigenous people and traditional lands.

3.5.3.2.3. Programme of semi-structured interviews

Being familiar with the community in the early stages of the project guided the drafting of interview questions, which were presented to the project supervisory panel for feedback. This feedback, together with knowledge of the community gained through familiarisation, ensured interview questions were relevant to the six community sectors while also being integral to answering the research question, 'How do communities engage with new knowledge to bring about change?'

As a result, data were collected using the same semi-structured interview questions, for example, with young Indigenous males who use Creole\(^3\) as their first language and non-Indigenous retirees travelling around Australia towing a caravan.

Knowledge of the community’s social, cultural, physical political, economic and environmental features assisted in the compilation of an interview programme. The period of familiarisation provided the necessary information to determine the most appropriate time of

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\(^{3}\) A language that arises from a mixture of different languages to become the main language of a place (Brickerton, 1995).
the day, day of the week and weeks in the year to interview participants from each community sector as well as suitable sites to hold such interviews. For example, interviews with local farmers were best scheduled for February when most residents had returned from Christmas vacations and agricultural production is typically at its lowest during the wettest month of the year. Given these considerations, a draft semi-structured interview programme was developed with the knowledge that it be tailored for each community sector. While table 3.11 identifies the most suitable months of the year to conduct semi-structured interviews with different sectors of the community, appendix one presents the interview questions, which comprise of main question areas and follow-up, probing questions or topics as appropriate (Patton, 2002; Strauss & Corbin 1990).

<table>
<thead>
<tr>
<th>Community sector</th>
<th>J</th>
<th>F</th>
<th>M</th>
<th>A</th>
<th>M</th>
<th>J</th>
<th>J</th>
<th>A</th>
<th>S</th>
<th>O</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td>Agricultural industry</td>
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<td>X</td>
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<tr>
<td>Government agencies</td>
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<td></td>
<td></td>
<td></td>
<td>X</td>
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<td></td>
<td>X</td>
</tr>
<tr>
<td>Indigenous groups</td>
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<td></td>
<td></td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Local residents</td>
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<td></td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tourists</td>
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<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tourism operators</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Young people</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Table 3.11: Programme of interviews - months coloured black indicate appropriate periods to interview each community sector

3.5.3.2.4. Method of semi-structured interviews

According to Kvale (1996), Merriam (2009) and Patton (2002), participant interviews are the most important
tool in qualitative research because they provide access to a large and direct source of detailed and context-rich data. In this study, semi-structured interviews were used to invoke participant responses to a set of predetermined research questions while also allowing opportunities for open discussions to ensue if required (Horton, Macve & Struyven, 2004; Kvale, 1996; Partington, 2001). Using Arnott’s (1994) case study as an example, semi-structured interviews act much like a questionnaire checklist to ensure participants address the necessary themes and key areas in their responses. In this instance, ten primary questions formed the basis for each interview with a series of secondary questions enabling participants to provide more detail in specific areas. As a result, the researcher was able to present a consistent process that allowed for flexibility in the collection of data while ensuring interview questions remained relevant to each community sector. For the purposes of cross-referencing, six follow up interviews were conducted with seven people to independently verify the results of the analyses as discussed later in 3.5.3.3.3, ‘Follow up interviews’.

3.5.3.2.5. Conduct of semi-structured interviews
Familiarisation with the social, cultural, physical, political, economic and environmental structures in the community influenced the manner in which interviews were conducted. Although similarities exist amongst all six community sectors, each maintained a set of characteristics that were unique in comparison to one another. It was the unique characteristics of each
community sector that informed the manner in which interviews were conducted rather than the general features they held in common. For example and where possible, data collection amongst Indigenous artists and Indigenous young people was specifically undertaken in a group setting with food, tea or other light refreshments as well as an interpreter. This provided a relaxed, informal, conversational-style atmosphere, which in turn, encouraged participants to exchange information openly with the researcher.

In all, 47 interviews were conducted within an 18 month period involving 78 people from six sectors of the community. Interviews were enacted individually, as a pairing or in small groups with no more than seven people. A further six follow up interviews were held with seven individuals from varying backgrounds to ensure the researcher's overall interpretation of the data was accurate and similar to community perceptions. In total, 53 interviews were conducted with 85 people.

Interviews as pairings were undertaken for the convenience of the participant and consisted of two interviews being undertaken simultaneously with residents, travellers or backpackers who identified as companions or in a personal relationship. Small group interviews were undertaken because it was logistically convenient and less disruptive to the participant. For example, it was less problematic to arrange two group interviews at the district school than it was to conduct 13 individual interviews with young people. Each
participant (young people included) provided written consent before interviews commenced and parents, grandparents or guardians of young people participating in the research provided consent before interviews were conducted (appendices two, three and four). All research participants were provided with information sheets detailing the nature of the project, the expectations of each participant and the rights of the participant to withdraw or add to the data at a later date (appendix five). Young people (appendix six) and the parents, grandparents or guardians of young people participating in the research, were also provided with this information, which appears as appendix seven.

After the first two interviews, a review of questions identified that the wording of two questions required adjustment and the omission of one question, ‘Do you meet with group members outside of the group setting?’, which was covered elsewhere by the question, 2.d ‘How often do you meet?’ The wording of interview questions for travellers and backpackers was also modified to accommodate the short period of time each research participant was in the community. For example, rather than respond to ‘How long have you lived in the area?’ travellers and backpackers were asked ‘How long do you plan to stay in the community?’ (appendix eight). However, even with these slight adjustments, the content of semi-structured interviews remained consistent.
Interviews were held at varying locations in the community as discussed in 3.4.4, ‘Sites for data collection’, with all participants being offered the same questions in the same format. The flexible nature of semi-structured interviews allowed participants to elaborate on particular points, provide examples or engage in discussion with the researcher about specific issues. This resulted in interviews ranging in length from 23 minutes, 11 seconds to 3 hours, 45 minutes and 16 seconds. The average duration of an interview was 61 minutes and 7 seconds. Hand written notes and a digital voice recorder were used to substantiate and document these interviews. All digital voice recordings, including follow up interviews were later transcribed into text, 39 by the researcher and 14 by a professional, external transcribing service. The transcribing of oral data into written text then enabled a thematic analysis of the data to be undertaken using nVivo software as described in 3.7.1, ‘Thematic analysis using nVivo’.

3.5.3.3. Follow up and clarification
To ensure data collection methods remained consistent and interpretations of the data were authentic, a practice of cross-referencing and progressive focusing was adopted.

3.5.3.3.1. Verbal clarification
To clarify whether information was interpreted accurately, the researcher adopted a practice of paraphrasing responses to participants after the completion of each interview question. This ensured that hand written and digitally recorded accounts of
interview responses were clarified and confirmed while the information was relevant and fresh in the mind of the participant, the researcher and the context in which the interview question was discussed. While this was important for all community sectors, it was especially necessary during and after interviews with Indigenous artists and Indigenous young people as an interpreter was used during the data collection process.

3.5.3.3.2. Feedback on interview transcripts
Participants were invited to read their interview transcript to ensure the information provided, and its meaning, was recorded accurately. One participant requested a copy of their transcript to provide additional information to the data collected in an earlier interview. This process of cross-referencing was useful in developing relationships between the participant and researcher while also challenging and clarifying the researcher's interpretation of the data. Similarly, interviews in a group setting generated debate and discussion amongst participants, which resulted in the provision of further ideas and information.

3.5.3.3.3. Follow up interviews
To ensure the researcher's interpretation and presentation of the data was both accurate and consistent, six follow up interviews were conducted with seven people (both Indigenous and non-Indigenous) to independently verify the results of the analyses.
Because initial participant interviews were weighted more towards males (44) over females (41) as described later in 3.6.2.2, 'Distribution of gender according to age', four adult females and three adult males were invited to participate in follow up interviews to ensure the previous gender imbalance was addressed. Participants in the follow up interviews were not involved in the original interview process and were identified because of their breadth and depth of experience, knowledge and participation in community activities.

Interviews with follow up participants occurred at the conclusion of stage three of the data analysis and provided the opportunity to verify and challenge the key findings emerging from the data. Participants involved in follow up interviews were provided with an explanation of the methodological process used, as well as an overview of the information presented during the initial 47 interviews of this study. Responses from participants in follow up interviews were recorded and measured against the results of the data analyses for verification.

3.5.3.3.4. Follow up interview participants
Other than one partnered couple, the seven follow up participants were not linked in any way and maintained a diversity of social, professional, cultural, political and economic interests and backgrounds. The first participant was a long term resident who had broad experience and knowledge of health,
community and tourism issues. The second and third follow up participants were a partnered couple with professional and personal links to Indigenous young people and their families. The fourth participant was an active member of the agricultural industry with experience in producing a variety of different food crops. The fifth follow up participant had been involved in range of professional roles in the environmental sector while also volunteering in a number of community, sporting and school related events and activities. While employed in a senior management role in a state government department, the sixth participant also maintained personal, professional and cultural links to the local Indigenous community. The seventh participant was a self-employed tradesperson, who travelled extensively throughout the region in pursuit of work and leisure activities and demonstrated a wide knowledge of issues associated with local industry groups.

3.5.3.3.5. Methods of progressive focusing
As explained initially by Parlett and Hamilton (1972) and then by Miles and Huberman (1994), Silverman (2010) and Stake (2010), progressive focusing was used throughout this research to funnel a wide volume of information into a condensed, narrow data set, which enabled key themes and patterns to emerge. While the use of thematic analysis, data coding and constant comparisons provided the means to synthesis data into a “primitive quantity” (Miles & Huberman, 1994, p.11), the researcher continuously reflected on the themes
emerging from the data against participant observations as well as original field notes, transcripts and documents. Similarly, research findings were offered for review by peers (Creswell & Miller, 2000) and experts (Patton, 2002) living in the community as well as those with skills and experience in the fields of agriculture, social science and qualitative research. The process of continuous review and progressive focusing provided a further layer of data clarification and validation.

3.6. Participants and sampling
As explained earlier in this chapter, a community scoping study was undertaken during phase one of this research project (3.5.3.1). One of the key outcomes to emerge from the scoping study was the identification of 17 groups that were involved (or had the potential to be involved) in the development of local biosecurity policy, planning and practice. Analysis of these 17 groups identified six community sectors that would be central to the implementation of future biosecurity strategies in the community. Identification of these community sectors provided opportunities to collect data through participant observation and a review of documents and artefacts while individuals who exhibited specific characteristics of at least one community sector were invited to participate in semi-structured interviews during this study.

3.6.1. Community sector characteristics
Although the six community sectors identified in the scoping study shared a number of similarities such as age, gender, longevity and social, cultural, physical, political, economic and environmental investments in the community, it is the unique characteristics of each community sector that enabled the researcher to identify and
differentiate one sector from another. As a result, individuals were invited to participate in the research according to their membership of a specific community sector.

3.6.1.1. Young people
In western societies, definitions of young people are influenced by a number of factors including age, gender, culture and ethnicity, sexuality, education, (dis)ability or financial and social status (Saggers et al, 2004; Sercombe, 2010; White, 1993; White & Wyn, 2004). Although the researcher recognises that all these sub-sectors are an important consideration when undertaking more purposeful research with young people, in this study the community sector ‘Young people’ refers to those aged between 12 and 18 years. This is consistent with notable Australian writers on young people and youth affairs including Bessant (2006), Palmer (2006), Sercombe (2010) and White (1993, 2009).

3.6.1.2. Indigenous groups
In this study, invitations to participate in interviews were extended to people who identified as Indigenous Australians. Family and spiritual heritage is of considerable significance to ‘Indigenous groups’ as it provides connection to traditional country, protocols, language, beliefs and culture. Indigenous people with links (traditional or otherwise) to the country on which this research takes place were especially invited to participate in the study although young people with family connections to other locations across the region also provided input during group interviews. One of the limitations of this project however, was the capacity of the researcher to
undertake interviews with Indigenous women and Indigenous young women, which is explained in 3.8, 'Limitations'.

3.6.1.3. Agricultural industry
In this study, the community sector known as the 'Agricultural industry' refers to those who are involved in the cultivation of soil, production of crops and/or the raising of stock (Bolam, 2004). This includes individuals employed in agriculture (grain, pulses, rice, hay), forestry (sandalwood), horticulture (fruit, vegetables), nurseries and pastoralism (cattle) along with their associated services such as the district cooperative, machinery dealerships, seed suppliers and some non-government agencies specific to irrigation, land and water use practices.

3.6.1.4. Government agencies
As the provider of regional services to the immediate and surrounding districts, the community maintains a high number of local, state and national government services. This study identified 'Government agencies' to include people employed within the local Shire, the state departments of education, agriculture, economic development and police services as well as the national departments of Centrelink and Indigenous coordination.

3.6.1.5. Tourism
For the purposes of this study, the community sector referred to as 'Tourism' is defined as travel, predominantly for recreation, leisure or business purposes. Similarly, the term tourist is used as a collective reference for any person, be they international, interstate or intrastate, who leaves their
usual place of residence for the purposes of pleasure, business, visiting family and friends or other reason (Tourism Western Australia, 2008). Tourism operators therefore include any person or organisation who partly or wholly provides services and products to tourists be it information, accommodation, food, sight-seeing (either by air, land, water or foot), cultural exchange and/or leisure activities.

In this study, tourism operators cater for six different types of tourist including travellers, backpackers, holidaymakers, packaged tour groups, business travellers and people visiting family and friends. Although data was collected from all six tourist groups using ethnographic techniques, backpackers and travellers were specifically invited to participate in semi-structured interviews. According to data collected during periods of familiarisation, participant observation and a review of documents and artefacts, both these groups maintained high visibility, stayed in the community for short and longer periods of time and collectively made up the bulk of tourists to visit the area (Tourism Western Australia, 2008).

3.6.1.5.1. Travellers

The term traveller refers to people who stay in a caravan park while on a road trip and who use a caravan, motor home, tent or privately owned vehicle, such as a bus, car or four wheel drive, for accommodation. According to Tourism Western Australia (2007) and for the purposes of this study, travellers are identified as:

- Grey nomads – older aged group (55+) on an extended road trip, typically with a caravan, that
involves travel to other states/territories in Australia;
• International travellers – overseas visitors who hire motor homes and stay in caravan parks in order to afford a longer holiday;
• Freedom seekers – younger (and some older) travellers who stay in caravan parks for short periods of time.

3.6.1.5.2. Backpackers
In this community, backpackers are predominantly young international visitors, most commonly under 30 years from the United Kingdom, continental Europe and Asia, who visit the community as part of a longer, multi-destination journey around Australia. Backpackers are budget conscious and use lower cost hostel accommodation and transportation to extend their holiday experience (Ipalawatte, 2004). The purchase or hire of an older model vehicle upon arriving in Australia also enables backpackers to car pool, which provides further cost sharing and cost saving opportunities with both accommodation and transportation. The primary motivation for backpackers to travel to the community is to earn money and/or gain an extension on their tourist visa by picking fruit or engaging in other agricultural related activities.

3.6.1.5.3. Holiday makers
In this study, holiday makers are people who visit the community specifically as a holiday destination rather
than part of an extended road journey. According to Tourism Western Australia (2007), these include:

- Families – Family holidays with children;
- Winter drifters – older aged group (55+) taking an extended, intrastate holiday;
- Intrastate holidaymakers – typically younger visitors travelling intrastate or on a short ‘getaway’.

3.6.1.5.4. Packaged tours, business and visiting friends and family

Packaged tours offer people a pre-arranged combination of travel and tourism components provided by different suppliers, such as air and/or bus travel, hotel accommodation, car rental, sightseeing, social events and insurance, but sold at an all-inclusive package price. Alternatively, business tourists are those who stay in the community for a period of 24 hours or more specifically for work or remuneration purposes. The final category of tourist considered in this study comprises those who travel to the community to visit family and friends (Tourism Western Australia, 2008).

3.6.1.6. Local people

In this study, the community sector ‘Local people’ referred to individuals who did not specifically exhibit the characteristics of the other five community sectors although still, through their experience, knowledge or occupation, have the opportunity to provide data that is beneficial to this research. Here, local people participating in this research included health professionals, teachers, tradespeople, non-
government employees, community volunteers, stay at home parents and retirees.

3.6.2. Participant numbers and recruitment

As explained earlier in 3.5.3.1, 'Community scoping and immersion', six community sectors were identified as representative of the community's population. To ensure a broad sample of views were reflected in the research, data were collected uniformly, although in different formats, from all sectors of the community. Purposive sampling, as described by Marshall (1996), Mays and Pope (1995) and Neuman (2003), was used to recruit people from each of the six community sectors, taking into consideration gender, age, occupation and tenancy to ensure a broad cross-section of community knowledge was recorded. Purposive sampling is a common strategy in qualitative research as it seeks to access information-rich cases that can provide the greatest insights into a social phenomenon (Devers & Frankel, 2000; Hoepfl, 1997; Patton, 1990; Stake, 1995, 2005, 2010). According to Devers and Frankel (2000), the aim of purposive sampling is to enhance an understanding of a selected groups' experience or develop concepts and theories to answer a specific research question.

Rather than maintain fixed participant numbers, in this study purposive sample sizes were determined on the basis of theoretical saturation or the point at which new data no longer brought additional insights to the research question (Marshall, 1996; McRoy, 1997; Palys, 2008; Stake, 2005, 2010). McMillan and Schumacher (1997) suggest that purposive sampling can take on different forms and here, network sampling was used to enable community members to nominate or recommend people within their social networks who, they believe, would add richness to the data.
Similarly, reputational or expert sampling was used to specifically source data from people who maintained a particular level of knowledge in a specific area or field. Data collection with young people at the district high school however, was conducted using typical sampling as school administrators nominated students who, they believed, would provide a balanced view of the broader student population. Table 3.12 identifies how members from each community sector were recruited using different purposive sampling methods.

<table>
<thead>
<tr>
<th>Community sector</th>
<th>Network sampling</th>
<th>Expert sampling</th>
<th>Typical sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young people</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Indigenous groups</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Agricultural industry</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Local residents</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.12: Recruitment of interview participants according to purposive sampling method

Overall, 47 interviews were held with 78 people while a further six interviews were conducted with seven people to cross reference and independently verify the data analyses. In total, 53 interviews were conducted with 85 people, the details of which are provided in greater detail now.

3.6.2.1. Interview participation according to gender and community sector membership

A breakdown of interview participants from each community sector according to gender is presented in table 3.13. Although all interview participants, other than travellers and backpackers, were considered to be local residents, for the purposes of this study, individuals who did not specifically
identify with the community sectors of young people, Indigenous groups, the agricultural industry, tourism and government agencies, were listed as local residents. People participating in non-government organisations, other than those specific to agriculture, were included in the community sector of local residents while others shared characteristics across two community sectors, which has also been included.

<table>
<thead>
<tr>
<th></th>
<th>Young people</th>
<th>Indigenous groups</th>
<th>Agricultural industry</th>
<th>Tourism</th>
<th>Government agencies</th>
<th>Local residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>6</td>
<td>5</td>
<td>5★ ★</td>
<td>12★ ★</td>
<td>3 • ★</td>
<td>11</td>
</tr>
<tr>
<td>Male</td>
<td>19★ ★</td>
<td>16★ •</td>
<td>5★ ★★</td>
<td>12 ★★</td>
<td>3 •</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>21</td>
<td>10</td>
<td>24</td>
<td>6</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 3.13: Interview participants according to gender and community sector

* Eleven Indigenous young males appear in the sectors of young people and Indigenous groups;
** One female appears in the sectors of tourism and primary industry;
*** One male appears in the sectors of tourism and primary industry;
• One female appears in the sectors of primary industry and government agency;
•• One male appears in the sectors of Indigenous groups and primary industry;
••• One male appears in the sectors of young people and government departments.

3.6.2.2. Distribution of gender according to age

Although table 3.13 demonstrates a level of participation from each community sector, and the overlap of one sector to another, it is also necessary to identify the individual characteristics of all 85 research participants to explain why each individual was invited to contribute to this study.

<table>
<thead>
<tr>
<th></th>
<th>10 - 18</th>
<th>19 - 30</th>
<th>31 - 40</th>
<th>41 - 50</th>
<th>51 - 60</th>
<th>60+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>6</td>
<td>12</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>41</td>
</tr>
<tr>
<td>Male</td>
<td>19</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>19</td>
<td>5</td>
<td>10</td>
<td>16</td>
<td>10</td>
<td>85</td>
</tr>
</tbody>
</table>

Table 3.14: Interview participants according to gender and age
Table 3.14 therefore provides a breakdown of the age of each participant according to gender.

3.6.2.3. Distribution of gender according to occupation

Progressive focusing undertaken during data collection and data analysis identified inconsistencies in the age and gender of interview participants. However, it was also determined during the community scoping and immersion that age was not considered to be an important factor other than in the selection of young people. Greater attention was given to the selection of interview participants based on membership or role within a community sector. As a result, table 3.15 provides a summary of the primary area of occupation for each participant according to gender.

<table>
<thead>
<tr>
<th>Primary occupation</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional/Trade</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Farming</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Indigenous groups</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Non-government</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Local government</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>State government</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Stay at home parent</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>School attendee</td>
<td>6</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Tourism</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Retiree</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Traveller</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Backpacker</td>
<td>7</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41</strong></td>
<td><strong>44</strong></td>
<td><strong>85</strong></td>
</tr>
</tbody>
</table>

Table 3.15: Interview participants according to gender and primary occupation
Other than school attendees, table 3.15 provides a more balanced distribution of gender according to primary occupation rather than age. The role or occupation of an individual within a specific community sector was therefore one of the key criteria in determining interview participants. The discrepancy between female and male school attendees is due to the limited capacity of the researcher to interview young Indigenous women, which is addressed later in 3.8, ‘Limitations’.

3.6.2.4. **Distribution of occupation according to tenancy**

One of the other criteria used to determine interview participants was the length of time people lived or stayed in the community, which is referred to as tenancy. This was an important consideration because, as identified by Giuliani (2003), the views and interpretations of social, cultural, physical, political, economic and environmental characteristics vary according to the length of time people reside in any one community. This does not necessarily mean that people who have lived in the region for longer periods provide more valued or valid insights into community activities or practice than others, but that observations and input at all levels offer a unique perspective that may otherwise not be available to other groups. For example, a newly arrived 40 year old, non-Indigenous person may provide a different interpretation of community attitudes toward Indigenous wellbeing than a 40 year old, non-Indigenous person who had lived in the region for 25 years. Although the length of tenancy was not a central factor in identifying interview participants, it was necessary to provide a balanced distribution of individuals who had lived in the
community for different periods of time, which is presented in table 3.16.

<table>
<thead>
<tr>
<th>Primary occupation</th>
<th>Less than 2 years</th>
<th>2 – 7 years</th>
<th>7 - 20 years</th>
<th>Since birth or 20 years or more</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional/Trade</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Farming</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Indigenous groups</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Non-government</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Local government</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>State government</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Stay home parent</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>School attendee</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>12*</td>
<td>24</td>
</tr>
<tr>
<td>Tourism</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Retiree</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Traveller</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Backpacker</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26</strong></td>
<td><strong>15</strong></td>
<td><strong>18</strong></td>
<td><strong>26</strong></td>
<td><strong>85</strong></td>
</tr>
</tbody>
</table>

Table 3.16: Interview participants according to primary occupation and tenancy

* Twelve young people attending school lived in the community all their life. Of this number, nine were Indigenous (young men) and three were non-Indigenous.

• The time period, 'All my life or more than 20 years' includes people who were born in the community, left for education or other purposes (though immediate family remained) and returned to the community at a later date.

3.7. Data analysis techniques

Qualitative research is an inductive process that develops theory from raw data as opposed to quantitative research that applies deductive or a priori assumptions to develop theory from the literature or researcher's prior knowledge of a social setting (Bernard & Ryan, 2010; Boyatzis, 1998; Byrne, 2001). This research is therefore influenced by concepts developed by Glaser and Strauss (1967) in which theory is generated, discovered and developed from data found in everyday life experiences using a
systematic process of social research. A key aspect of Glaser and Strauss' (1967) theoretical concept is the continuous interplay between data collection and data analysis (Goulding, 1999) whereby the researcher looks for and finds meaning and knowledge in the data during all stages of data collection (Charmaz, 2005; Glaser & Strauss, 1967; Strauss & Corbin, 1990). In other words, the researcher is progressively monitoring the evolving theory to ensure it is supported by evidence in the data, regardless of when the data are collected (Varkevisser, Pathmanathan & Brownlee, 2003).

The primary role of qualitative data analysis is to capture, record, interpret and convey information (Baptiste, 2001). As discussed earlier in this chapter, qualitative research generates large volumes of data, which are then condensed, coded and categorised to find patterns in that data (Boyatzis, 1998; Crabtree & Miller, 1999; Hoepfl, 1997; McRoy, 1997; Miles & Huberman, 1994; Patton, 2002). To ensure a high level of consistency and reliability in the coding, categorisation and comparison of data are maintained, Bazeley (2007) and Lewins and Silver (2007) believe the use of computer software in qualitative research to be an effective tool in the analytical process as it presents greater opportunities to develop a more complex, deeper and detailed explanation of the data (Barry, 1998; Jones, 2007; Ozkan, 2004; Wickham & Woods, 2005). Three stages of data analysis were undertaken in conjunction with the collection of data during this research, which included a thematic analysis of interview transcripts using QSR International nVivo software, the collapsing of similarly themed categories into key data themes and the diagrammatical explanation and cross referencing of key themes using Mindjet MindManager software. The methods used to perform the three stages of data analysis are now presented.
3.7.1. Thematic analysis using nVivo

In this study, a thematic analysis was used to search for themes, or patterns of information, that emerge from qualitative data to provide descriptions, insights or interpretations of a social phenomenon (Bernard & Ryan, 2010; Boyatzis, 1998; Fereday & Muir-Cochrane, 2006; Tuckett, 2004). As discussed in 3.5.3.2, 'Methods of data collection', data were collected using the ethnographic techniques of participant observation, semi-structured interviews and a review of documents and artefacts. A thematic analysis formed stage one of the data analysis process and used nVivo software to record, sort, match and link the research material. While all methods of ethnographic data collection are important, nVivo principally works best with rich, text-based data (Bazeley, 2007; Ozkan, 2004) and, for the purposes of this study, was used to identify nine similarly themed categories from the transcripts of semi-structured interviews. While field notes and memos of participant observations and a review of documents and artefacts provided supporting data, data collected here were used mostly for verification and cross referencing purposes in stage three of the data analysis. The key steps to undertaking the thematic analysis are now explained.

3.7.1.1. Text based data

Transcripts from semi-structured interviews provided the main source of data for stage one of the data analysis while descriptions of participant observations and a review of document and artefacts provided supporting data as field notes, memos and annotations. According to Bazeley (2007) and Green and Thorogood (2004), the accuracy of transcribing oral data into a written format is particularly important as the nuances and emotional overtones found in
a spoken text can often be lost in its translation into a flat form of written words. Although great attention was given to the documentation of all data in this study, particular consideration was given to transcribing semi-structured interviews to ensure a true account of the original data source was provided (Green & Thorogood, 2004).

To maintain consistency and accuracy in the collection of data, the researcher recorded interviews using written notes and a digital voice recorder to capture the oral and physical details of each interview. As it is more accurate for the interviewer to transcribe their own interviews (Bazeley, 2007; Green & Thorogood, 2004; Patton, 2002), 39 of the 53 interviews were transcribed by the researcher and, because of time constraints, a further 14 were transcribed by a professional external transcription service. To ensure that key data were not reordered or omitted during the compilation of the externally produced transcripts, each was individually reviewed, edited and cross referenced by the researcher against their respective digital recordings and written notes. Similarly, the 39 transcripts produced by the researcher were compiled within a 24 hour period from the initial interview to ensure the data remained relevant and fresh at the time of translation. Once edited and reviewed, each transcript was downloaded as an electronic document to a researcher-defined folder in nVivo in accordance with their interview date as shown in figure 3.1. Citations from interview transcripts are presented later in Chapter Four to support explanations of the themes emerging from the data.
3.7.1.2. Coding the data

Themes found in qualitative research are most commonly inductive and develop by thoroughly reading and re-reading the data (Ezzy, 2002) until patterns become recognisable and emerging themes become categories for analysis (Fereday & Muir-Cochrane, 2006). A central component of thematic analysis therefore is the grouping, categorisation or tagging of similarly themed data from differing data sources, which is referred to as coding (Charmaz, 1995; Ezzy, 2002; Fereday & Muir-Cohain, 2006). According to Saldana (2009) and Strauss and Corbin (1990), a code is an abstract representation or summative attribute for an object or phenomenon in a language-based text. More simply, coding is an analytical
tool used to identify themes within a text (Charmaz, 1995, 2005; Ezzy, 2002; Miles & Huberman, 1994). While Bernard (2006) and Fetterman (2010) define analysis as a search for, and explanation of, patterns in the data, Gibbs and Taylor (2005) and Saldaña (2009) suggest that coding enables such patterns to be identified by grouping data with similar characteristics into specific categories. Such an approach to systems of coding and analysis were adopted in this research using nVivo software.

According to Bazeley (2007), and for the purpose of this study, nodes are defined as areas or containers to store evidence of a particular pattern or category. Similarly, nodes can be described as a terminal point or connection to an expanded or branching network of other ideas or concepts. In this study, interview transcripts downloaded as documents into nVivo were stored as data sources and individually analysed to find links and connections in the data. Nodes were created using nVivo to collect data exhibiting similar features across all data sources and, just as importantly, isolate those that were unique. Rather than cutting and pasting actual documents as in earlier systems of coding, nVivo allowed nodes to collect references from their exact location in a source document. Using this format, original documents were able to stay intact while the source and location of each data segment was recorded and persevered. As such, it was possible to view coded material in its original context while passages from documents were coded to any number of different nodes (Bazeley, 2007; Saldaña, 2009).
As well as collecting data from transcripts, nodes were also used to gather supporting data from participant observations and document reviews in the form of annotations and memos. The use of these analytic tools enabled comments to be added to support or contradict any data segment appearing in a node. Such an approach also allowed the researcher to explain observations and develop theoretical ideas as they emerged. This resulted in nodes containing data from multiple sources, while others contained a single entry or none at all. Figure 3.2 below provides an example of the nVivo data nodes, which were used to collect and store data exhibiting similar features across different data sources.

Figure 3.2: Screen shot of nodes containing similarly themed data chunks on nVivo
3.7.1.3. Connecting categories

In this study, nodes were created as part of a multi-layered coding system to identify and organise patterns and categories within a hierarchical structure. NVivo refers to this structure as a tree node, which acts as a filing or classification system for nodes. As such, tree nodes depict relations and networks between categories, with the nodes acting as a point of connection or branch to other patterns of ideas. The tree node used here was developed around 10 primary interview questions and a layer of secondary questions, which was subsequently expanded to capture data associated with broad, overarching categories as shown on figure 3.3.

Figure 3.3: Screen shot of a nVivo tree node with categories, sub-categories and sub sub-categories

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A subordinate set of nodes was then created to collect sub-category data from secondary questions while a further set of nodes captured discrete and more specific sub, sub-category data arising from the patterns appearing in each sub-category.

Progressive focussing of the tree node ensured that the location of nodes were consistent and continued to fit within a logical sequence of concepts. Once all source documents were analysed and their contents coded into nodes, and nodes located in the tree node, it was necessary to review and re-arrange the data into a succinct and more manageable number of categories. An examination of the tree node identified that some categories had similar, overlapping data, which were subsequently grouped to form nine distinct categories:

- Time in the community;
- What people like about the community;
- Groups people contact;
- Organisations people contact;
- Influential people in the community;
- Ways people source information;
- Ways of providing information in the community;
- Motivation to participate in the community;
- Best ways in which people learn.

At the completion of the thematic analysis, the results were documented, which provided a further opportunity to clarify, review, assess and summarise the research data, and are presented in Chapter Four (4.2). It was during this writing period that similarities and overlaps in the data were
identified. As a result, additional analysis was required to collapse the nine categories into key themes, which are now described as stage two of the data analysis.

3.7.2. Collapsing categories into themes
Stage one of the data analysis involved a thematic analysis, which used nVivo software to identify nine categories in the research data. While these categories provided a collection of clustered data, additional analysis was required to develop a theoretical framework that went beyond providing a descriptive text to explain the relationship between categories at a higher level of abstraction. Part of this was achieved through a process of category condensation (Miles & Huberman, 1994) or category collapse (Marshall & Rossman, 1999). In stage two of the analysis, a further review of the data identified that the nine categories contained overlapping and similar concepts. These categories were collapsed into four key themes.

- Place
- Groups
- Information
- People

3.7.3. Diagrams of key themes
Frakes et al (2010), Gill (2009) and Mader et al (2008) acknowledge that diagrams are useful in providing a visual summary of research findings in both qualitative and quantitative data. At the conclusion of stage two of the data analysis, nine categories were collapsed into four key themes. However, this process did not greatly expand on the theoretical framework of this study. To assist in this process, diagrams were used to explain and demonstrate the strength of relations in the nVivo tree node and identify prevalent
nodes of data with which to piece together a conceptual view of the research (Frakes et al, 2010; Gill, 2009; Mader et al; 2008 Millen et al 1997; Varkevisser, Pathmanathan & Brownlee, 2003). As such, stage three of the data analysis used MindManager software to provide a visual description of the data.

According to Varkevisser, Pathmanathan and Brownlee (2003), MindManager is a computer based, analytical tool that allows users to organise and arrange data into visual representations of themes and categories. For Millen et al (1997), the use of diagrams to provide visual summaries reveals another layer of analysis, which assists the researcher to synthesise and develop theory from the data. In this study, diagrams were created using data contained in nVivo tree nodes to demonstrate the links between categories, sub-categories and sub, sub-categories in each key theme. Figure 3.4 provides an example of a diagram used later in Chapter Four to describe individual and community factors that motivate people to participate in community activities.

Figure 3.4: An example of a Mindjet Mindmanager diagram of a research category.
In accordance with the level of data held in each node, different coloured and formatted lines were purposely used to capture the strength of each node. Diagrams were therefore able to reveal those nodes that were dominant in the data as well as those with limited capacity. While redundant nodes were eliminated, though not lost, as influential segments of data, those identified to be more prevalent provided a conceptual focus to frame the theoretical scope of each key theme and therefore, the overall study. As a result, summaries of the diagrams provide an explanation of the unique perspective of each data category, and when linked to the literature in Chapter Two, offer a rich understanding of the conceptual view forming in each theme.

3.7.4. Data verification
As stated earlier in 3.5.3.3.3, 'Follow up interviews', at the completion of stage three of the data analysis, six follow up interviews were held with seven participants of different ages, professions, tenancy in the community and social, cultural, economic and political backgrounds. The purpose of these interviews was to ensure that the researcher's interpretation and presentation of the data was accurate and consistent. Responses from participants involved in follow up interviews were recorded and measured against the outcomes identified in stage three of the analysis. Follow up interviews therefore served as a means to independently verify and challenge the results of the data analyses.

3.7.5. Synthesis of data analyses
Once the thematic analysis, data condensation and diagrammatical representations of the four key themes were complete and verified, a synthesis of all data analyses was performed, which appears in Chapter Five (5.2). While the
outcomes from the three stages of analysis were central to forming a broad conceptual framework for this study, a synthesis of the data was required to make sense of the various stages of analytical outcomes as a whole. Further refinement of the data therefore provided a concise explanation, and gives meaning to, the research question, 'How do communities engage with new knowledge to bring about change?' It is through this synthesis process that research findings and conclusions to this study were developed.

3.8. Limitations
As suggested by Foley and Valenzuela (2005), good ethnographic research involves periods of reflexivity, whereby the researcher becomes self-aware and self-critical of their own position in their ethnographic study. According to Marcus (1994), one attribute that can assist in this subjective process of self-conscious inquiry is a competent understanding of social behaviour and social relationships. The practice of reflexivity in this instance identified that the gender, age, time in the community and social, cultural, political and economic characteristics of the researcher had the capacity to enhance or inhibit the collection of data during periods of this study. In acknowledging this, the capacity of the researcher to conduct semi-structured interviews with Indigenous women and Indigenous young women was identified as a limitation in this study.

Although approval had been granted by local Indigenous leaders to conduct interviews with Indigenous people as identified earlier in 3.5.2 'Permission from Indigenous elders', attempts to do so with Indigenous women and Indigenous young women were not forthcoming, either because interviews schedules were not practical or not appropriate. As reported earlier for example in 3.4.4.1 'Schools', two grouped interviews were conducted with Indigenous young men attending a football based
education programme at the local high school. As the school did not have an equivalent programme for Indigenous young women, a comparable cohort of female interview participants was not available. Similarly, Indigenous women employed within professional and non-professional roles were not available for semi-structured interviews because existing work, family, community and personal commitments placed significant restrictions on their time. The researcher also acknowledged that due to the historical treatment of Indigenous people by Anglo-European men as described in 3.4.2.1 'Indigenous people', it would have been inappropriate to conduct semi-structured interviews with older Indigenous women, and in some circumstances older Indigenous men, unless an extensive relationship of trust had been established.

The researcher was also mindful that Indigenous Australians are the most studied people in the world (Prior, 2007) and that typically, the same Indigenous people living in communities are continually invited to participate in non-Indigenous research projects. As well as suffering from interview fatigue, Indigenous and non-Indigenous people indicated that data collection involving Indigenous participants in this community usually consisted of Indigenous viewpoints that are derived from those who are educated, employed in senior government or community positions or articulate and fluent in English (pers. comm., 2008). Although data from these sources was invaluable in the formation of research findings, the recording of previously unheard voices in the Indigenous community was also considered to be important. While a semi-structured interview with six Indigenous artists was able to capture an alternate Indigenous perspective, the researcher recognised that in this circumstance, it would be appropriate to collect further data using other ethnographic techniques.
In the absence of a high number of semi-structured interviews with Indigenous women and Indigenous young women, participant observations, a review of document and artefacts and follow up interviews provided the researcher with opportunities to collect and verify data that would otherwise not be available. During the period of this study, the researcher was employed intermittently as a tutor of Indigenous students aged between 12 and 18 years at the district high school and was able to collect data through participant observation. An examination of documents and artefacts, such as reports, documents and newspaper articles, provided a non-Indigenous perspective of Indigenous history in the region while Indigenous art, including ancient rock art and contemporary work on canvass and bark, provided a visual description of local Indigenous histories, beliefs, stories and traditions. On these occasions, studies of Indigenous art were supported by oral explanations by Indigenous and non-Indigenous people. To ensure that the researcher's interpretation and presentation of Indigenous data was accurate and consistent, three people were purposely invited to participate in follow up interviews to verify the research findings. These participants, as described in 3.5.3.3.3, 'Follow up participants', maintain strong cultural, professional, social and personal links to the local Indigenous community.

3.9. Summary

This chapter provides a description of the research site in which this study takes place, the different characteristics of research participants, the methods used for data collection and analysis as well as the limitations encountered during this study. After an explanation of epistemological and ontological assumptions and the methodological design and justification of this study, Chapter Three described the key features of the research site with particular attention given to the characteristics of the region's history, Indigenous land ownership and sites for data collection.
Procedures and instruments used during this research were also discussed and included ethical clearances and permission from Indigenous elders while the period of data collection explained the three distinct stages of data collection namely community scoping and immersion, methods of data collection and follow up and clarification. A review of participants and sampling provided an overview of the characteristics of the six community sectors, the number and selection of research participants as well as the data analysis techniques used during this study. Limitations to this study were also explored in the final section of this chapter.

While Chapter Three provided an extensive description of the research site and data collection methods used in this study, Chapter Four reports on the results and discussion from the three stages of data analysis. In stage one, responses to ten primary questions and secondary questions, as well as field notes from participant observations and a review of documents and artefacts, are presented as similarly themed data categories. These categories are then collapsed and condensed during stage two of the analysis process with computer generated software providing diagrams of all data themes in stage three to offer a rich understanding of the complex and conceptual view of each theme.
4. Results and Discussion

4.1 Introduction

The primary role of data analysis is to record, interpret and categorise large volumes of raw data into smaller, manageable pieces of information (Baptiste, 2001; Miles & Huberman, 1994; Patton, 2003). In this study, qualitative data are analysed in parallel with data collection to take account of the themes and patterns that emerge from field notes and transcripts of participant observations, semi-structured interviews and a review of documents and artefacts (Brown & Lloyd, 2001; Hoepfl, 1997; Patton, 2003). Data analysis in this study is undertaken in three stages: a thematic analysis of all recorded data using nVivo software, the collapsing of data categories into key data themes and a visual representation using computer generated diagrams. The results of the data analyses are presented now.

4.2 Data analysis stage one: Thematic analysis

During the initial stages of this study, raw data were collected through participant observations, semi-structured interviews and a review of documents and artefacts and then systematically recorded and translated into text as transcripts and field notes. The semi-structured interviews consisted of ten primary questions and a series of secondary questions to enable participants to elaborate and provide more detail in specific areas. NVivo software was used to group and tag similarly themed data from a number of different data sources. The thematic analysis reported here provides a description of the key themes emerging from participant responses to interview questions as well as from data collected during participant observations and a review of documents and artefacts. A selection of data segments are provided throughout the first stage of the data analysis to best represent the responses from
research participants to research questions. The thematic analysis that follows forms the first layer in the data analysis process.

4.2.1 Tenancy in the community
One of the key criteria in the selection of research participants as identified earlier in 3.5.2.4, ‘Distribution of primary occupation according to tenancy’, is the length of time people live or stay in the community. This criterion is considered important to ensure the research data reflect the differing views and interpretations of the social, cultural, physical, political, economic and environmental characteristics in the community, which is likely to vary according to period of residency in the community. Such an approach values all viewpoints and recognises that observations and input at different levels offer a unique perspective that may not otherwise be available to other groups. As a result, data are collected from people who have lived in the community for less than two years (short term), between two and seven years (medium term), between seven and twenty years (long term) and since birth or for twenty years and more.

4.2.1.1 Short term: Less than two years
As discussed in 3.4.2.3, ‘Demographics’, the ABS (2007a, 2007b) suggests that 33% of the community's population are short term residents who can be identified as international backpackers, travellers or Australian citizens on specific employment contracts. As a result, people who have lived in the community for less than two years are either travelling through to other destinations or have recently moved to the area to take up positions in the workforce. Teachers, police officers, nurses and other government workers undertake short term placements to gain professional experience in a
regional and remote community with a high Indigenous population. Tradespeople, labourers and seasonal workers come to the region for short periods to take advantage of opportunities in tourism or the building of the community's infrastructure. Tourists visit the community as part of a planned holiday, for business, to visit family and friends or to earn money from some form of seasonal employment as explained earlier in 3.6.1.5, 'Tourism'. Table 4.1 provides examples from backpackers, travellers and Australian citizens on employment contracts as to ‘How long they have lived in the community?’ These citations, as well as those presented later in Chapter Four, are extracts from coded, stored and referenced transcripts of semi-structured interviews in nVivo.

<table>
<thead>
<tr>
<th>Short term residents – less than two years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International backpackers</strong></td>
</tr>
<tr>
<td>I haven't worked in 16 months, been travelling. Really want a really hard job. Fruit picking was one thing when I came to Australia – I think it’s something you can look back on in ten years’ time and go ‘oh god, remember those days? Sweating and stuff’ (C32&amp;33-08).</td>
</tr>
</tbody>
</table>

Table 4.1: Reasons for short term residents to come and stay in the community

People reside in the community for a short period of time either to meet financial and/or experiential needs before moving on to another location. This is true of backpackers
and Australian citizens who come to the community expressly to earn an income or further enhance their career development. Alternatively, travellers aim to fulfil their experiential needs by visiting surrounding tourist sites and participating in tourist activities. Here, the community meets the functional needs of short term residents who ultimately, will always call another place ‘home’.

### 4.2.1.2 Medium term: Two to seven years

While it is difficult to ascertain the exact number of people who reside in the community for between two and seven years, participant observations indicate that the percentage of the population is greater than that of short term residents. People who live in the community for a medium length of time specifically come to the region for work related reasons, although choose to extend their stay because they enjoy many of the social, financial, professional and physical attributes the community and its surrounds have to offer. One of the critical issues observed in the community for medium length residents is family. People with school aged children tend to stay in the community for between two to seven years to limit the disruption to their children’s school and social life. However, the pursuit of further employment opportunities for non-Indigenous adults ultimately results in individuals, couples and families moving to other locations as the need to fulfil financial and/or career prospects become greater than the lifestyle benefits available in the community. Employment, lifestyle and the establishment of a home environment, as indicated by table 4.2, are key factors for medium term residents in determining ‘What brought you to the community and what keeps you here?’
What brought you to the community and what keeps you here?

Medium term residents – two to seven years

<table>
<thead>
<tr>
<th>Employment</th>
<th>Lifestyle</th>
<th>Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>I’ve been here for six years. Been in the same job for six years... It’s a pretty easy place to live otherwise I wouldn’t still be here. I go through phases when I don’t want to be here... it’s beautiful but I know I don’t want to spend years and years up here. It’s pretty precious what we’ve got. Researcher - And what keeps you here? Oh, financial basically. I’ve got to work. Um, I really like living here. It makes me feel good. When I fly in to the place, I’m really glad I live here. It’s the country. I find it very healthy. It’s good for the soul (S06-07).</td>
<td>I like the place. It’s pretty, has good camping and good people except the tourists. People are usually paid well for their work though it is an expensive place to live. It has just about everything you need and it’s to get around. Accommodation is pretty bad in that rent is dear and buying a place is expensive (S14-07).</td>
<td>It is now a home. Sense of space, peace and quiet and away from a job which is pretty busy and hectic. The lack of population is good. I can come in away from the world. It is somewhere I can retreat to (S02-07).</td>
</tr>
</tbody>
</table>

Table 4.2: Reasons why medium term residents stay in the community

The data presented here indicate that the community primarily performs a functional role in satisfying employment, school and leisure needs. While medium term residents begin to form an emotional attachment to aspects of place, the desire to have functional needs met elsewhere means that individuals or families will relocate to another community in the future. Ultimately, people living in the area for medium periods call the community home, but only for the time being.

4.2.1.3 Long term: Seven to twenty years

People who live in the community for between seven and twenty years come to the region initially for work related purposes although stay for longer periods because their individual and family needs are being met by the community.
For example, participant observations indicate that long term residents who do not have a stable form of employment find work within their extensive social, professional and relative networks to generate an income so they can remain in the region. While employment and career development, lifestyle and the environment are important factors for long term residents, often it is the relational aspects of localised life, such as friendships, networks and group membership that engender a sense of belonging and an emotional attachment to place, which encourages people to live in the community for more than seven years. Data collected here also indicate that long term residents consider living in a different place during the later parts of their life. The reason for this primarily focuses on a change in lifestyle needs rather than the need to sustain ongoing levels of paid employment. Although the community has a number of characteristics that are well liked by all residents, the hot and humid climate during the build-up and wet season, as presented earlier in 3.4.1.2, 'Climate', is an annual phenomenon long term residents attempt to avoid.

While the data collected here indicate that residents continue to have their functional needs met by the community, it is their emotional attachment to place that keeps them in the region for between seven and 20 years. As indicated in table 4.3, residents who stay in the community for long periods do so because of an attachment to place or continued work and lifestyle opportunities. Long term residents therefore consider the community to be their home, but also look to other destinations to partly or fully live in the future.
Why do you stay in the community?

Long term residents – seven to twenty years

<table>
<thead>
<tr>
<th>The place</th>
<th>Home but retiring elsewhere</th>
<th>Work and lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td>It’s the place that makes me happy, whether it’s the, you know, the landscape and I suppose the river and things like that. The activities that it offers makes it a fantastic place to live but I don’t think that would be enough if I didn’t feel connected to the community in the way that I, the way I am with the, with the friends and that sort of stuff. I was speaking to my girlfriend’s mother the other night and she’s sort of recently retired and sold businesses and they’re looking at relocating and although they’ve had a fantastic business involvement in the town, she feels that her friendship group never really developed hugely so, and the way she put it was - you know, a friend asked me if I felt like inviting someone over for a wine, who would I call and she said there’s nobody, so I think you know, that’s really sad.</td>
<td>When I retire, I’m going to live out on (a plain) and I certainly won’t be living here in the build-up to the wet season. It would always be home but, financially, I’ll be in position to go and travel and do what I want to do... there is no pleasure living here in November... And especially as you get older, I’m doing it in more comfort now. We just bought this camper which slides on to the back of the ute, and we were plonked in the middle of the Tanami Desert: 40 degrees, air conditioner going and had a roast meal. I remember camping up here in a tent, mozzies, so I suppose I still enjoy camping, I’m just doing it a bit more comfortably. Instead of going down the river fishing with a screaming old 2 stroke motor and no sun shade, I go down in a bit more comfort now.</td>
<td>Work, lifestyle. The main reason we came here was the water. Having huge water issues down south and decided that with my partner living here before, this was the best place to come to find a future either with agriculture or on the land. The environment and the lifestyle are fundamental.</td>
</tr>
</tbody>
</table>

|  |
|  |
|  |

Table 4.3: Reasons why long term residents stay in the community

4.2.1.4 From birth or twenty years and more

People who have lived in the community since birth or for over 20 years have their needs met by the community. Here, Indigenous and non-Indigenous young people live in the region with family members while others do not envisage living anywhere else because of a spiritual and/or emotional

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4 A utility vehicle, sometimes four wheel drive, featuring a passenger compartment and rear cargo bed.
attachment to place. The examples presented in table 4.4 indicate that permanent residents maintain a strong sense of belonging to the region.

<table>
<thead>
<tr>
<th>Why do you stay in the community?</th>
<th>From birth or twenty years and more</th>
<th>Sense of belonging</th>
</tr>
</thead>
<tbody>
<tr>
<td>I belong here</td>
<td>Came and never left</td>
<td>My family arrived in (the community) on 5 July 1963. There was my husband, myself and four children... It’s the complete opposite to living in the city, which I never want to do ever again. I like the laid back style. I like the community effort, because there’s always been great input with community effort, even today... Only one of my family is here, and I really can’t understand people who have to go away and be with grandkids. I can’t, that’s not my scene. I like my grandkids, and I see them once a year and that’s fine. But I never want to leave... I’ve got long term friends I’ve had here for many years that I’m very fond of, and I’ve got family. But I’m also involved with other group activities as well... A feeling of being one of the community, as much as anything. A great feeling that all the little kids in town know me by name. That’s a very warm sort of feeling. Basically that’s what I get out of (living in the community).</td>
</tr>
</tbody>
</table>

Table 4.4: Reasons why permanent residents stay in the community

One of the other key factors arising from participant observations and a review of documents is the link between
property ownership and people living in the community for over 20 years. Data collected here indicate that long term non-Indigenous residents have, over the years, had the capacity to purchase large or key areas of land, particularly when the region was experiencing a downturn in its local economy. While a high number of medium to long term residents purchase land for their domestic use, it is those who have lived locally beyond twenty years who own key sections of commercial, agricultural and residential property. Although property ownership may have occurred sometime previously, the value of these assets has increased considerably, which gives some non-Indigenous long term residents access to high levels of wealth.

Young people who have lived in the region since birth have their needs met by family members and the community and do not consider leaving, other than for short periods of schooling or tertiary education and training. Indigenous elders living in the community for over 20 years maintain a strong emotional attachment to culture and traditional lands while non-Indigenous people chose to stay in the community because they enjoy the environment, the people and being part of the community or to generate wealth. Here, people who have lived in the region from birth or for 20 years or more consider the community to be home because they belong here.

4.2.2 What people like about the community
As mentioned previously in this chapter, people come to this community for work or tourism purposes but also stay for longer periods than originally anticipated. The reasons for this however,
differ for Indigenous people and non-Indigenous people and also for people who reside in the community for short, medium and long periods of time. While the environment is commonly identified by people across all sectors of the community as an important characteristic, non-Indigenous people recognise the availability of employment opportunities, social networks and a conducive lifestyle as reasons to live in the region. Alternatively, the community is located on, and surrounded by, Indigenous country and as such, Indigenous people are the traditional custodians of the land and maintain a strong spiritual and historical connection to the region.

4.2.2.1 Why non-Indigenous people live in the community
The data indicate that non-Indigenous people living in this community find the natural and physical environments the most likable quality of the region as well as the community’s remote location, the people and lifestyle. Access to natural bushlands, an abundance of water and river systems, the wildlife, a warm climate as well as landforms bordering the region provide people with a wide range of social, recreation and leisure pursuits. The importance of the outdoors and the environment is evident when viewing entries in a competition held by the community newspaper. Here, all residents were asked to submit photographic images that best depict aspects of life in the community. Of the 931 images provided, 897 or 96.5% specifically related to outdoor leisure pursuits, which are presented in table 4.5.
<table>
<thead>
<tr>
<th>Image</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water activities and water features</td>
<td>273</td>
<td>29.3%</td>
</tr>
<tr>
<td>Landscapes</td>
<td>220</td>
<td>23.6%</td>
</tr>
<tr>
<td>Sunsets, storms and lightning</td>
<td>102</td>
<td>10.9%</td>
</tr>
<tr>
<td>Native animals and insects</td>
<td>78</td>
<td>8.4%</td>
</tr>
<tr>
<td>Fishing activities</td>
<td>53</td>
<td>5.7%</td>
</tr>
<tr>
<td>Plants and trees</td>
<td>30</td>
<td>3.2%</td>
</tr>
<tr>
<td>Indigenous themes</td>
<td>29</td>
<td>3.1%</td>
</tr>
<tr>
<td>Outdoors/bush with a beer/wine</td>
<td>28</td>
<td>3.0%</td>
</tr>
<tr>
<td>Outdoors/bush family shots</td>
<td>27</td>
<td>2.9%</td>
</tr>
<tr>
<td>Camping</td>
<td>22</td>
<td>2.2%</td>
</tr>
<tr>
<td>Outback images and cattle stations</td>
<td>18</td>
<td>1.9%</td>
</tr>
<tr>
<td>Sports</td>
<td>14</td>
<td>1.5%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>12</td>
<td>1.2%</td>
</tr>
<tr>
<td>Machinery</td>
<td>11</td>
<td>1.1%</td>
</tr>
<tr>
<td>Vehicular mishaps</td>
<td>9</td>
<td>1.0%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>5</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>931</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 4.5: Themes of photographic entries in a community newspaper competition

Non-Indigenous people in the labour force identify the availability and diversity of work opportunities as the key factor in first determining whether to come to the community and secondly, how long they will stay. Although the community is considered remote in terms of its location and proximity to the state’s capital city and other major centres, it is the central hub for a number of industries that offer employment opportunities in a range of skilled and unskilled areas, as described in 3.4.2.4, ‘Industry’. Agriculture, tourism, mining, pastoralism and government industries are the most significant sectors in terms of capital investment and financial return while Indigenous and service industries also play an important role in the community. The data also suggest that
the community's remote location and long working hours enables paid employees to generate high incomes. This is particularly evident for those working at the nearby diamond mine and those holding senior positions within agriculture, forestry and government service industries.

Although the revenue generating capacity of some industries provides extensive employment opportunities in the community, the impact of internal and external market forces, global events and environmental or climatic activities can also make some industries susceptible to unpredictable challenges. For example, budgetary restrictions imposed by the diamond mine's parent company in 2008 and a downturn in the global economy in 2009 meant the loss of 600 jobs or 50% of its labour force. While these job losses mainly impact on fly in-fly out contractors based in the state's capital city, businesses in the region also experienced a significant downturn in mine related trade. Similarly, rising fuel costs and a decline in superannuation benefits caused by global economic activities influences, not so much tourist numbers, but the level of tourist expenditure in the community. While industries are capable of employing high numbers of people during peak production periods, a downturn in local circumstances or broader global markets can reduce employment opportunities and thereby remove the main incentive for people to come to, or stay in, the community.

While employment opportunities may fluctuate in the private sector, the public sector is considered to be a stable industry that has maintained a regional presence at a local, state and national level both before and since the community's
inception. These agencies offer a considerable economic contribution to the region through infrastructure spending and service delivery and as such, local employment levels remain above state and national averages amongst non-Indigenous people as discussed in 3.4.2.3, ‘Demographics’. While the environment and employment impact on the decision of non-Indigenous people to stay in the community as demonstrated in table 4.6, others recognise the importance of close friends and social networks as well as the conduciveness of the community itself.

<table>
<thead>
<tr>
<th>Why do non-Indigenous people stay in the community?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The environment</strong></td>
</tr>
<tr>
<td>It’s the lifestyle. I really love fishing and doing some walking and the recreation opportunities... like on the river, at both ends of the river, is fantastic. I guess an outdoor lifestyle really suits me, so that's why I really like it here (S17-07).</td>
</tr>
</tbody>
</table>

Table 4.6: Why non-Indigenous people stay in the community

The data presented here indicate that non-Indigenous people primarily come to the community to take up work and tourism activities. However, while non-Indigenous people choose to stay in the community because of diverse

\(^5\) Fishing for barramundi, a prized variety of Australian estuarine fish, is a popular past time in the community
employment opportunities that generate high incomes, they also access outdoor leisure pursuits and a lifestyle that they would not be able to generate elsewhere. Another important factor that enables non-Indigenous people to stay in the community is the close, supportive and trusting networks that they establish within a small but safe environment.

4.2.2.2 Why Indigenous people live in the community

Indigenous people live in the community for a range of reasons although these are not specifically work related. Instead, Indigenous people choose to live in the region within family groups because they collectively identify as traditional owners of the land. In other words, this is their country and they are with their people. Recognition of Indigenous tenure over land within and around this community, as explained earlier in 3.4.3, 'Indigenous and Western land ownership: Native Title', also enables Indigenous people to maintain a spiritual connection to traditional laws, beliefs and protocols. Although Indigenous families primarily live in the urbanised area of the community, because large water reserves, pastoral leases, mining operations and agricultural activity now occupy traditional lands, local elders, traditional leaders and Indigenous people still maintain a spiritual connection to country. As indicated in table 4.7, Indigenous people choose to stay in the region because of strong cultural ties, family ties and community ties.
<table>
<thead>
<tr>
<th>Cultural ties</th>
<th>Family ties</th>
</tr>
</thead>
<tbody>
<tr>
<td>It’s my tribal area, you might say. My mother’s families go back centuries.</td>
<td>Family, they won’t go. They will never go somewhere else (G25-08).</td>
</tr>
<tr>
<td>the history. Not here, but not far from here, where the... river flows past the... homestead. I grew up there mainly. We used to go like the (traditional) people that got pushed out of stations because the award wages came into play. We got moved into town and they couldn’t afford to pay a lot of families to live at the station and feed the family out there. So we wanted to come in town you know (S28-08).</td>
<td></td>
</tr>
<tr>
<td>Community ties</td>
<td></td>
</tr>
<tr>
<td>It’s small and safe. That’s my opinion.</td>
<td></td>
</tr>
<tr>
<td>Good fishing hole.</td>
<td></td>
</tr>
<tr>
<td>Yep, my whole country.</td>
<td></td>
</tr>
<tr>
<td>The environment is cleaner.</td>
<td></td>
</tr>
<tr>
<td>I suppose it’s not too big you know.</td>
<td></td>
</tr>
<tr>
<td>Small and safe.</td>
<td></td>
</tr>
<tr>
<td>We’re all related at the table.</td>
<td></td>
</tr>
<tr>
<td>Yeah this is home (G31-08).</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.7: Why Indigenous people stay in the community

The data suggest Indigenous people stay in the community due to a cultural and spiritual connection to traditional lands, which brings with it close ties to immediate and extended family members. Both factors therefore contribute to the generation of long term links to the community, which indicates an emotional attachment to place.

4.2.2.3 The importance of place

At the time of this study, over 90% of research participants, other than tourists, did not want to reside anywhere else. This view is consistent across all sectors of the community regardless of age, gender, social and cultural background, employment status or longevity in the community. However, participant observations and a review of documents and artefacts indicate that short, medium and long term residents
still give consideration to living elsewhere at some point in the future. Parents acknowledge that a move to a larger urban setting may benefit their children's education while others, although still enjoying their lifestyle and work prospects, contemplate relocating if new opportunities arise in another locality. Unlike Indigenous people who never want to leave traditional country, non-Indigenous people are ambivalent about future destinations or speak of relocating because of factors relating to work or retirement as indicated in table 4.8.

<table>
<thead>
<tr>
<th>Would you rather live somewhere else?</th>
<th>I am part of the country</th>
<th>It suits me for now</th>
<th>Where else would I go</th>
</tr>
</thead>
<tbody>
<tr>
<td>I live here, I belong to the country.</td>
<td>I need to be here because of my work and if I was to move, it would mean more travel. It suits me this life for now.</td>
<td>Sometimes people from home say 'what are you still doing up there?' Well, if I had to move anywhere else, I can not think of one place that I would love as much with the same opportunities, the same money, I would have neighbours banging on the wall. So more than anything, it's the lifestyle.</td>
<td></td>
</tr>
<tr>
<td>Everything is approachable, from getting through the next day to life in general. I don't need to adapt to anything because I've already been bred into this country... I think the answer is the protocol, the ten commandments, like the handing down from generation to generation about how we run the system, how the laws meet the means, and how to go about day to day duties when you are an Indigenous person. And it's still here today. That's what following the protocol is - this big family tree. It's been working for thousands of years and it's still here today. I think a lot of Indigenous people know about it, it's just a lot of people have to start getting back to it and using it.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8: Why people do not leave the community

200
Data here indicate that non-Indigenous people primarily maintain a functional relationship with the community because the existing social, economic and physical environment provides and sustains a lifestyle and livelihood that would not be available in other locations. Conversely, Indigenous people maintain an emotional attachment to place because of strong cultural and historical connections to country, family and traditional protocols, beliefs, laws.

4.2.3 Groups people contact in the community
Participation in group activities is an important component to living in the community. Here, people regularly connect with a variety of groups including those associated with sport, leisure, children’s programmes, the work place, community events and tourist activities, which supports a sense of social and emotional wellbeing. Similarly, group membership and participation brings with it opportunities for individuals and families to give something back to the community.

4.2.3.1 The formation of groups
The primary motivation for establishing group membership in this community is to build friendships and socialise with other people with similar interests, experiences, work activities or past-times. Sport for example, is often used by new, visiting and existing residents to mix with other people, to exercise and to create personal enjoyment. Activities involving Indigenous and non-Indigenous young people and children also provide opportunities to socialise in groups. Mothers in particular, acknowledge that their social circle is broader as a result of the close relations they form with other parents.
involved in similar activities at local schools, child care centres or sporting events. Ultimately however, people come together because they share a number of personal or common characteristics, which encourages the exchange of information and the development of trusting and reciprocal relations. People in this community, form friendships around shared social, moral or ethical attitudes, life experiences, family relations, age groups, longevity in the town or similar interests in sports and outdoor activities. Here, close bonded ties and friendships are not only essential for an individual’s social and mental sustainability, they also bring about much broader feelings of acceptance, reciprocity and trust. Table 4.9 provides examples of the groups people associate with and some of the benefits they receive as a result of their membership.

<table>
<thead>
<tr>
<th>Can you tell me about the groups you associate with or participate in?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sporting groups</strong></td>
</tr>
<tr>
<td>I’ve been playing a little bit of sport but I’m very unsporting so I’m much more interested in the social side of it rather than the sporting side. I played indoor cricket in a women’s team this year and it was hilarious. We were so crap but we had so much fun and we’re so keen to go back again next year (S17-07).</td>
</tr>
</tbody>
</table>

Table 4.9: Group formation around sports and children’s activities

While groups form around sport, children’s activities and amongst people with like-minded attitudes and interests, the workplace is one location that enables people to develop
professional and social relationships, especially when first arriving in the region. One of the key observations of this community however, particularly but not exclusively amongst non-Indigenous men within local service, tourism, mining and agricultural industries, is the close link between groups and the consumption of alcohol. For example, one organisation servicing the mining, agricultural and associated industries maintains a policy that any customer entering their premises after 4pm during the working week is offered a can of beer. Customers and staff recognise this to not only be an appropriate way to relax at the end of the working day, but also as a highly valued opportunity to informally build relationships and find out the latest news within their industry and broader community. Similarly, social networking and information exchange occurs at the public bar or at industry meetings where alcohol consumption is considered to be an essential aspect of a gathering. Tourists also meet in caravan parks or at backpacker hostels with alcohol to share information about past and forthcoming aspects of their travels. Table 4.10 provides a sample of resident responses to the interview question, ‘Can you tell me about the groups you associate with or participate in?’, which include workplace situations and the consumption of alcohol and, for tourists and backpackers, how group formation relates to the sharing of mutually beneficial tourist information.
Can you tell me about the groups you associate with or participate in?

<table>
<thead>
<tr>
<th>Group formation in the workplace</th>
<th>Groups formation and alcohol consumption</th>
<th>Group formation and tourists</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think a lot of my friendships started off as work related things... definitely at the start, I remember when I first got here I was so flat out at work and the only people I was meeting was the farmers, which was great... but now at least I'm branching out and can go to parties that last longer than nine o'clock at night because that's when they (the farmers) all go home and go to bed ($17-07).</td>
<td>All meetings end in beer, seriously. By having an afternoon meeting and by putting on a couple of cartons of beer, snags (sausages) and some bread. Half hour meeting and then the next three hours is sitting around talking. Everybody's there, even if you don't know them, they all come from the same background. It reinforces relationships and is the best way to exchange information... You have a 10am meeting or a 4pm meeting and the turnout would be entirely different. There was a safety meeting recently; no beer, no one stayed around ($07-07).</td>
<td>If you meet backpackers, I used to ask them 'Have you travelled the west coast or do you have any favourite spots or places you can recommend?... It's a really good way actually, especially if they can show us some photos as well... We talk about some of the places they have been visiting, like we share as much information and stories as possible... But as we're travelling around, I would recommend this and this. It's actually good because you don't get that sort of information from the internet so that's really good. You don't get that real honest information (C20&amp;21-07).</td>
</tr>
</tbody>
</table>

Table 4.10: Group formation in the workplace and alcohol consumption as well as amongst tourists

The data presented here suggest that people form groups to have fun and develop relations amongst others who share a common interest, work place or activities involving networks of family and friends. Alcohol consumption is a notable component to group structures across all community sectors, even amongst some groups of young people. However, one of the notable characteristics of groups is that they become a means to successfully exchange information.

4.2.3.2 Linking to existing groups

The data collected during participant observations and semi-structured interviews indicate that people, especially new residents to the community, are self-motivated to seek out social, community, professional or sporting groups. For
example, one senior police officer acknowledges that newly stationed officers join one of the local football or sporting clubs to not only establish new relations with local people but to also establish different relations with local people; one that is based on team membership as opposed to being seen as a ‘fresh-faced’ police officer. Similarly, social evenings at the local tennis club attract visitors and new residents seeking social contacts in a sporting environment.

While short term residents tend to be self-motivated to source information on local groups, other residents rely more on their personal contacts within their social and professional networks. According to the data, longevity in the community and the active exchange of information in social networks (word of mouth) are most effective in finding out about social, community, professional or sporting groups. While people maintain contact with their social or sporting groups at least one occasion each week, those meeting in more business orientated networks tend to come together on a monthly basis. Indigenous and non-Indigenous young people however, maintain contact with key members of their social, family or sporting networks on a daily basis and for Indigenous young people, these groups may very often be one and the same. This data therefore suggests that people visiting or newly arrived to this community are self-motivated to source information about local groups while other residents tend to utilise their social and family networks to develop links to, or gain knowledge of, community, sporting, professional, school or other groups across the region as demonstrated in table 4.11.
### How do people develop links with groups?

<table>
<thead>
<tr>
<th>Family networks</th>
<th>Self-motivated</th>
<th>Social networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>They’re family (other research participants), all of them, all my cousins.</td>
<td>Get out and socialise and you’ll get out and meet people. The best way to meet people is through sport, particularly in a country town. One way to be accepted as part of the town is to play sport - not only for yourself, but for work colleagues, for fitness and for your family. They get to socialise too (S04-07).</td>
<td>I just tend to know things are going on. I’ve been here for 20 years and have moved in different circles career wise and interest wise. I have broad interests... I just like that bigger picture and understanding the whole picture and the interaction of everything (S05-07).</td>
</tr>
<tr>
<td>We catch up every day... we just hang out, we like each other, do the same things, grow up together, go up (to a local lookout) together. Go to same school, play footy together, family. (We go) swimming... and hunting... out to (a local cattle station), lots of bush tucker, lots of kangaroo and goanna (G26-08).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.11: People develop links to groups through family ties, social networks and self-motivation

#### 4.2.3.3 Benefits of group membership

Research participants recognise that there are key benefits to group membership and participation, the most notable of which is gaining a strong sense of belonging. Here, maintaining feelings of acceptance within an inclusive and safe setting is a fundamental reason why people develop and maintain links with groups or social networks, which in turn offer positive feelings about their position in the immediate and broader community. Others recognise that close connections with a group also provides a positive mental state and increases personal coping behaviours. Non-Indigenous people particularly identify that close connections to groups and social networks provides opportunities to form strong friendships, which act as a surrogate family to share celebrations or provide support as the examples demonstrate in table 4.12.
What is it that people get out of being part of a group?

<table>
<thead>
<tr>
<th>Acceptance and belonging</th>
<th>Personal support</th>
<th>Surrogate families</th>
</tr>
</thead>
<tbody>
<tr>
<td>It makes me feel normal and to feel like other people. To talk, laugh, have a joke. It’s part of the culture of the town. It’s [the town] very isolated so it’s important to be able to talk freely. It’s good for self-confidence and you don’t feel like an odd bod. I feel accepted nine out of ten times, which gives me some peace of mind... takes my mind off other things (S14-07).</td>
<td>I guess that’s what saves you from going nuts... Being part of a group keeps you connected I suppose – what keeps you grounded. People are fairly gregarious; they don’t live in isolation from one another. If you have those strong friendship groups then they get you through the rough times; personal trauma and deaths. It’s more than just socialising (S03-07).</td>
<td>Because we’ve been here for ten years, which isn’t really very long but probably long for (the community), people know that you’re there to support them if they need it and you know that others will be there to support you, which is important in any country town. It’s stability but also a lot of people up here don’t have family so, in times of need, people tend to rely on you to help them through as well as they’re there for special occasions (S16-07).</td>
</tr>
</tbody>
</table>

Table 4.12: People develop a sense of belonging and acceptance, personal support and surrogate families from group membership

The transient nature of the community's population however, also has an impact on the formation of friendships and groups. Non-Indigenous people who have lived in the area for longer periods acknowledge that the departure of close friends is similar to losing a family member. Children find it particularly difficult to deal with the regular loss of friends as well as pseudo aunts and uncles. Similarly, newly arrived or short term residents express some difficulty in developing relations with people who have lived in area for longer periods of time. Short and medium term residents suggest that there is an underlying assumption that new arrivals will only stay in the community for a limited period and therefore, the time and energy required to develop close relations is not worth the personal investment. For some, this can lead to feelings of isolation and exclusion both from specific groups...
and within specific groups as the examples in table 4.13 indicate.

<table>
<thead>
<tr>
<th>Loss of close friends</th>
<th>Difficulty in forming friendships</th>
<th>Exclusion and isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends become family though a number have started to leave over the last couple of years. A lot of people don’t stay that long which is hard for the kids as there is a loss of friends all the time (S15-07).</td>
<td>One thing that we’ve got used, even though there are a number of people who have lived here for a long time, we have a huge transient population so we get used to people being here today and gone tomorrow. I know when I first came here four years ago it took me a while to cotton to the fact that people were very polite, but when I really got to know them, they said they were never sure whether to give me a lot of time and attention, knowledge and friendship because ‘we’ve seen so many of your kind before’. I’ve struck that numerous times when people say in the nicest possible way because every relationship takes an effort, it takes years to build. Where there is a chance that you’re not going to be here for long, people will be nice to you but they don’t really want to be close (C12&amp;13-07).</td>
<td>The golf club is an interesting group, especially those who have been here a long time. Being an outsider, though I’ve been here for two and a half years, I haven’t been here long enough to be accepted, particularly with the skill levels I don’t have. I get to socialise with all the visitors and all the D graders. Maybe if I was an A grader it would be different. It is obvious (S04-07).</td>
</tr>
</tbody>
</table>

Table 4.13: The impact of group formation in a transient community

The data suggest that there are both benefits and obstacles to group interaction in the community. While close bonded friendships within social networks can provide personal support and a sense of acceptance and belonging, short term residents find it difficult to gain membership to established groups comprised of long term residents. Similarly,
the regular departure of people from the community means the continued loss of relationships with past residents and the regular formation of new friendships with recent arrivals.

4.2.3.4 Reciprocity in groups
While previous sections in this chapter discuss the personal benefits that result from interactions and associations with different groups, the data also suggest that individuals are prepared to offer something in return to those groups important to them. Contributions can include an investment of personal resources such as skills, time and expertise, physical resources including the use of vehicles, property or machinery and economic resources such as cash or credit. Other people highly value the friendships they form in groups and acknowledge the existence of close inter-personal bonds, which generate feelings and actions that promote a reciprocal exchange of support, information and companionship. Like the more permanent residents in the community, travellers and backpackers also demonstrate a willingness to exchange and reciprocate information with other tourists. The motivation for this however, is not the result of close bonded ties often found amongst friends, but instead because of the mutual exchange of information may be of benefit to either or both parties in the immediate or long term future.

While it is recognised that non-Indigenous people offer back to groups their personal, physical and economic resources, Indigenous elders, traditional owners and Indigenous people also share their local and cultural knowledge with Individuals, families and Indigenous groups. The most notable here is the
sharing of stories about the 'Dreamtime' to Indigenous young people and children, as well as to non-Indigenous people in schools or fee-paying workshops, to explain the ancestral creation of local lands, its people, animals and plants. Indigenous elders and leaders believe the transfer of traditional knowledge from one generation to another is critical in the continuation of Indigenous culture. An example of this is found in traditional language, which is still used in the community across different Indigenous age and family groupings. The exchange of local knowledge not only supports young Indigenous people's understanding of traditional rituals, laws, beliefs and protocols but also indicates that traditional information is still being passed down from one generation to the next, albeit less frequently.

The data suggest that people establish reciprocal relations within their social networks and volunteer their personal, physical, economic and cultural resources to the groups they belong to. In doing so, trusted, and reciprocal interactions amongst group members enable individuals to contribute to the establishment, maintenance and adjustment of social values, norms, beliefs and understandings within their social networks. In return for this, people maintain a sense of attachment and belonging within a safe group of people with shared interests and views. Evidence of this is presented in table 4.14 whereby group membership encourages the reciprocal exchange of personal resources, such as information, skills and time, cultural resources, including cultural knowledge and also physical and economic resources.
### What people offer back to groups

<table>
<thead>
<tr>
<th>Skills and time</th>
<th>Information</th>
<th>Cultural knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>The golf club only has a small membership. I have a few computer skills so I became the secretary to help out and contribute. I was wanting to contribute. I’m not a great golfer so I thought I could help out... I do it not only to socialise, but to be accepted, contribute and gain a sense of belonging (S04-07).</td>
<td>We can get some information from people about where they have been and where they are going to next... They can tell us about where to go to next. For instance, we’ve been told to go to (one national park) rather than (another national park) because you have to drive a long way and there are only a few things to see once you get there. The same with (a local national park). Some have told us which gorges to go and see. And we do the same back - tell people about the places we’ve been to (C37&amp;38-08).</td>
<td>I have a name in the white man’s English. But in the black man English, I’ve got a skin name, I’ve got my Dreaming of my animal name... It’s up to me to learn it now. So before I die I want to learn it all. That’s part of something that will fulfil me, make my circle complete. That I know where my mother really came from, who my grandmother was... then I pass on that knowledge (to my children). How they should speak, when it comes to speaking for their mother or grandmother or country, or just in general. Give them a sense that they’re not lost, they’re found. (They) belong to this mob, the grandson of this lady... it’s mostly giving something back. That’s what I want to do... I do a lot of hunting with my family, my boys and girls. That’s teaching them about skills on hunting and camping and fishing... they pick up a lot of skills. And it’s kind of how it is... looking around the country, trying to teach them about bush foods, trying to get them interacting with the bush (S27-08).</td>
</tr>
</tbody>
</table>

Table 4.14: Group membership supports the sharing of personal and cultural resources

#### 4.2.4 Organisations people contact in the community

For the purposes of this study, ‘an organisation’ differs from previous descriptions of ‘groups’ as described in 4.2.3. Here, the concept of an organisation refers to the formal or structured entities that exist in the community and include local, state and national government...
and non-government agencies as well as commercial ventures in the private sector.

4.2.4.1 Organisations people contact

The data suggest that people develop relations with a range of different organisations in the community, most of which are related to work or family situations such as schools or child care. As a collective cohort, state government agencies are more often contacted by people than any other organisation in the community and include the providers of health services, education, agriculture, regional development, environment and conservation, water, housing, police and Indigenous affairs.

Data collected during semi-structured interviews indicate that of all government agencies in the community, people are in most contact with the Catholic primary school or combined district primary and high school as well as the Parents and Citizens Association. Although the district primary and high school is particularly prominent, especially with students and parents, it is with a mix of positive and negative responses. While it is believed that the quality of education in the community is improving, parents of young people also believe that a number of senior students leave the community to complete their Tertiary Entrances Examinations (TEE) at boarding or other schools in capital cities or regional centres. However, while participant observations suggest that long term residents are more likely to send their children to boarding school than short to medium term residents, interviews with six female and seven male high school students indicate that not one participant was expecting to
relocate to an urban centre to complete their TEE and similarly, did not know of others in their school year who were contemplating such a move. Contrary to the views of parents, young people prefer to stay in the community to complete their schooling if, for example, their parents were to move away.

The local government authority or the Shire is also an organisation that is recognised by local community members although many acknowledged that they only knew of the Shire rather than had ongoing contact with it. Medium and long term residents are more likely to be in contact with local business and industry groups, primarily related to fulfilling roles within their own employment or addressing other professionally related issues, such as the Chamber of Commerce and Industry, the district co-operative, land, water and irrigation regulatory bodies, the local visitor's centre (tourist bureau), tour operators and local supermarkets. Similarly, non-government organisations such as Legal Aid as well as environment and development groups were also given some consideration by local people.

While local people maintain regular and formal relations with work-related agencies, data collected during this study suggests that people place high importance on community-based organisations linked to leisure and out of work activities. Organisations such as Rotary and the Lions Club raise funds for community related initiatives while sporting groups offer people opportunities to recreate, socialise and meet new people. However, of all community based organisations identified during semi-structured interviews, the
agricultural society and Toadbusters gained the most attention from residents. The local agricultural society is a voluntary group responsible for coordinating the annual agricultural show and is well known amongst medium to long term residents. While this event celebrates the region's agricultural industry, it also offers people an opportunity to socialise and share news and information with others, especially those living on cattle stations in remote parts of the region. The second community organisation to gain high recognition across the community is the Toadbusters group, which raises awareness, applies for funds and recruits community members to participate in weekend events to slow the migration of cane toads into the state.

Indigenous and some non-Indigenous people also contact local Indigenous organisations including Indigenous medical and health services, an Indigenous peak body for traditional owners, the language and cultural centre, the Indigenous community arts centre, the local land council and providers of local Indigenous employment programmes. Travellers and backpackers also make contact with a number of local organisations, the most notable being the town's two supermarkets, which are visited to purchase food and alcohol as well as view the community notice boards at the front of each venue. The visitor's centre and tour operators are well patronised, particularly by travellers and holiday makers who are planning tourist activities in the community and surrounding districts. While travellers tend to use their personal laptop and wireless internet technology for electronic communications and information gathering, backpackers prefer to use any one of the three internet cafes in the
community. However, of all the organisations identified by backpackers during semi-structured interviews and participant observations, the most regularly identified was a local employment agency or 'job shop'. Upon arriving in Australia, backpackers issued with a holiday work visa register with an employment agency, which in many cases determines their initial travel arrangements. Table 4.15 provides examples of the contact residents and visitors have with organisations such as the local school, community organisations and employment agencies.

<table>
<thead>
<tr>
<th>Contact with organisations</th>
<th>Community organisations</th>
<th>Backpackers and organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young people and school</td>
<td>The agricultural society is quite strong. There are others too. Things like Toadbusters. They're a surprising organisation. It has an incredible level of community support (C12&amp;13-07).</td>
<td>Researcher - Why did you come to the community? Because Grunt Labour Services said to come. It was the only place that they said. It's always that first step having someone to direct you but if we wanted to travel to another farm now in one month, we don't have to go to any service... because we have all that information from other backpackers (C20&amp;21-08).</td>
</tr>
</tbody>
</table>

Table 4.15: Organisations contacted by residents and visitors in the community

The data suggest that people maintain formal and professional relations with the organisations they contact in their work environment and mild to weak ties with those people employed within those services. Although the community has a population of 5,619 (ABS, 2007a), the transient nature of the workforce means that a high staff turnover in many organisations makes it difficult for people on the outside of these organisations to form relations with
people on the inside. People also recognise that their contact with specific organisations in the community is purposeful. In other words, people are motivated to initiate contact with an organisation to receive a distinct service, whether it be information, advice, goods, utilities or support. However, examples provided during semi-structured interviews indicate that some informal relations occur between people on the inside of organisations and people on the outside of those same organisations when close ties form outside the work environment either through sport, mutual friends, mutual interests or alcohol consumption.

In some circumstances, such as working in remote communities, the formation of close and informal relations between people on the inside of organisations and people on the outside is essential if effective and efficient work practices are to take place. In these situations, close relations are considered important in accessing companionship, support and some mental relief during and after work tasks.  

*I have very strong ties with some people I work with. We all work in remote areas... it's what keeps you going. Those people look after me and provide me with my basic needs so it's easy to form strong bonds with them. Trust and reciprocity are an essential part of these relationships* (S02-07).

**4.2.4.2 Influential and important organisations**

Data collected during semi-structure interviews, participant observations and document reviews suggest that local people believe certain organisations in the community have greater prominence or influence than others. However,
organisations assumed to be influential, other than community based agencies, do not correspond with those most frequented by people as explained in 4.2.4.1 'Organisations people contact'. This suggests that factors, other than personal or work-related connections, influence people's perception of an organisation and the role it plays in the community. For example, while the high school was visited often by local people, it was not seen to be influential in the community. Alternatively, the Shire was not particularly well frequented but was identified to be one of the more prominent organisations in the community, albeit with some ambivalence.

The local government authority is seen to be an organisation of some importance, although people also acknowledge that they know little about the Shire or the role it plays in the community. Conversations with residents, attendance at public meetings and a review of articles in the local newspaper indicate a mixed view of the decisions and actions undertaken by Elected Members and Council staff, particularly the ability to plan for and make transparent decisions about the future development of the region's infrastructure, service delivery and administration. For example, an article appearing in the community newspaper on January 2009 stated that:

In October last year, the council moved to offer... a company owned by a local businessman... a 10 year lease with the option of a further 10 year extension over a portion of (land overlooking a central lagoon)... In a special council meeting on December 22, the October motion was rescinded... (The Shire president) said the
decision by the majority of councillors to rescind the long-term lease was most likely due to the level of public dissention. Council minutes reveal that a total of 165 submissions were received during a four-week public comment period... Ninety per cent of public submissions opposed offering a long-term lease to (the company) (Dyer, 2009, p.1).

However, in the period since the completion of semi-structured interviews, participant observations indicate that community awareness and satisfaction in Shire activities has increased, especially around activities relating to the expansion of the regional irrigation system. Residents in the community, particularly those who live in the area for two years or more, also reflect positively on the role played by a number of agricultural and environmental organisations including the district co-operative, Toadbusters and land, water and irrigation regulatory bodies. Toadbusters is especially prominent because, as a volunteer group, it is able to generate widespread interest and awareness in cane toads while securing substantial financial, physical and human resources to address the threat of a cane toad incursion. The district co-operative is also identified by long term residents as an influential organisation because of its historical association with the community. In the early years of the area's development, the co-op was responsible for providing a number of key services such as the first supermarket as well as the purchase and operation of the wharf in the nearby port community.
These examples, together with participant observations, suggest that organisations are viewed to be important if their actions address a specific or any number of community issues. In terms of government organisations, the agencies responsible for conservation and the environment, health services and economic development are noted as influential because they are seen to be participating in pro-active initiatives aimed at addressing the social, physical, economic and environmental needs of the community. The department responsible for agriculture is also mentioned, although with a mix of positive and negative statements. Similarly, the expansion of commercial forestry plantations in the region has seen some prominence given to sandalwood growers although people, particularly long term residents, still maintain some reservations as to what impact an escalation in the industry will have on the broader community.

While there is support for new investment in the area, growers and community members believe that sandalwood will soon dominate the region because plantation companies are primarily funded under Managed Investment Schemes\(^6\) (MIS). Organisations supported by these initiatives have access to high financial reserves, which allows them to purchase or lease land and infrastructure that would otherwise be used to grow a variety of food produce. Unlike other commercial agricultural operations that require a seasonal, unskilled and intensive work force to pick fruit and/or vegetables, residents assume that sandalwood plantations require a more specialised staff and therefore offer limited employment.

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\(^6\) Managed investment schemes enable investors to pool money into an independently managed enterprise (such as a sandalwood plantation) to gain a long term financial gain through tax benefits (ASIC, 2008)
opportunities to transient workers and backpackers. However, participant observations involving senior managers from the two largest sandalwood organisations in the community indicate that short and long term employment opportunities within the forestry industry are high and that MIS parent companies plan to continue to invest in the community.

While there is some ambivalence towards forestry organisations, data collected in participant observations, document reviews and semi-structured interviews indicate that the diamond mine is considered to be one of the more important, influential and respected organisations in the community. According to residents, this is due to the number of people the mine directly and indirectly employs, the revenue it generates across the region, the royalties it provides to surrounding Indigenous communities and the public donations it offers to community events, groups and services. In terms of tourism, the local visitor's centre is considered to be a valuable community organisation, especially by tourists. This visitor's centre is widely used by newly arrived residents and tourists to the community to source information on a range of sites and activities while a booking service, operated by the centre, is widely utilised to arrange local tours, community events as well as intrastate and interstate bus travel.

Local Indigenous and non-Indigenous people also recognise a number of influential Indigenous organisations, particularly peak Indigenous lobby and administrative groups, the local language centre, employment and social service providers,
the Indigenous community arts centre, the Indigenous radio station, Indigenous medical and health providers and the women’s crisis centre. Table 4.16 provides a cross section of examples that represent responses to interview questions about the prominence of organisations in the community.

<table>
<thead>
<tr>
<th>Influential and prominent organisations in the community</th>
<th>Government agencies are (and are not) influential</th>
<th>The Visitors Centre and Diamond Mine</th>
<th>Indigenous organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Ag. Department would come last in prominence in terms of government services. I think they are seen as a bit of a dying breed. They have less and less money and people and so they are able to produce less and provide less services... when you start losing those services, people stop using you in favour of consultants who contract out and offer whatever you want to do. You got to pay but they get it done and at least someone has made a decision or has an opinion. It is very difficult for the Ag. Dept. to either a) have people to do a job outside their own project and b) be allowed to make a definite decision because their head is on the line (S16-07).</td>
<td>The visitors centre is important. Tourism is still growing in the town. The (diamond mine) is one of the main sources in town particularly with the mining boom. They can pull a lot of strings... Every town is a small economy and I suppose it’s those who invest money into it. Employment is a huge issue. Mining and tourism are the main industries. Agriculture doesn’t have the same push any more. Mining and tourism are easily the biggest. Tourism industry still relies on agriculture - backpackers rely on agriculture for work... I suppose there is an interdependent relationship. A synergy (S08-07).</td>
<td>Well the language centre for instance is a learning curve for all young (Indigenous) kids in (the community) as well as they assist us when we need someone for (traditional) spelling corrections and stuff. They also help out the community – the two (Indigenous) communities that are based here in town. So they do a whole lot of helping out. (An Indigenous corporation) they help a lot. So when we have our Christmas break up they’re assisting in helping us. They volunteer so they don’t charge us at all either. So they’ve been a huge help (G31-08).</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.16: Organisations that are (and are not) believed to be important and prominent in the community

4.2.4.3 Why are organisations important or influential?

Data collected during semi-structured interviews indicate that organisations are considered to be important and influential if they voluntarily make a social, cultural, physical, political, economic or environmental contribution to better the community. However, those organisations making financial
donations to specific events for self-promotion are seen to be operating in their own self-interest and are therefore not considered to be influential. Instead, people attach greater value and meaning to those collaborative actions that involve individuals, groups and organisations to, for instance, re-turf a school oval, conduct a junior sporting event or raise funds to purchase new library books. The diamond mine for example, is considered to be a valuable and influential organisation, primarily because it maintains a strong economic presence in the region and invests in a broad range of initiatives and activities, such as medical suites, Indigenous employment schemes, annual festivals and sporting events, that contribute to the well-being of local residents and the broader community.

Organisations responsible for decision making, the provision of essential services or entrusted with legislative responsibilities, such as the Shire and government agencies, also have the capacity to be important and influential. However, local people recognise that if these organisations do not fulfil the roles and responsibilities assigned to them or do not respect the needs and input of local people, opinions about their capacity to make decisions for the best interests of the community diminish. Although attention is often directed toward an organisation, as a whole, and the role it can play in the community, data collected here indicate that the outcomes achieved by organisations can be the responsibility of one or two individuals. These people, usually in key positions, can provide leadership, energy and direction within an organisation, which can stimulate action to bring about social change in the broader community.
For Indigenous and non-Indigenous young people, as well as other residents, the interface or location an organisation has with the broader public also determines the level of influence or prominence they have in the community. For example, the leisure and aquatic centre is considered to be important as it is a popular meeting point and venue for events while also providing information on forthcoming sporting, social and community activities. Schools in the community use the facility for regular physical education programmes while young people are especially encouraged to participate in organised, out-of-school recreation activities including martial arts, indoor soccer, basketball, squash, dance and gymnastics as well as casual and unstructured use of the swimming pool.

Indigenous adults and young Indigenous people also value organisations that advocate and represent Indigenous people and Indigenous communities. For instance, one Indigenous body has been given the legislative responsibility to provide advice and administer funds issued to Indigenous communities across the region under an Indigenous Land Use Agreement as discussed earlier in 3.4.3, 'Indigenous and Western land ownership: Native Title'. The language and cultural centre and Indigenous community arts centre are also recognised as key organisations because their primary focus is on the promotion and maintenance of traditional language and culture. Similarly, the Indigenous radio station is highly regarded in its capacity to communicate music, news, weather and information within a 300 kilometre radius of the community. As well as these organisations, an established independent supermarket is viewed as important.
and influential because it provides regular donations and contributions to community events as well as support for Indigenous people in outlying communities. Table 4.17 provides an example of some of the factors that determine whether an organisation is considered to be important or influential in the community.

<table>
<thead>
<tr>
<th>Legislative responsibility</th>
<th>Betterment of community</th>
<th>Interface with residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>They (the Shire) have the ear of the government. On a local level, they often have a handle on what’s happening in the community and where the areas of need are, especially unfulfilled ones... they are accessible to local people. Local people can actually work or serve on these bodies so they can become their own voice. (C11&amp;12-07).</td>
<td>Relationships will develop dependent on whether that person or organisation is heading in what we perceive to be a useful way for the (region), for the betterment of the (region)... It is important to look behind the scenes to see what is achieved. There is a difference between those who think and those that are (influential and important). Doing the doing rather than talking the talk (S5-07).</td>
<td>The leisure centre has a lot of things going on down there. It’s a centre for people. It’s where people meet. There is all different stuff in the hall like functions, parties and every now and again, disco’s. Same with swimming at the pool - school carnivals... it’s an important place for young people to hang out and just do what they want to do (S19-08).</td>
</tr>
</tbody>
</table>

Table 4.17: Factors that determine whether an organisation is important or influential

Information discussed in previous sections of this chapter suggest there to be a broad and mixed representation of important and influential organisations in the community. Data collected here suggest that organisations that voluntarily contribute to enhancing the social, cultural, physical, political, economic or environmental wellbeing of community and its residents, rather than simply performing a functional role or task, are considered to be important or influential. As such, influential organisations develop from a variety of backgrounds and form no specific pattern other than they offer consistent, open and locally focused...
investment to bring about social change and betterment in the community.

4.2.4.4 Information from important and influential organisations

Data collected here suggest that people pick up and read information distributed by organisations they believe to be important or influential in the community. Even if people are unable to take in all aspects of the information provided, they will at least skim through written material to ascertain content. People from different sectors of the community do however, apply a different set of subjective criteria to determine which organisations are important and influential and which ones are not. The key criterion applied by individuals here is whether the decisions and actions of an organisation impact on the immediacy of an individual’s surrounds. The main factor influencing people’s decision to therefore pick up and give attention to material provided by an organisation, is a belief that the organisation and the information provided by that organisation is of interest or relevance to them, their family, their lifestyle, their social or leisure activities, their workplace or their community.

It depends on the topic. Something on weeds I’d read. Same as the mines because they have such a big influence on the town. I might read something from the farmers. I’d read it if I was being offered something or whether there was some crucial information about the things I like doing such as camping or the environment. I’d certainly take notice of something relating to the environment (S14-07).
4.2.5 Influential people in the community

Data collected in this study suggest that residents form close relations with people in the community and these people are central to providing information, direction and support on personal or professional issues. Alternatively, residents rely on people who are unknown to them to make decisions about the ongoing administration of the community. Determining who to access and accept information from however, requires the consideration of several key factors. While these factors differ for each individual in the community to another, there are some broad commonalities such as shared or established relations and locally recognised experience and expertise. To determine who residents trust to provide sources of information requires an understanding of how individuals measure the opinions of one person over the opinions of another. While residents hold a number of subjective perceptions about who is influential in the community and who is not, the data here suggest that people demonstrating a commitment to the community are held in high esteem. While property ownership, longevity in the community or appointment to a public position can bring with it a degree of local prominence, residents participating in this research believe those who voluntarily invest their own time, resources and expertise to better the community and bring about social change are the most influential.

4.2.5.1 People with experience

Residents from all community sectors form close friendships with others and believe that these people are considered to be influential in their lives. Similarly, those in intimate relationships typically source information from their partner while children seek clarification and advice from parents. Although the data suggest that residents with no immediate
family in the community still maintain contact with relatives in other parts of Australia or overseas, people are more likely to take up and rely on information from networks of close friends or an adopted, surrogate family. Residents also source and take up information from people they believe have experience, expertise and skills in a particular field, particularly if those experiences, expertise and skills have been formed and demonstrated in the community rather than applied to a local context from outside.

According to the data, non-Indigenous residents seek out information from work colleagues, other professionals or people in similar industries who are perceived to be in a position of authority or expertise. Although tertiary or formal qualifications are a requirement for certain professional roles, in this community expertise is more likely to be associated with long term local experience. For example, residents seek information and advice from an immediate supervisor, a qualified or specialist work colleague, a manager, committee member and any number of long term residents who are perceived to be successful. Non-Indigenous long term residents involved in farming, tourism or other business ventures are considered to be influential and likely to be contacted by new residents or people in the same field for information, feedback, opinions or advice.

For Indigenous people, elders and Indigenous leaders who have knowledge of 'The Dreamtime' and Indigenous protocols are regarded highly, particularly those who maintain links to traditional beliefs, laws, ceremonies, stories and cultural practices. While opinions about influential
people in a non-Indigenous setting are more a subjective, individual view. Indigenous people who have knowledge of traditional culture, language and practice are valued and respected across the broader Indigenous population and, as explained here, are consulted to make decisions on issues impacting on and in Indigenous communities.

When I first came in as a chairman (of a cultural centre), I was a stockman. The old people put me as chairperson, so I had to do things the traditional way. Do as they tell you, you know. I had no choice... I grew up with a lot of cultural knowledge. I can do their thinking. If I think something is really good, I normally get their permission. In many cases, they'll all agree to it by saying “yeah, that's a good thing. You go and do it for us”. So it's mainly by taking instruction from senior men and women... it all boiled down to respecting your senior people, what they want you to do... and growing up that traditional way, knowing about the traditional structure... I'm part of that, and through that I was able to do things (S28-08).

For tourism however, the situation is completely different. Although travellers reside in the region for between three and fourteen days and backpackers up to three months, people who are influential are those who provide information and services that increase the quality of their stay in the community. While backpackers source the majority of their information on potential travelling destinations, work opportunities or low cost social activities from other backpackers, they also consider employment agency staff, hostel managers, farmers and farm hands or even residents
they meet at the pub to be an important source of information because of the role and experience they maintain in the community. While backpackers access information from less tourist oriented sources, grey nomads and other travellers by contrast put greater confidence in the information provided by tour operators, the visitor's centre and caravan park or hotel staff. Even so, these two diverse tourist groups share a commonality in that they still maintain a high regard for the information provided by family members and friends who have visited the community as well as other travellers and backpackers they meet during their travels.

For young people, parents play an important and influential role in their lives as do teachers within a formal education setting. Similarly, young people who engage in part-time and full-time work view their employer as influential as well as those adults who have developed close relations with their family unit. While Indigenous young people acknowledge the role of their parents, they also value the information provided by traditional elders, aunties, uncles, cousins and other members of an extended family. However, for those more personal, intimate or social issues, Indigenous and non-Indigenous young people converse with close friends, and possibly an older sibling or cousin, because of a shared history, like-minded attitudes and experiences or established relations based on reciprocal support. An example of this, as well as the influential nature of family, friends and people with local experience, is provided in table 4.18.
Influential people

<table>
<thead>
<tr>
<th>Family and close friends</th>
<th>Reciprocal networks</th>
<th>People with local experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would ask my partner first. Then my dad because I work with him every day. We have a business relationship and a personal relationship. But it depends on what it was... In town, networking, you just ask around. Bring it up in conversation with friends. Networks are still the best way to find out what’s going on. It’s not a large town. Though it’s growing, you know someone, who knows someone, who knows someone who knows what’s going on (S8-07).</td>
<td>Your parents are always in your face and want to know what’s happening 24/7 and I reckon that’s what makes some people not want to talk to them and tell them something... Friends are important to me... If you’ve got an idea about doing something but you’re not sure, and you ask someone for a second opinion, then that’s always going to be helpful. Even if you don’t go the way that they think, it always makes you recheck what you’re doing. It makes you more sure of the first thing. Then people can talk to you about certain things, so you usually go to the person you think you can relate to most (G41-08).</td>
<td>The main people around here would be [names withheld] because they have been here a lot of years and they’re both very successful farmers. Both are very generous with their time and information... often I’d ask them questions because I’ve never had any experience in irrigation, never had experience on these soils so I can ask them anything (S17-07).</td>
</tr>
</tbody>
</table>

Table 4.18: The people who residents and visitors access information from.

4.2.5.2 Measuring and validating knowledge

Short, medium and long term residents acknowledge that they access information, advice and feedback from a range of people and sources in the community. However, it is common practice for people to seek the opinions and input of one person, or a group of people, over another because of three specific and connected entities; experience, personal and/or professional relations and trust. Data collected in this study indicate that residents and visitors source information from people who they believe have demonstrated experience in a relevant local field. The data also suggest research participants believe local and practical
experience brings with it local and practical knowledge, which is more valued than theoretical, technical or academic information provided from outside the community or even outside a specific community sector. This assertion is evident, through participant observations, in the agricultural, tourism, building, business, mining, Indigenous and service industries, whereby residents seek input from those who they believe have the appropriate knowledge, gained through experiences in the community, to assist in forming an opinion, making a decision or adopting a specific task or work practice. As such, new residents to the community, regardless of the depth of experience, knowledge or qualification they bring from other places, are still required to get some (local) ‘runs on the board’ before the information they offer to others is regarded with any great esteem. Those who accumulate experience and knowledge in the community, or have applied the knowledge they have accrued from elsewhere to a local context, are attributed with varying levels of ‘street credibility’.

However, while this may be true in a non-Indigenous context, the acceptance of traditional and long term Indigenous experience and knowledge is rarely sought or adopted by non-Indigenous people other than in some selected circumstances such as paid cultural awareness training or other work related initiatives. Although there is evidence of Indigenous custodianship of regional lands extending back 50,000 years (Jacobs, 1991), only two non-Indigenous research participants (excluding follow-up interviewees) identified Indigenous history, knowledge and experience as
an important source of information. Data collected through participant observation also supports this evidence.

While the data collected here may suggest the existence of distant or absent ties between Indigenous and non-Indigenous people, this study also suggests that the type and strength of relationships between people in the community impacts on an individual’s motivation to access information. Partners, friends, family members, work colleagues, industry representatives and those sharing common interests are a regular source of information primarily because of pre-existing relations, which provide a contextual framework to discuss specific issues and understand where information and advice may best fit. However, personal or professional relations and experience in the community are not always viewed as positive endorsements of local knowledge. While individuals may maintain relations with people who have, for instance, lived in the community for long periods of time, they also believe that the work and community practices of these same long term residents may be motivated by self-interest and as such, the information they provide is given little weight or credibility. The concept of trust therefore becomes a critical element in determining who local people approach for information and advice.

Although local experience and personal or professional relations are important elements in determining who an individual will access information from, they are not always viewed as key components in the formation of trust. Data collected here indicate that trust results from a developing belief and confidence in others to be honest, supportive,
reliable, competent and accurate in the information they provide while also maintaining a level of confidentiality and integrity with the information they receive. This suggests that the decision to trust an individual is a subjective process in which residents exchange information with people they believe have similar morals, values and beliefs as their own and will respect the information they are provided with. Examples of the three key characteristics of influential people, namely experience, personal relations and trust, are presented in table 4.19.

<table>
<thead>
<tr>
<th>Experience</th>
<th>Strength of relations</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>A theoretical approach is not always appropriate. A lot of learning is experiential... more weight is given to those with experience. Street credibility is extremely important. They have integrity, experience and can lead by example. There is a difference between those who simply provide theoretical knowledge and those who have experience (S04-07).</td>
<td>One person I have a particularly close relationship with and I can talk to him confidentially about anything... if I’ve had trouble with work or a little indecision in my mind about stuff, he’s a really good person, he’s a really good mentor and a good mate (S17-07).</td>
<td>People who provide me with accurate information. People you trust more because you have known them longer. People who I think will know the answers. People you trust to tell you the truth even if you don’t want to hear the truth (S09-07).</td>
</tr>
</tbody>
</table>

Table 4.19: The characteristics of influential people.

In this study, residents of the community acknowledge that not all information provided by experienced, relational or trusted people will be accepted, adopted or actioned, although may still have some influence over the opinions they form and the choices and decisions they make (or do not make). While people are generally satisfied with the information they receive from others, data collected during semi-structured interviews indicate that individuals will still
undertake independent research from a variety of sources if they require clarity or further input about a specific issue. In addition, residents believe that the information and advice they offer to others is valued and well received, particularly in areas in which they are considered to be proficient.

I’d be more likely to look something up on the internet or talk to people I know who have been there and done that... I think I can provide some knowledgeable answers. If I don’t know something then I’ll ask others with some level of expertise (S14-07).

4.2.5.3 Perceptions of influence
Data collected in this study suggest that residents believe there to be a wide range of influential and important individuals in the community. Non-Indigenous long term residents who have accumulated assets gain particular attention, especially those who own prominent local businesses and commercial properties such as the independent supermarket, liquor outlets, office buildings, service stations, caravan parks and tourism companies. Similarly, people involved in the promotion of the local economy gain some recognition as do those in senior positions in the economic development commission, the Shire and Chamber of Commerce and Industry. As mentioned in previous sections of this chapter, the Shire is seen as an influential organisation and as such, people holding senior positions within the local authority, including the chief executive officer, the shire president and elected members, are also considered to be important. Some elected members in particular are seen to be more influential than others primarily because of their long-term experience and
demonstrated ability to achieve specific outcomes for the region.

Residents also acknowledge that individuals elected or appointed to certain administrative roles, should be influential in the community, primarily because of the nature and responsibilities associated with the positions they hold. Similarly, those who own property are believed to maintain a level of power and influence because of the scale of commercial and economic interest they have invested in the region. However, while property ownership, longevity or paid and elected positions in the community may be one indicator of influential status, data also suggest that it is the actions of the individual and the impact these actions have on the broader community that greatly shape opinions of residents as to who holds influence and importance and who does not. Although non-Indigenous long term residents, local business people, senior Shire officers and elected members are seen to be influential, residents are also critical, cautious or uncertain as to whether the actions of some are motivated more by ego or self-interest rather than for the broader public good. An example of this, as well as perceptions of influential long term residents and elected members, is shown in Table 4.20.
Perceptions of influential people in the community

<table>
<thead>
<tr>
<th>Long term residents</th>
<th>Elected officials</th>
<th>Motivated by self interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would say, though only putting forward a feeling, that people who have been here for a long time in this town, you know the original people of the town, they're business people, they probably own half of the town. They could be farmers, they could be town's people. I don't know, but I suspect that behind the scenes they would have a very influential energy in the town (C11&amp;12-07).</td>
<td>One (influential person) would be an elected member who has been in the community for a long time. Over the years, he's done an awful lot for the community. A lot of people don't really realise it (S10-07).</td>
<td>(The community) is such a funny little place. The community characters and politics are such fun. There are people who think they are influential and then there are people who are influential. The people who think they are influential are the shire councillors, the Shire CEO, (long term farmers with large commercial acreages)... I often look at the human species just like any other species... and you see it here in this community whereby by there are a couple of males vying for dominant positions. It's an unfortunate thing in this community in that so many people are trying to push their own agendas and they can't relinquish that ambition to achieve the common good. They want to be in control and push their own agendas (S05-07).</td>
</tr>
</tbody>
</table>

Table 4.20: Resident perceptions of people who are influential in the community.

4.2.5.4 Addressing community needs

Following on from the perceptions of influential people as identified in the previous section, the data indicate that some non-Indigenous long term residents with access to assets and commercial property are considered to be influential in the community while others with the same longevity and financial position are not. According to residents, the significant difference between those who are considered to be influential and those who are not, is the contribution each makes in volunteering their time, finances, assets or expertise. This is particularly evident when viewing the level of support...
offered by local businesses, and therefore business owners, to community groups and community events such as the Toadbusters, junior and senior sporting clubs as well as the community's annual festival and agricultural show.

Here, the data suggest that short, medium and long term residents in a range of different community, administrative and business roles are influential and important essentially because their interests, energy or actions to bring about change are aligned with the needs of the community, or a sector of the community. For example, a long term doctor is seen to be influential because of her ongoing contribution to community and Indigenous health while a local business woman is widely recognised for offering her time, finances and support to a range of community and junior sporting initiatives. Similarly, key Indigenous elders and Indigenous leaders are identified as being important (by Indigenous people) because of their capacity to make decisions on behalf of, and for the betterment of, local Indigenous people and their communities.

People who have been here for a while, who have empathy for the community and the people who live here and the diverse groups who do live in it. There is a cross section in (the community)... I look at up and coming young families who will play a big role. Sometimes I think it’s the little people who listen, actually some of their decisions come through to the top (S03-07).
4.2.5.4.1 Subjectivity of influence

The opinion of who is influential in the community and who is not is a subjective concept, primarily because the perception of influence relates to an individual's personal assumptions of what is important in the community and what is not. In other words, people hold those with similar interests, investments or employment in high regard although may not acknowledge other people for the important or influential work they do in other sectors of the community. For example, a small number of long term farmers are identified by other farmers as being instrumental in establishing and enhancing the regional agricultural industry, particularly by sharing local knowledge, developing and promoting different agricultural techniques, trialling new crops and agricultural ventures while also advocating for the further expansion of agricultural infrastructure. However, these individuals are only recognised by those within the agricultural industry but gain limited recognition, and are therefore not considered to be important or influential, by those outside this network.

Similarly, Indigenous people do not recognise the role played by elected members, business people (other than the independent supermarket), non-Indigenous long term residents or Shire staff. Indigenous people instead place greater prominence on those individuals who represent and express the needs of the broader and immediate Indigenous community. This includes people employed in community based organisations or appointed to specific boards as well as local Indigenous elders and leaders of the community as demonstrated by the following example.
The elders. They speak out for us. They speak out for us and they represent the whole community, yes. Regardless of if you like them or not...

An orphan. He's one of the young (interrupted). Representatives, yeah.

The elders represent us here in town. So he speaks out on behalf of us. So he's like a role model... Yeah he's the CEO assistant (of the Indigenous health centre) and he's quite young actually. He's one year younger than me and he's already up in that position. So he's also a representative (G31-08).

4.2.5.5 Commitment to the community

Although non-Indigenous longevity in the community, property ownership and the capacity to make decisions feature in people's opinion of how influential an individual may be, an initial analysis of the data suggests that attitudes and actions towards the enhancement of the community are more likely to determine an individual's influential status. Residents acknowledge that all people living in and visiting the community make some form of (positive or negative) contribution to the region, whether it be social, cultural, physical, political, economic and environmental. However, data collected during semi-structured interviews and participant observations indicate that people who are actively engaged in community related initiatives, rather than profit making activities, are viewed as important figures in the community's composition. The distinction here is between those who are 'simply present' in the community and those
who take on greater roles in steering, motivating, funding and fostering community action, activity and change.

Data collected here suggest that people attach a greater sense of influential authenticity to those who invest in the community freely because they are passionate about the place they live, they have the capacity to influence change (either through an investment of time, energy, expertise or wealth), they want to give something back to the community or they choose to act as a catalyst for change by motivating and educating others. While people are recognised for the effective work they provide in paid positions, such as teachers, community workers, health professionals, administrators and Indigenous leaders, influential authenticity is more often afforded to those who volunteer and invest their resources outside the work environment. This study therefore reveals that people who participate in community focused initiatives are motivated to contribute 'something back to the region' because they are passionate about the region, the activities they participate in or the profession in which they are employed. There is also recognition that motivated and active people are essential to the community, particularly because they introduce new ideas, energise others into action and initiate local projects and proposals.

According to residents, the actions and attitudes of active community members have a significant impact on others and encourage greater participation, interest and involvement in local activities. There is also recognition that making a contribution to the community provides people with opportunities to connect with others, experience different
activities and establish new networks, which in turn, develop a greater sense of belonging and acceptance. The outcomes generated by those who contribute to the community or maintain a sense of influential authenticity are presented in Table 4.21.

<table>
<thead>
<tr>
<th>Commitment to the community</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Giving back - reciprocity</strong></td>
</tr>
<tr>
<td>When I arrived in town, I was a wage earner... now I'm not wealthy but I'm living quite comfortably and... I suppose as far as community involvement, I tend to look at it more now that I throw the money at it. Like this Toadbusters thing, they had an Aboriginal painting for auction and I paid $5,000 for it when it may be a $10 painting. I feel I owe it to the town. The town has made me a lot of money so I like to give it back in one way or another... it's my home and I can contribute to it to make it better (S22-08).</td>
</tr>
</tbody>
</table>

Table 4.21: The outcomes of broad, authentic contributions to the community.

This new concept, named here as influential authenticity, describes those who are passionate about the community (or aspects of it) and selflessly volunteer their own energy, finances, knowledge, skills and expertise (or the resources of willing others), to bring about change and transformation.

4.2.6 Methods used to source information in the community
Residents access information relevant to this community through formal and informal mediums. The next section discusses the methods used by people to source information on issues and
activities relating to the community as well as those occurring on the outside. Also discussed is the manner in which residents gather information that is important and of interest to them as well as people’s preferred method of receiving information.

4.2.6.1 Information in the community

The data indicate that residents receive information relating to local issues and activities through different mediums. The most common of these methods is the verbal sharing of information through family, social and professional networks. Other methods include locally based radio stations, the community newspaper and community notice boards. Although the use of telephones and internet were identified as the most popular means of information exchange by Bolam (2004) in a recent study amongst regional growers and pastoralists, such mediums were not widely used across the six community sectors other than as communication and research tools in the workplace, home and school. The exception to this is the use of mobile telephones for text messaging, which is identified by young people as one of the key methods to communicate with other young people along with face to face conversations.

4.2.6.1.1 Word of mouth

Residents in this community, regardless of age, gender, cultural background, longevity or employment status, gather local information most often through verbal communication. A review of the data collected during 78 semi-structured interviews (not including follow up interviews) identified 56 references to ‘word of mouth’ and ‘personal networks’ as the best method to gather
information within the community. Further analysis of this data indicate that residents access and share information primarily in an informal setting with people who are important and influential in their lives such as a partner, other family members, work colleagues and friends and peers. According to parents, children and young people play an important role in providing adults and each other with information on community activities. Parents receive information through networks involving their children, such as school functions, school newsletters, childcare centre activities and participation in junior sports and community events.

Indigenous parents particularly recognise that Indigenous young people are active in providing information because of their extensive family and community networks as well as their capacity to observe and listen. Residents also comment on the speed at which information travels across the community, especially if it involves a person known to others or if the issue is of interest to the broader community. Although this is common for both Indigenous and non-Indigenous people, an interview with Indigenous adults provides an example of how information travels across the community by word of mouth and the role Indigenous young people play in providing it.

Verbally, yes. Yes, very, very quick.

News travels fast.

We even get word before the cops could get words about anything that happens the night
before or something while we’re all sleeping in bed. Get up in the mornings.
Somebody probably.
“Hey, did you hear about that last night?” No, I was asleep...
The kids coming over in the morning.
Yes kids. They know everything.
Who got done last night.
This and that.
Even that around the clock.
“Mum I’ve got to tell you something”... They ear drop. That’s all it is (G31-08).

Backpackers and travellers also believe that information exchanged through word of mouth is an important aspect to planning future travel activity and work opportunities: Backpackers, particularly those fluent in English, readily source information from other backpackers, hostel staff, employment agencies or residents they may meet at a local bar or social event. Similarly, grey nomads gather information from tour operators, the visitor’s centre, caravan park staff, local residents and other travellers to assist in making their immediate and future travels activities more enjoyable. Tour operators also acknowledge the success of their business is largely dependent on the level of positive feedback tourists and residents provide to others. Tour operators identify that tourists specifically use services they hear of from people they meet in different parts of Australia and overseas. Highly mobile tourists therefore have the capacity to exchange and share information
about the experiences and activities that occur in the community with an extensive network of other tourists, friends, families and work colleagues.

For us, we don’t do any advertising. Word gets around. People in the caravan parks promote us, other tourists promote us. We’ve had people come in and say, “Oh my God, I heard in Melbourne⁷, I’ve got to try the cake⁸” (S8-07).

Formal advertising in newspapers, on the radio or television outside the immediate community is rare for most tourism operators although some, such as franchised caravan parks, maintain links to independent or networked websites. Even so, tour operators prefer to promote their services within the community by placing brochures in local accommodation venues and allow tourists to exchange information amongst themselves at hotels or caravan parks, travelling from the community to other destinations and upon their return to their usual place of residence. Tour operators participating in semi-structured interviews believe that the best form of advertising is typically done by tourists talking with others about the positive experiences they have had in the community.

Yeah, word of mouth. We’re currently carrying 20,000 (people) per year and all the accommodation houses and caravan parks which sell the tours tell me, “People come

⁷ Melbourne is the southern-most mainland city from the community and some 3776km away by road.
⁸ A cake made from locally produced rum that has achieved notable status in the community.
straight up to the counter and ask to do one of your tours without having to be told"... word of mouth is huge. Like over the years, we've had different campaigns like TV advertising and all advertising is hard to quantify the results you get from it. Word of mouth - if you have a good product you'll succeed, if you haven't then you won't (S22-08).

In terms of sharing information amongst peers, tour operators, business people, agriculture and primary producers as well as those involved with their associated service industries recognise the importance of meeting regularly with their peers in formal or primarily social settings to discuss issues relevant to their industry, the people they know and work with as well as the community itself. Table 4.22 provides examples of the use of word of mouth as a means of accessing information in the work place, by tourists or within informal social networks.

<table>
<thead>
<tr>
<th>Work settings</th>
<th>Effective amongst tourists</th>
<th>Social networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>When I was more into refrigeration and working on building sites, sitting around at lunch or smoko, you'd hear everything that was going around town. Just talking to people - word of mouth (S10-07).</td>
<td>You can read all the guidebooks you want, but it is far better to get people's views... I think definitely word of mouth. And you take what someone else says a lot deeper than you would reading a Lonely Planet or whatever (C32&amp;33-08).</td>
<td>Friday night at the tavern... I'm not joking. I know these guys in tourism - &quot;hey what's happening with this or that? &quot;Who's new building is that? &quot;Oh, what's his name?&quot; If people don't know, then they'll keep that in the back of their head and tell me later when they find out (C7-07).</td>
</tr>
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Table 4.22: The use of word of mouth to access and exchange information
While residents in the community recognise that information exchanged through word of mouth to be an effective way to determine what is happening in the community, it is not always assumed that the information they are provided with is entirely accurate. As a result, residents seek clarification on certain or important issues by undertaking their own research with a number of different sources. These include speaking with people who are central to the issues in question, accessing local media outlets for more detailed information, researching on the internet, reading books or brochures, viewing public notice boards as well as making contact with relevant businesses and government agencies.

Most of the time people are fairly accurate but it’s good just to be sure... I’d double check for myself (S14-07).

4.2.6.1.2 Radio, print media and notice boards

Although data collected during semi-structured interviews, participant observations and a review of documents indicate that information relating to the community is regularly exchanged by word of mouth, people also use other mediums to gather information on local events, issues and activities. These mediums include the local community newspaper, postal services, notice boards as well as two radio stations located in the region. One radio station is Indigenous owned, operated and located in the community, while the other is affiliated with the national public broadcaster. Although two state-wide commercial
radio stations are popular in the community for music and light entertainment, residents acknowledge that they are not an effective means to gather local information.

Indigenous radio is popular with Indigenous adults and young people (and some non-Indigenous people) primarily because it provides topical and relevant information on local Indigenous issues. Transmitting to 35 surrounding communities in a 300 kilometre radius, this station provides local news, sport, weather and country and western music. The station also plays music by local and well known Indigenous artists and promotes Indigenous and non-Indigenous community events and programmes as well as interviews with local community workers and service providers. One of the other key attributes of the Indigenous radio station is the promotion and use of Indigenous language, a feature that is recognised by traditional Indigenous people. For example, during a group interview with young Indigenous males, discussion centred on the radio stations Indigenous young people like to listen to.

(Indigenous) radio because they can pronounce it in a way that we can understand (G26-08).

Although some non-Indigenous adults listen to Indigenous radio, ABC regional radio is primarily identified as an important source of local information as it is linked to the national public broadcasting service and much of its daily content is generated from radio stations in neighbouring regional centres and the
community itself. ABC regional radio presents a rural report and country hour each weekday as well as regular local weather updates, interviews with local people and a range of other news and sporting broadcasts.

Another source of information identified by residents in the community is the local newspaper, which has been in circulation since 1980. Although this once a week publication is not always credited with providing accurate and objective news items, the paper is still widely read and for many, provides a source of light entertainment rather than factual information as discussed later in 4.2.7.1 'The community newspaper'. However, since the completion of semi-structured interviews, the community newspaper has been purchased by a larger media organisation, which has brought about a change in management as well as journalistic and editorial content. Participant observations indicate that community members believe that the newspaper now publishes more balanced and better researched articles while also reporting on a broader range of local, state and national issues. Although many initial references to the community newspaper question the quality and integrity of its editorial content, participant observations suggest an improvement in the paper's output and as such, there has been a notable upswing in its reputation.
Another mechanism used to share information amongst residents is the use of community notice boards. The data indicate community notice boards as an effective and well utilised method to advertise and promote a diverse range of community related material. While, notice boards affixed to local supermarkets, caravan parks and service stations often have 'for sale' items and advertisements for local garage sales, they also include flyers, brochures and posters for community service groups, community events and community health initiatives. Similarly, notice boards at the leisure centre promote sporting clubs, recreational activities and forthcoming leisure pursuits. Table 4.23 provides examples of resident views associated with local Indigenous and ABC regional radio, the community newspaper and local notice boards.

<table>
<thead>
<tr>
<th>Radio, print media and notice boards</th>
<th>The community newspaper</th>
<th>Community notice boards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous and ABC radio</td>
<td>I think it's the worst paper I've ever read, honestly... I have never seen such poor use of language, poor editing, it's biased. I suppose you look for something that's educational and informative and allows you to form an opinion but when it gets shoved down your throat it gets much more difficult. Having said that, for most other people, it's probably a really good way of finding out what's going on in and around the town (S14-07).</td>
<td>The stuff we do get (information), I have a read of it and some of the things the campers may be interested in it so I put it up on the notice board in the laundry. Some of the Toad-busting stuff, you know different things like that or things going on... It's a bit of an info point for people... We put everything up there. Adverts for jobs and this and that, it all goes up there (C23&amp;24-08).</td>
</tr>
<tr>
<td>ABC and (Indigenous) radio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Commercial) radio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>is ok but it's a bit braad...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABC radio is very good.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good community focus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>that brings people together.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tends to be mainly aimed at older people but still talks about lots of things relevant to the local area (S14-07).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.23: The use of radio, the community newspaper and notice boards to access information
4.2.6.1.3 Postal services
Residents believe that mail-outs to post office boxes⁹ are an effective method of providing information across the community. Although people believe community-based promotional material risks being treated as ‘junk mail’ and disposed of without being read, people also acknowledge that if information appears to be local and of interest, it has a higher chance of attracting the attention of its intended reader.

As part of the rodeo committee, we found that fliers in the mail had the most impact. A lot of people don’t read the local paper and if they do, they just do some of the specific stories so lots of stuff gets missed (S15-07).

4.2.6.1.4 Combinations of information sources
The data suggest that information can not be effectively and accurately provided across the community using a solitary means of communication. Although word of mouth is common, residents do not always assume the information they receive to be accurate and are therefore motivated to undertake further research to gain clarity on local issues, events or activities that are of interest. Similarly, the community newspaper is a widely read publication although there are reservations as to whether local articles are accepted as being balanced, well researched and accurate. Alternatively, information provided by ABC

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⁹ There is no mail delivery service to residential street addresses, only to private post office boxes
regional radio and Indigenous radio is often afforded a high level of accuracy because it is assumed the information is accessed from local or credible sources. However, both radio stations are listened to by only certain sectors of the community. If information is therefore to be provided effectively across all sectors of the community, it would be applicable to use a number of different mediums. This may include for example, discussions and public speaking opportunities in schools, industry gatherings, Shire meetings and presentations with tourists that can be followed up with radio interviews, newspaper articles, mail outs as well as public displays at local markets, shopping centres and civic centres.

4.2.6.2 Information from outside the community
Residents acknowledge that they receive information through their personal and professional contacts outside the community such as friends and family, social networks, work colleagues and industry associations. However, the more popular means of accessing information external to the community is through the electronic media. According to data collected in this study, using external media outlets enables residents to keep abreast of regional, state, national and international issues.

4.2.6.2.1 Television and radio
Data collected during semi-structured interviews indicate that local people access information about events and issues occurring outside the community through public and commercial television news.
services. Similarly, people access external news and information services provided by ABC regional radio and Indigenous radio as well as the national public radio broadcasting service.

I also go to (ABC) Radio National so I can catch up some broader issues. I usually get caught up in book reviews, music reviews, the health report, the science report and agricultural reports. The only problem with that is I can’t always pick up (the radio signal) in the valley. Radio keeps me alive though I miss half of it because I’m in and out of the car all the time, though I have been known to sit in the car until an interview is finished (S16-07).

4.2.6.2.2 Newspapers
Residents also refer to newspapers as a good source of external information although, as a result of the community’s remote location, state and national newspapers are available one day after their general publication. A limited selection of international papers is also available in the community although these can be up to three days old before they appear in the local supermarket. As a result, residents, particularly those with computer access in the workplace, view Australian and overseas media websites for the most recent and up to date sources of news external to the community.

4.2.6.2.3 Tourist access to external information
Data collected during semi-structured interviews and participant observations suggest that travellers and
backpackers use the internet to access information external to the community, although to varying degrees. While both groups send emails to family and friends, backpackers are more likely to use the telephone to contact others in their country of origin or gather external information through conversations with other backpackers, hostel staff or people they work with. Travellers on the other hand use the internet to access news items and plan future travel activities such as checking road reports and weather conditions, comparing fuel prices in different towns, booking accommodation at caravan parks while also researching popular tourist sites at forthcoming destinations.

I would use the internet daily and sometimes, like for example, when we were in the centre (Uluru), you couldn’t access up to date information so I’d quite often access the internet and go to Australian newspapers online and just pick up headline news from various places (C39&40-08).

4.2.6.3 Information of importance or interest
Residents of the community acknowledge that they go to several sources when accessing information that is considered to be important or of interest. The most common means is the internet, which is used primarily in the work place to identify work related items during business hours or to search for information relating to school projects, hobbies, higher education and areas of interest in their own home. Although the internet is widely used by non-Indigenous people, access and use amongst Indigenous people in the
home is low (ABS, 2007d) and restricted primarily to those who have access to computer systems in the workplace or at school. Because of the community's remote location and limited availability of products, non-Indigenous residents identify an increased use of the internet to purchase a wide variety of domestic, commercial and industrial items.

Participant observations indicate that the increased use of the internet to purchase items, as expressed by two local residents below, is likely to increase as a result of pricing and the speed in which items can be delivered to the community from within Australia and overseas.

The internet we use.
Yes, we love it, wonderful.
Even for an old mug like me, as Mr Google would say, it's very easy...
Internet, fantastic, fabulous. And the other thing I find living up here, and I do like living in remote areas, you do a lot of purchasing. I've never done that, I've never purchased over the internet before but to get what I want, I'll go and look on the internet. I can order things, a record, a DVD or a book, with a local here and it will take 4 months to get it. I may as well go to the source or company and get it in two weeks (C12&13-07).

Residents also acknowledge that they are motivated to undertake more in-depth research to ensure they get the most accurate information possible. While the internet is still the most widely sourced medium to gather information by non-Indigenous people, residents and visitors to the region also use media outlets, such as radio stations, newspapers
and television, or approach friends, family members, professionals or experts to provide greater insights into specific topics or areas of interest. The library is used as a venue to research items using the internet, newspapers, books, reports and other documents while subscriptions to journals, magazines and newsletters is still common amongst those within agricultural, trade, tourism and other professional fields. Indigenous people however, are more likely to engage in conversations with other Indigenous people living outside the community, rather than use the internet, to find out about events occurring elsewhere. Similarly, young Indigenous people use the television at home and the internet at school to find out the latest in sports news and music videos.

4.2.6.4 Preferences in accessing information
Throughout the different stages of data collection, residents identified their preferred methods to access information about events and issues occurring inside and outside the community including word of mouth, electronic mediums, documents or combinations of each. In this study, engaging in face to face contact with other people is the most preferred method for residents to receive information. According to the data, conversations provide an authentic, reciprocal medium that enables individuals to participate and express themselves directly in a context rich dialogue. In other words, residents welcome the opportunity to engage with others to put forward their own ideas and debate issues occurring in the community. Similarly, residents prefer to ask questions and seek clarification during periods of uncertainty while also being in a position to interpret body language,
facial expressions and vocal deviations that may emphasise or give meaning to certain words and phrases.

Similarly, the use of the internet to send and receive emails is common for residents of the community, particularly in the workplace where a high quantity of messages, documents, images, reports and technical data can be exchanged instantaneously between individuals, groups and organisations. While emails are important, the internet is also considered to be a good source of information because of the increasing speed at which search engines locate material. Young people also acknowledge the internet to be a central educational tool, particularly when researching school assignments although they also prefer to exchange information with friends using text messages.

While the internet is still a popular method of accessing information, adults in the community believe, to a lesser extent, that reports, newsletters and magazines are useful while others also value courses, workshops and seminars administered by education centres, government agencies or industry groups. Travellers are the only sector in the community to identify brochures as a commonly used tool to source information, while others recognise formal, written material and presentations to be relevant only in areas that are topical, work related or of personal interest. However, the data also suggest that residents gather information using a combination of different mediums as there is not one method to best exchange information as demonstrated by the examples in table 4.24.
4.2.7 Methods of information provision in the community

In previous sections of this chapter, the data suggest that information is accessed by residents through social networks, the internet, community notice boards as well as local, state and national media services such as radio, television and newspapers. This next section details the perceptions residents have of one-directional mediums of information provision such as the community newspaper, mail outs and the internet as well as other sources as identified during the different phases of data collection.

4.2.7.1 The community newspaper

A local newspaper is produced in the community once a week and is available across a region covering an area of 424,517 square kilometres (KDC, 2009). While the local publication has been in circulation since 1980, local opinion is divided as to the quality of this newspaper. Participant observations however, indicate that a change in management has brought with it an increased appreciation of the newspaper’s journalistic and editorial capacity. Regardless of opinion, the newspaper maintains a high circulation and readership in the community and
neighbouring towns, which indicates that it is a highly valued local resource.

Residents who spoke positively about the newspaper believe it to be an important component of the community because it provides articles on local issues, events and activities as well as opportunities for personal comments in weekly editorials, opinion columns and ‘Letters to the Editor’. Indigenous and non-Indigenous young people believe the television guide is of value but also look forward to reading articles or seeing photos of themselves, family members and people they know in the newspaper, especially in the sports section. Non-Indigenous adults believe the community newspaper is an important method for government agencies to circulate information in the public arena while classified advertisements provide a directory of local tradespeople and community services, including the dates for visiting specialists such as optometrists, accountants and legal firms. Then again, residents critical of the newspaper comment that many articles do not appear to be well researched, are racially biased and are one sided. As such, the community newspaper is not heavily relied upon as a primary source of local information. Residents do however acknowledge that the community newspaper can be a good conversation starter or a motivating factor to undertake personal research to ascertain a more accurate view of local or broader issues.

Residents do not have high expectations of the newspaper and recognise that a community with a population of 5,619 people (ABS, 2007a) is not going to be equipped with the same resources, skills and networks typically associated with
media organisations in a larger population centre. Even so, residents who do not hold a high level of confidence in the community newspaper, purchase the publication as a weekly tradition rather than to be provided with an accurate account of local news. Although negative comments about the community newspaper are recorded in semi-structured interviews, residents also recognise that the quality of the newspaper has improved, most notably in its ability to provide more balanced and better researched articles, a more professional looking layout, improved photography as well as a greater coverage of regional, state and national issues. While mixed opinion of the community newspaper exists, residents expect this publication to be a central resource in providing information about local issues and events, even if the content is not always considered to be accurate.

The data also suggest that tourists have limited or mixed views of the community newspaper as an effective tool to transfer information. For example, travellers either do not know the community newspaper exists or had noticed it but not read it. Alternatively, backpackers who live in the community for between one to three months, are likely to read the community newspaper (over those who live in the area for a week) to look for work, read the local articles and "get a feel for the country" (C35&36, 08). Other examples in table 4.25 reflect the positive, negative and mixed sentiments by residents toward the community newspaper.
The community newspaper

<table>
<thead>
<tr>
<th>Positive feedback</th>
<th>Negative feedback</th>
<th>A springboard for discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>I read it every single week. Sometimes it doesn't tell you the full story, but it is exactly that, a local community newspaper. It tells you what's going on and focuses on a lot of the positive community things. Not sure about the police report on the second page - not a good look for tourism though it's important to have a local newspaper. Important for people to see people they know (S8-07).</td>
<td>The old (community newspaper), what a fine piece of journalism that is? I hate it and it offends me but I still read from cover to cover every week and I guess there is very little new news that you haven't heard already but you still do often find out things from there. Most of the useful information comes from the public notices section or the classified and not from the news reporting (S1-07).</td>
<td>You use it as a, you know... you read something and you'll end up talking to a friend saying, “Oh, so what's going on with this development? “Who's doing that?” or you know, use it as a springboard to actually find out more (S29-08).</td>
</tr>
</tbody>
</table>

Table 4.25: Community views of the community newspaper

4.2.7.2 Mail outs

While a direct, street side mail delivery service is not available in the community, a centralised post office provides a post box for local residents to receive mail as well as a post restante service for tourists, short term residents and local Indigenous people from surrounding outstations. Catalogues, pamphlets, promotional material and government information are regularly included in the standard mail service, unless a request has been lodged with the post office to cease the delivery of such material. Residents recognise they receive a variety of information in their post office box, including letters, bills and packages as well as a large volume of advertising material. Those who subscribe to specific newsletters, periodicals, trade magazines or other publications prefer to receive such items in hard copy rather than electronically, primarily because documents can be referred to on a regular basis and do not require a computer to read. According to residents, newsletters or other
information sent via email can be easily deleted and as such, receiving a professional or trade periodical through the mail is seen to be preferable and more accurate.

Residents of the community also acknowledge they receive a large amount of promotional or advertising material in their postal boxes, which is not considered to be important or valuable. As such, residents do not rely on this material as a dependable source of information and have a tendency to 'bin it' immediately or skim read it before discarding it without giving it much attention. The data suggest that residents give this information recognition if it is considered to be of interest to the reader or may impact on them personally, their family, their social and recreational activities, their work place or aspects of the community that are important to them.

A quick flick and then in the bin. Or if it's something I'm interested in, I'll put it aside to have a good look at or to follow up, do something with it or if I want more information (S11-07).

Community organisations, sporting groups and local businesses also have the capacity to insert notices and advertising material into private post office boxes to promote specific services or advertise forthcoming events. However, according to the data, residents believe that this practice can work against a community group because material, other than formal and identifiable items of correspondence can be assumed to be junk mail and discarded. According to one resident, community fliers have to be especially creative to attract the attention and interest of local readers
if it is not to be discarded with supermarket catalogues and colour brochures advertising motoring accessories.

*I don’t always find that the mail is as good a way to, to get a message across, unless it’s presented in a really enticing way. I think because you do tend to get so much junk mail that you know, you’re getting all your specials and your (supermarket) catalogues and all that sort of stuff, I think that de-values anything else that’s in there. You sort of tend to look at everything as junk mail rather than just those particular items (S29-08).*

### 4.2.7.3 Internet use

Other than the Indigenous community sector, the internet is widely used as a professional tool to assist residents’ access information in their daily work practices or to research items of personal interest. Although people identify feelings of isolation because of the community’s physical location, residents recognise that “*the world has become a lot smaller*” with the expansion of the internet (C12&13-07). Data collected here suggest that the information accessed from government, professional or industry websites is considered to be accurate, up to date, instantaneous and at no cost. These factors are critical for local internet users as immediate access to accurate information promotes an expansion of personal knowledge, which assists residents in their planning and decision making on issues important to them.

While the use of the internet for professional and personal research is common across all community sectors, except
Indigenous groups, maintaining social networks via emails and websites does not appear to be a high priority for residents, other than for those who maintain contact with people living outside the community. Data collected here suggest that people contact friends and family either in person, by telephone or by text message. For example, young people believe that social networking web pages such as Twitter and Facebook may be initially popular but then interest and use drops considerably. While this mixed response may be due to the recent introduction of social networking websites in the community, young people identify that they instead prefer to participate in face to face contact or text messaging rather than emails and web pages to communicate. Indigenous and non-Indigenous young people however, are more likely to use the internet within an education setting and maintain extensive use, both within a classroom and residential environment, researching and gathering information for school related projects.

Data collected in this study indicate that internet use within the Indigenous community is limited, unless computer training and use is available in the workplace, training institutions or schools. For example, the ABS (2007a) census found that 20.1% of households containing Indigenous people were connected to the internet compared to 63.8% of non-Indigenous households. Data collected during discussions with two groups of young Indigenous males support this statistic and demonstrate that internet use is limited to a classroom situation to play educational games, listen to or watch music videos and research Australian football teams. Alternatively, tourists use the internet to email family and
friends while also gathering news and information from their usual place of residence. Some backpackers use the internet to post photos and descriptions of their travels on social media sites while the majority found it easier to share information by telephoning and emailing family members in their country of origin. Table 4.26 provides an example of internet use by non-Indigenous people in the community as well as Indigenous young people and backpackers.

<table>
<thead>
<tr>
<th>Source of immediate information</th>
<th>Indigenous internet use</th>
<th>Tourist internet use</th>
</tr>
</thead>
<tbody>
<tr>
<td>All these magazines you buy in Australia on machine equipment (have) been issued in Australia. If you get on to the internet and the American webpages, the things you can find out about the outboard motors that have been released in America, and won’t get released in Australia for another twelve months, because Americans get it before we do. And that assists me in forward planning. Like the boat we’re building here this year, I knew what engines we were going to put on it before they were even released in Australia (S22-08).</td>
<td>Do you use the internet? We used it once, when we were going fishing to check the weather. Do you use the internet at school? Yeah, lots of times. What about at home? Nah. What sites do you go to? YouTube, play games and listen to songs (G26-08).</td>
<td>I just use it (the internet) for MySpace and Facebook. Is that a good way for you to share information with friends? You would rather use Facebook than send emails? Yeah, and also pictures, for example, if one of my friends been to Perth and she has some pictures then I can see what it looks like... Hmm, I prefer calling or email. Just if you have it (Facebook), then you have to keep updating it every single day (C20&amp;21-08)</td>
</tr>
</tbody>
</table>

Table 4.26: Community use of the internet

4.2.7.4 Other methods of information provision

During each phase of the data collection process, residents provided comments about lesser known ways of providing information in the community. Although these methods were not specifically identified by large numbers of people, participant observations indicate they are an effective
communication tool. For example, parents and other community members identify weekly newsletters from the Catholic primary school and the combined district primary and high schools to be a successful method of providing information to the community. Although these two publications specifically target the parents, families, guardians and extended networks of school aged children, they provide school related and generalist information to all sectors of the community, other than tourists. Historically, newsletters from both schools have been used to promote a range of community and sporting events such as junior tennis coaching, fund raising activities, street parties as well as fetes and community markets.

Residents, particularly those new to the community, also identify the Shire's community directory to be a valued source of information. This annual publication provides the names and postal addresses of all residents as well as a list of commercial businesses, government agencies, Indigenous and community service providers, Shire facilities as well as local, state and federal government politicians. The directory also provides information on local commerce and industry, weather conditions, cyclone and storm warnings, bush fires, tourist information, public amenities, media outlets, religious groups, sporting clubs and fishing regulations specific to the local area.

No one looks up on the Shire’s site on the internet because they have this magnificent Shire directory, which is a very important resource full of information...
I know we have relatives coming up then I’ll photocopy relevant pages from the Shire directory and mail it to
them before they come. In fact I send a lot of
information from up here down there.

This Shire directory is brilliant; information about all sorts
of things (C11&12-07).

Although such written material is of benefit to people newly
arrived in the community, medium to long term residents
believe that the primary use of the Shire directory is to access
the telephone numbers of local residents and businesses. This
indicates that while most information in the directory is useful,
much of the written material is seldom read.

The Shire directory is a good resource to have. It’s like
having a local book with everybody’s names and
businesses in there. I don’t read all the written stuff in
the directory. I see it but I don’t read it. I mainly grab it
when I need a business name and number (S14-07).

Another method of sharing information is through the use of
public displays at fixed locations or organised community
events. One site regularly used by community groups is the
central area of the community’s shopping centre because it
maintains high pedestrian traffic and is a popular space for
residents to socialise away from the seasonal heat or
monsoonal rain. Another site to display information is the
community markets, which are held on a Saturday morning
during the dry season. This weekly event is popular with
residents and tourists as it offers opportunities to buy and sell a
variety of local goods and fresh produce, enables community
groups to provide information on key local issues while also
allowing organisations and sporting groups to raise funds
through the sale of refreshments and food items. More
importantly however, the Saturday morning markets provide residents with the opportunity to socialise.

*Public displays at the shopping centre or markets are the best ways to get information out as everyone is out on a Saturday morning at one place or the other (S9-07).*

4.2.8 Motivation to participate in the community

There are a number of specific factors that influence a person's decision to participate in local community events and formal information sessions. Personal interest, commitment to the community, to socialise and to have fun with friends and family are some of the reasons identified by local people. However, while residents actively participate and support a wide range of public events, they also acknowledge that their primary motivation for attending workshops or formal meetings is to gather information about issues of interest or importance to them as well as to their family, workplace, social networks and leisure and sporting pursuits.

4.2.8.1 Participation in workshops

According to data collected here, residents attend formal or structured information sessions if such sessions are believed to be related to work, sport and recreation, the school, the Shire or matters concerning the future development of the community. Residents in the workforce recognise that isolation from other regional or capital centres impacts on the availability of training opportunities. As a result, when work related information sessions become available, data suggest that there is a high level of local participation. Another factor that motivates people to access information by formal means is determined by the links, connections or attachment an
individual may have to the community and the activities or issues they believe to be important in the community. For example, a formal meeting described below highlights some of the key factors that motivate people in the agricultural industry, and other community sectors, to attend a public forum.

On 11 July 2007, representatives from the state's conservation council held a public meeting in the community to raise questions over the possible lifting of a moratorium on the commercial production of genetically modified (GM) cotton in the region. At the time, the use of GM products was prohibited in the state although local agricultural scientists had been testing the use of such crops in the region, and local growers and Shire representatives had been lobbying the (then) state government to allow GM cotton production in the region, for several years. The meeting attracted over 50 residents who were concerned about the negative, and positive, implications that a continuance of the moratorium may have on the expansion of the planned irrigation scheme and future prosperity of the agricultural industry. The meeting ended in heated debate with the vast majority of residents refuting claims made by the conservation council, primarily because maintaining the status quo on GM cotton would disregard the findings of numerous development and research projects in the region and greatly impact on the lives, lifestyles and livelihoods of local residents (Brann, 2007; Ministerial GMO Industry Reference Group, 2007).

Although the production of GM cotton in the region is a sensitive issue, the example provided above identifies two key
factors that motivate residents to participate in formal information sessions. Firstly, residents are motivated to attend workshops or information sessions if the subject matter is of personal interest to them and secondly, if the subject matter is of importance to the community. To determine which of these factors holds greater influence in motivating residents to access information through formal means, a series of questions was offered to research participants (usual residents) during semi-structured interviews, which are included in appendix one, ‘Interview questionnaire’.

Although data collected during semi-structured interviews and participant observations indicate strong support for the community and the issues and activities contained in it, an analysis of research findings suggests otherwise. Here, the data indicate that residents are more likely to access information using formal methods if they believe the information is of personal interest to them or relevant to their family, daily work practices, their lifestyle and social or leisure activities. Evidence of this is detailed in table 4.27, which shows a wide gap between those who would attend a workshop providing information that is of great personal interest and those who would attend a workshop that provides information of limited interest, even though the content of the workshop is considered to be consistently important to the community.
<table>
<thead>
<tr>
<th>Level of personal interest in topic</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very interesting to the individual and important to the community</td>
<td>27</td>
</tr>
<tr>
<td>Interesting to the individual and important to the community</td>
<td>21</td>
</tr>
<tr>
<td>Mildly interesting to the individual and important to the community</td>
<td>9</td>
</tr>
<tr>
<td>Not at all interesting to the individual and important to the community</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 4.27: Motivation to attend workshops that are important to the community but of varying levels of interest to the individual

These results indicate that as an individual's interest in a topic or issue reduces, so does the likelihood that they would attend a workshop to access information, regardless of the importance or impact on the broader community.

*If it ain’t interesting it ain’t important to me. I don’t care how important it is (to the community). I’m not going to go to anything that I’m not interested in... I’m more important than the community. The reason is, if I’m not interested in it, then why attend... If you’re interested, you’ll make the time for it. If it don’t sound interesting then no (S7-07).*

A second set of questions was then offered to residents although in this instance, greater emphasis was placed on the provision of information of varying importance to the community but of consistent, high levels of interest to the individual. As table 4.28 indicates, the spread of responses to research questions is less pronounced because, according to research participants, the motivation to attend a workshop or formal meeting relates specifically to whether the information being provided is of personal interest or importance to them.
Table 4.28: Motivation to attend workshops that are of interest to the individual but of varying levels of importance to the community

<table>
<thead>
<tr>
<th>Level of importance to the community</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very important to the community and interesting to the individual</td>
<td>21</td>
</tr>
<tr>
<td>Important to the community and interesting to the individual</td>
<td>17</td>
</tr>
<tr>
<td>Mildly important to the community and interesting to the individual</td>
<td>13</td>
</tr>
<tr>
<td>Not at all important to the community and interesting to the individual</td>
<td>12</td>
</tr>
</tbody>
</table>

Evidence from research participants indicates that if residents attend a workshop that is also important to the community, then it would be an additional benefit to the individual.

*If it’s of benefit to the community, then it’s a bonus* (S22-08).

Although tables 4.27 and 4.28 indicate that residents are more likely to access information from workshops that are of personal interest, data collected in semi-structured interviews and participant observations suggest that workshops relating to issues important to the community are also highly valued. While the majority of those attending the public meeting with the conservation council, as mentioned earlier in this section, had a personal or vested interest in removing the moratorium on GM cotton production, other residents recognise that some community issues still require the support of the general public even if the issue is of no great interest of importance to them.

*Let’s say for example, I’ll make something up. Let’s say they were going to lose the rodeo, which I couldn’t care less about really, but because it’s important to the community, it’s something I would attend and say that’s important to the fabric of (the community) so I probably would attend. Something like the rodeo I*
would go to because it’s important to other people around me. I think I’m a fairly motivated person who’s happy to be involved in communities. Community is important to that sense of belonging. It’s important to us as a society (S2-07).

An analysis of the data indicate that residents believe some community issues are worthy of public debate, especially if they appear to be a threat to the broader community. However, participant observations suggest that it is only when broader, community issues begin to impact personally on an individual, or others in their social network, that people consider a broader community issue to be part of their personal domain. Although increased media attention, public meetings and open discussion raises the profile of specific community issues, residents are still less likely to be motivated to act or address public concerns unless such an issue is perceived to impact specifically, or has the potential to impact, on their personal lifestyles and livelihoods. For example, rumours of the partial or full closure of the diamond mine in 2008 created discussion but minimal concern amongst residents until an initial 230 staff had their contracts terminated in January 2009. It was at this point however, that residents began to reflect more personally on the impact a full mine closure may have on their own circumstances and that of the community.

This study recognises that residents welcome the opportunity to attend workshops during business hours and if such sessions are part of their paid employment. However during the dry season, residents, particularly farmers and tourism operators,
prioritise their attendance at such workshops against their everyday work tasks. As such, accessing information through meetings, seminars or other formal mediums can only occur when such gatherings are considered to be of greater importance than daily work tasks or critical to their workplace activities. For young people, the motivation to attend workshops or information sessions primarily revolves around their personal interest in the subject or topic. Young people accept that in some situations however, they have very little choice in whether they attend information sessions, especially those activities arranged by the school and endorsed by a parent. Young people recognise that although they attend formal events begrudgingly, some enjoyment and benefit can be gained, particularly if undertaken with friends or peers. Young people also recognise their decision to attend a workshop depends on the seriousness of the issue and how great the impact would be on them and their social networks.

For Indigenous people, there is little distinction between those issues impacting on the community and those issues impacting on the individual. For example, native title, access to health services, poverty, overcrowding, employment and education are issues that not only have implications for the individual but also for the larger Indigenous community due to extensive and inter-related family networks and a broader commitment to improve Indigenous wellbeing and way of life. As a result, Indigenous people are likely to access information through workshops, meetings or formal gatherings about broader Indigenous issues rather than attend those that maintain a specific personal interest. Indigenous people
working within Indigenous and non-Indigenous organisations acknowledge that they play a central role in gathering information on behalf of their community and disseminating relevant and appropriate information to others as reflected in table 4.29.

<table>
<thead>
<tr>
<th>Time of the year</th>
<th>Importance of subject matter</th>
<th>Indigenous issues impact on Indigenous communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet season is the quietest time. This time of the year (August) is hopeless because everyone is so busy. Though if you’re really interested then you would make time to attend (S10-07).</td>
<td>Researcher - Would you attend a local workshop if the topic was very interesting to you and important to the community? If you scrap the community part then yes. Only if it’s interesting. If it was just all about the community and you weren’t even interested. If it’s something that involves you but like sometimes things involve you but you’re not interested in them really, like you can still do it. Did you go to that study skills thing? Yes, the weekend thing, the Saturday thing. That was a drag. If it was important to me then I would probably go still. It was a drag but it was fun... I guess it depends on how serious it is. If it was a bomb then I would go but if it’s just like cane toads are invading... Yeah get over it. Well a lot of people turned up to that study skills thing and nobody was interested in it. We were told we had to. My mum told me I didn’t have a choice at 6am on a Saturday morning (G41-08).</td>
<td>…at the end of the day my credibility lies with the community and with the (organisation). And the (organisation) speaks for the community, so that’s where my ties lie. So anything interesting to me will relate to my position and my superiors. (Elders say), “So this is interesting, you have to go get some feedback, bring it back to us”. Then the information that’s been passed on from the meeting to the community is where our faith lies... It’s a primary thing for us that we acknowledge the community. This is our best interests, from this point of view to the larger point of view of everyone. We’re here for the people (S27-08).</td>
</tr>
</tbody>
</table>

Table 4.29: Motivation to attend workshops that are of interest to the individual but of varying levels of importance to the community
4.2.8.2 Participation in community events

As with attendance at workshops and formal information sessions, data collected in this study identify several factors that motivate people to participate in community events. Here, residents recognise their attendance at public events reflects their close attachment to the community while also providing opportunities to socialise and support local groups with friends and family. However, finding the time to attend community events is an issue for residents involved in the tourism and agricultural sectors, particularly as the majority of events, activities and celebrations occur in the dry season.

Regardless of age, gender, cultural background, employment status or longevity in the community, residents believe that participation in local events is a fundamental component of living in the region. Annual activities such as the agricultural show, the community festival, concerts, local rodeos and horse racing, sports carnivals, market days, football matches, theatre performances, quiz nights, school fetes and other local celebrations are valuable and prominent events that attract a high community presence. Data collected during semi-structured interviews suggest that people mostly attend such events to offer their support or to give something back to the community. Research participants indicated that organising community events requires considerable voluntary input from individuals and organisations and as such, attendance is as much about acknowledging, supporting and appreciating the efforts of those responsible for arranging them. Community events also provide opportunities for community groups to raise funds, which in itself encourages greater incentive to attend,
support and contribute to what residents believe to be ‘a
good cause’.

<table>
<thead>
<tr>
<th>Participating in community events</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support</strong></td>
</tr>
<tr>
<td>I just respect anybody who</td>
</tr>
<tr>
<td>puts on an event no matter how</td>
</tr>
<tr>
<td>large or small in town and I’ll</td>
</tr>
<tr>
<td>go along to it to support the</td>
</tr>
<tr>
<td>organisers... ‘Often it’s a</td>
</tr>
<tr>
<td>fundraising type activity so you</td>
</tr>
<tr>
<td>want to go along and support the</td>
</tr>
<tr>
<td>community groups... But certain</td>
</tr>
<tr>
<td>events that I attend are for</td>
</tr>
<tr>
<td>supporting the organisations</td>
</tr>
<tr>
<td>behind them, yeah, so I, I do</td>
</tr>
<tr>
<td>make an effort to go along to</td>
</tr>
<tr>
<td>things even if I’m not overly</td>
</tr>
<tr>
<td>interested in it but then there’s</td>
</tr>
<tr>
<td>other events which I have on my</td>
</tr>
<tr>
<td>calendar from 12 months in advance</td>
</tr>
<tr>
<td>(S29-08).</td>
</tr>
</tbody>
</table>

Table 4.30: Motivation to participate in community events

As demonstrated in table 4.30, the data indicate that the act of giving something back to the community is strong amongst residents especially, although not exclusively, those who have lived in the area for over two years. This notion of reciprocal participation is evident with local residents who identify a willingness to ‘pitch in’, ‘take their turn’ or ‘help out’. If people are inclined not to help out, residents believe that the responsibility for organising community events remains with a limited few, which does not promote feelings of reciprocity and collective participation. Alternatively, travellers and backpackers attend community events if they find them interesting, entertaining and provide an opportunity to meet ‘some of the locals’. Events such as the agricultural show,
rodeo and events during the community’s annual festival provide occasions for short term residents to meet and exchange stories with longer term residents. Backpackers are particularly interested in activities that are low cost or free as well as those that enable people to sample some of the cultural experiences that come with living in a remote, northern Australian community.

One of the other factors to motivate people to participate in community events is an occasion to socialise and ‘have fun’ with friends and family, especially if it involves activities for children. According to those participating in semi-structured interviews, local events are important to the ‘social fabric’ of the community because the area’s remote location, seasonal weather conditions and busy work schedules of its residents does not provide regular opportunities for communal gatherings with friends and other community members. For example, the annual agricultural show, horse racing carnival or rodeo events enable those involved in the agricultural or pastoral industries to meet in an environment of mutual interest. Similarly, Indigenous and non-Indigenous young people take the opportunity to meet with friends and be entertained at social events, especially as there is a perception that the town does not cater well for this age group.

The street party is social. It can be a social event with lots of people and I can eat...
Just to get out sometimes when they have that street party, like you said, it’s good to get out.
It gives you something to do because sometimes you’ve got nothing to do.
Sometimes this town is just a ghost town.
Especially on weekends, like on Sunday's you take one step in to town. Where did everyone go?
It's like you arrive in town and nothing's opened. Unless there's like heaps of tourists and then everyone's open (G42-08).

4.2.9 The best ways in which people learn
The data collected during the study indicate that residents access information primarily by listening, reading, observing and practice, or a combination of any these elements. Although the take-up of information can bring with it new knowledge that has the potential to change attitudes, actions and behaviour, evidence here suggests that residents adopt different methods to access and gather information (both formally and informally) to suit a specific setting, situation or practice. Observing others and replicating their practices is identified as one of the key methods of learning while modifying and developing new practices through trial and error is another.

4.2.9.1 Trial and error
Data collected in this study suggest that one of the practical methods of learning is by trial and error. Here, research participants identify that by evaluating specific tasks, actions or approaches, they can maintain and enhance the initiatives that are successful or effective and correct, improve or discard those that are not. Trial and error is particularly identified as an effective means of learning by adults who are involved in agriculture and trades.

The practical side of things. I do tend to notice things more than most, how things work. Working on farms
and seeing things and thinking, 'that's good'. Learning began after I finished my apprenticeship. Working for myself is when the real learning began. If you made a mistake, you only made it once, never made it twice. Trial and error, and often watching things and working out how is the best way to go about this. Even in seeds (collection), earlier days more so, and all the time thinking 'is this the best way to do this, is there a better way, how to improve the cleaning of it?' One of the pieces of machinery I made, I had an idea in my head and then I spotted something else at one of the farms and thought that may do the job better. So I made this thing and changed it probably ten times before I got it to do what I wanted or was happy with it. And it does the job and it does it well, but it took a while ($10-07$).

Learning through trial and error therefore provides a process of refinement, which over a period, eliminates the practices and behaviours that do not effectively achieve desired goals or outcomes. Trial and error also supports attitudinal change in that individuals are first required to recognise that key elements of practice, either their own or the practices of others, is ineffectual and therefore requires some level of modification or transformation. Data collected here however, suggest that the concept of learning is not fulfilled or achieved through any one, singular practice but by a multitude of approaches.

### 4.2.9.2 Other mechanisms of learning

In this study, residents and visitors to the community recognise that the sharing and take-up of information is constant and
requires the adoption of unique and complementary learning practices to satisfy different learning situations and outcomes. According to the data, effective learning also incorporates effective communication whereby skills, such as active listening and questioning, are utilised to "pick through and follow up on the good bits of a conversation" (S09-07). In other circumstances, reading literature is required to gain a theoretical understanding of a specific condition, action or entity although some residents recognise that learning is enhanced if reading is supported by discussion, as the following example demonstrates.

I do reasonable well from reading and comprehending. The best way is to read something, comprehend something and try and explain it to someone else. You soon realise whether you’ve got the gist of something or not or whether you’ve just talked yourself into a circle. And they’re looking at you thinking “what are you trying to explain to me?” (S17-07).

4.2.9.3 Learning through observation and practice

This study identified that people living in and visiting the community overwhelmingly learn best by actively participating in specific tasks and gaining practical experience under the guidance of others. Although observation and practice is identified by all sectors of the community as the most effective way to learn, it is most common amongst Indigenous groups, young people and those working in practical roles\(^\text{10}\). Similarly, non-Indigenous

\(^{10}\) For example growers, agricultural practitioners and trades people.
people acknowledge that learning by observation and practice is effective if the learning is reinforced, clarified or supported by literature and conversations with other people. Although referring to a formal education context, young people similarly recognise that information provided through text books or classroom situations is best supported by practical experiences and discussion. If however some information is difficult to comprehend, young people acknowledge that their peers play an important role in interpreting information and translating it in a way that can be more easily understood.

Although the data suggest that practical knowledge can be reinforced with literature, young Indigenous people do not recognise this to be a great support to their learning because they have on average, low levels of numeracy and literacy\(^{11}\) ($S28.08; G31.08; Taylor, 2003). Indigenous young people prefer instead to be supported in their learning through reciprocal discussions and practical demonstrations in both classroom situations and participation in traditional activities as the following interaction with Indigenous artists explains.

> It is a big family thing as well as we're learning from each other so the (older) artist has learned a lot from us (young artists), our strength and the economic side of stuff from us and then we learn all the old ways and the culture stuff from them.

> Way we go - from old people to - country for us - stories from old people.

\(^{11}\) Compared to Indigenous and non-Indigenous young people of similar ages in mainstream education
So basically what she’s saying is all the knowledge she carries she puts onto the canvas... it’s almost like going to school because what they had to learn in the days when they were small, it was school for them because it’s a stepping point. It’s almost like you go to uni and then you’ve got to step up to actually graduate. So these guys have to step up to become a next elder. So they have to know all these things before they can actually become or recognised as an elder... That’s very important. It’s just like getting a degree (G31-08).

Similarly, programmes have been implemented into the school environment to increase educational outcomes for Indigenous young people. For example, an Australian rules football academy in the combined district primary and high schools links education to a comprehensive football programme, which aims to not only increase school attendance but also raise levels of numeracy and literacy through the introduction of practical exercises within a classroom environment. While there is no similar programme for young Indigenous women, young Indigenous men acknowledge in both semi-structured interviews and participant observations that they enjoy attending and learning at school, although attendance is somewhat inconsistent because of family and community issues, football schedules and climatic conditions. Similarly, young Indigenous people develop many practical skills during bush excursions with their parents, grandparents, aunties, uncles and other family and community members. Examples of effective learning practices, namely learning through observation and practice, peer supported learning and
learning through the use of mixed and alternate mediums, are provided in table 4.31.

<table>
<thead>
<tr>
<th>How people learn best</th>
<th>Peer supported learning</th>
<th>Mixed mediums of learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation and practice</td>
<td>Having like a personal experience, like actually</td>
<td>Researcher - Do you learn</td>
</tr>
<tr>
<td></td>
<td>doing it. Like if we learn something in class, I like</td>
<td>from being shown things out</td>
</tr>
<tr>
<td></td>
<td>doing an exercise on it. If I don’t get it, (my friend),</td>
<td>bush or do you learn in the</td>
</tr>
<tr>
<td></td>
<td>she’s really smart, she always helps me and like</td>
<td>class room?</td>
</tr>
<tr>
<td></td>
<td>the way she explains something, I’m like yeah I</td>
<td>Both, bush and classroom...</td>
</tr>
<tr>
<td></td>
<td>get that but the teacher explains it and I’m like, I</td>
<td>We just learn yourself, by</td>
</tr>
<tr>
<td></td>
<td>don’t know what you’re talking about...</td>
<td>watching. It’s easy</td>
</tr>
<tr>
<td></td>
<td>And in science like you get an equation, like in</td>
<td>throwing a net.</td>
</tr>
<tr>
<td></td>
<td>chemistry or whatever and you get an equation that</td>
<td></td>
</tr>
<tr>
<td></td>
<td>says if you put these two together, they’re going to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>blow up and just like yeah well. You kind of feel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>you’ve got to actually see it to work out why.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Then when it happens I remember...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sometimes the teacher explains it and you don’t</td>
<td></td>
</tr>
<tr>
<td></td>
<td>get it and then your friends explains it you and you’re</td>
<td></td>
</tr>
<tr>
<td></td>
<td>like yeah, I get it how you explain it kind of.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>They can explain it at your level (G41-08).</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.31: People learn effectively through observation and practice

Participant observations during cane toad expeditions, community gatherings and outdoor activities indicate that Indigenous young people (from a very young age) possess a high level of practical skill and knowledge associated with
traditional country including bush tucker\textsuperscript{12}, land use practices, land forms, water systems and native fauna and flora. For example, one regular and active young Indigenous member of the local cane toad group could recite the biological names for the native giant frog (Cyclorana australis) and the cane toad (Bufo marinus) and could tell the difference between the two (Australian Museum, 2010). With low school attendance and English as a second language, family members and other toad busting participants recognise that this Indigenous young male gained motivation and willingness to participate and learn about environmental issues because of his observation, socialisation and participation with family members, traditional elders, respected toad busting participants and other trusted people in his community (G43-09). Learning for this young participant is, as is with others, best achieved through observation and participation.

\textbf{4.2.10 Summary of the thematic analysis}

In stage one of the data analysis, nVivo software was used to tag and collate data chunks from the transcripts and field notes of participant observations, semi-structured interviews and a review of documents and artefacts. Data clusters of similar meaning were arranged and classified according to participant responses to interview questions. The results of this process were then documented, which provided further opportunities to clarify, review, assess and summarise the research data. During the period of writing, similarities and overlaps in the data were identified.

\textsuperscript{12} Native fauna and flora suitable for human consumption
After a further review, nine data categories became evident and include:

1. Tenancy in the community;
2. What people like about the community;
3. Groups people contact in the community;
4. Organisations people contact in the community;
5. Influential people in the community;
6. Methods used to source information in the community;
7. Methods of information provision in the community;
8. Motivation to participate in the community;
9. Best ways in which people learn in the community.

While these nine, similarly themed categories form the first layer of analysis, further investigation is required to refine and gain additional meaning from the data.

4.3 Data analysis stage two: Collapsing the data

Stage one of the analysis reported on nine categories that emerged from the data after the application of a thematic analysis using nVivo techniques. However, the categories described in the previous section predominantly present the results of interview question clusters. Additional analysis is therefore required to gain further confirmations and interpretations from the data, which is achieved through a process of category condensation (Miles & Huberman, 1994) and category collapse (Marshall & Rossman, 1999). The purpose here is to collapse these nine categories into a smaller number of themes.

4.3.1 Collapsing categories one and two creates Place

On close examination of the nine categories emerging from stage one of the analysis, categories one and two are found to have similarities in data. Both describe the length of time people live in the community and the characteristics that influence people's
decisions to stay in the community. For example, category one, ‘Tenancy in the community,’ identifies the connection between short-term residents and employment opportunities while category two, ‘What people like about the community’, identifies a close relationship between an attachment to traditional lands and Indigenous people. In the interests of streamlining category numbers and attempting to achieve further analytic meaning, these two categories are combined into one theme that is now titled ‘Place’.

4.3.2 Collapsing categories three and four creates Groups
Following the same process as identified in the previous section, scanning of the remaining seven categories identifies overlaps and repetitions in the data. Here, categories three, ‘Groups people contact in the community’, and four, ‘Organisations people contact in the community’, are found to contain sufficient commonality to collapse into one new theme, titled ‘Groups’. Both categories describe the formal and informal relations that residents develop and the role these relations play in meeting individual and community needs. For example, stage one of the analyses indicates that residents rely on close bonded relations to satisfy personal and social needs while the neighbouring diamond mine generates economic benefits across the region by creating employment and local trade. Groups, as a collapsed theme, now reflects both these categories.

4.3.3 Collapsing categories six and seven creates Information
A review of the remaining categories, using the same process as described in previous sections, reveals that categories six and seven contain similarities in the data. These categories, ‘Methods used to source information in the community’ and ‘Methods of information
provision in the community’, describe how residents access and exchange information amongst social networks both in and outside the community. For example, stage one of the analysis recognises that word of mouth is a popular medium to exchange information in the community although other communication methods, such as email and telephone, are more likely to be used as social networks move further away from the immediate community. These categories are collapsed into one theme, titled ‘Information’.

4.3.4 Collapsing categories five and eight creates People
As in previous sections, a review of category five is undertaken to determine similarities with other categories emerging from stage one of the analysis. This category, ‘Influential people in the community’, describes those who are perceived to be important to residents and the community as well as the characteristics that these influential people exhibit. For example, this category recognises that people who are held in high regard by residents contribute to the betterment of the community through their voluntary participation in events, activities, resource sharing and decision making regardless of wealth, longevity or position in the community. A similar review of category eight, ‘Motivation to participate in the community’, describes why residents attend community events, workshops and activities and the factors that influence their decision to do so. For example, it is recognised that people support community activities with their own social, cultural, physical, political or economic resources ‘give something back to the community’. The data contained in category eight demonstrates similarities and repetitions with data contained in category five and as such, both categories are collapsed to form the theme ‘People’.
4.3.5 Collapsing category nine into Place, Groups, Information and People

Using the same process of condensation described in the previous sections of stage two of the analysis, a review of category nine is undertaken to determine whether there are similarities with other data clusters. The category, ‘The best ways in which people learn’, describes the manner residents take up and retain information through the use of practical experience and under the guidance of others. For example, this category explains how young Indigenous people develop hunting skills by observing, replicating and participating in hunting activities with older Indigenous family and community members. The review determines that data from category nine lacks the volume to justify a single theme although maintains similarities and overlaps with all other categories. Therefore, category nine is collapsed into the themes of ‘Place’, ‘Groups’, ‘Information’ and ‘People’.

4.3.6 Summary of data analysis stage two: Collapsing the data

A thematic analysis using nVivo software in stage one of the analysis identified nine categories in the data. The results of the analysis provides clustered responses to semi-structured interviews, participant observations and a review of documents and artefacts, which requires further examination and condensation to extract additional meaning from the data. This is achieved by collapsing nine categories into a smaller number of themes. Further examination of the data identifies that the nine categories can be collapsed into four specific themes.

During the condensation of the data, categories one and two are collapsed into the theme ‘Place’, which describes the length of time people live in the community and the characteristics that
influence people’s decision to live in the community. Categories three and four discuss the informal and formal groups people contact in the community and are collapsed into the theme ‘Groups’. Categories six and seven are collapsed into the theme ‘Information’ because of similarities in the way in which residents access information in and outside the community. An examination of categories five and eight reveals an overlap in data relating to human action and participation in the community, which is collapsed into the theme ‘People’. A further review of the data contained in category nine, ‘The best ways in which people learn’, identifies similarities and consistency across all categories and as such, is collapsed into the four themes of Place, Groups, Information and People. The collapsing of categories connects data similar in meaning and reduces nine categories into four themes. These four key themes now provide streamlined and meaningful data, which will inform the development of diagrammatic mapping in stage three of the data analysis.

4.4 Data analysis stage three: Visual representation of key themes
The four themes identified in stage two of the data analysis are Place, Groups, Information and People. To provide clarity and assist in the further refinement of the data, stage three of the analysis uses diagrams as suggested by Frakes et al (2010), Gill (2009), Mader et al (2008), Millen et al (1997) and Varkevisser, Pathmanathan and Brownlee (2003), to visually represent the key findings emerging from these four themes. Diagram one will review the theme Place and identify what specifically people like about the community, what keeps people in the community, what activities people do in their leisure time and whether local people consider living somewhere else. Diagrams two and three provide a visual description of the theme Groups to reveal the level of contact people have with formal and informal groups, the level of influence these groups
have in the community as well as the reasons why residents initiate and maintain contact with informal groups. Diagrams four, five, six and seven examine the theme Information and detail the manner in which people access information in and outside the community, the methods used to provide information to the broader community and the methods in which local people take up information and learn best. Diagrams eight, nine and ten then describe the theme People and identify those residents who are perceived to be influential, the characteristics influential people exhibit as well as the factors that motivate people to participate in community events, activities and workshops.

Stage three of the data analysis uses diagrams to provide a visual image of the four themes identified in stage two of the analysis and incorporates the broader and collective views of short, medium and long term residents in the community. Each diagram will use different coloured lines to distinguish between data clusters and use different formatted lines to depict the density of each. A full, unbroken line will signify dense data clusters, a broken line acknowledges medium density clusters while a dotted line recognises weak data clusters. For example, when asked 'What do you like about living in the community?', residents identified 'the environment' 21 times (top third of all collected data), 'the people' 14 times (second third of all collected data) and 'the climate' 6 times (lower third of all collected data). Diagram one therefore represents these results as a full, unbroken blue line for 'the environment', a broken blue line for 'the people' and a dotted blue line for the 'the climate'. The diagrams provided in stage three of the analysis offer a visual representation of clustered data to identify the broad views of the community and enable key findings to emerge from each theme.
4.4.1 Place

In stage two of the analysis, categories one 'Tenancy in the community' and two 'What people like about the community' were collapsed to form the theme Place. Stage three of the analysis will use one diagram to describe the relationship between short, medium and long term residents and the community. Attention is specifically given to what people like about the community, what influences people to stay in the community, what people prefer to do in their leisure time and whether people consider living somewhere else. The most notable finding to emerge from the theme Place is the relationship between place and identity as described earlier in Chapter Two (2.6.3).

4.4.1.1 Place: Diagram one

In describing the relationship between people and place, diagram one identifies that the environment is the characteristic most valued by residents in the community while work, the people, lifestyle and remote location attract medium levels of support. Similarly, people recognise that work opportunities and lifestyle are the two prominent reasons to come to and remain in the community while close family ties and 'this is home' provide lesser reasons to stay. The availability of diverse outdoor leisure activities is identified by residents as a central feature in maintaining an enjoyable lifestyle, which includes participation in outdoor leisure pursuits such as camping and hiking as well as water based activities like fishing and boating. As a result, people do not consider moving to another community in the immediate future, which is illustrated in diagram 4.1.
The Relationship between People and Place

Participant Responses

Leisure time
- Outdoors - camping, hiking, hunting
- Water based activities - fishing, boating, swimming
- Domestic activities - gardening, cooking etc
- Exercise
- Meet with friends
- Events and entertainment
- Don't have leisure time
- Hobbies
- Study
- Shopping
- Drink and socialise
- Volunteer
- Workshop activities

Like about the Community
- Friends
- Climate
- This is home
- Lifestyle
- Small
- Safe
- School
- Family
- Work
- The people
- Fishing
- Environment
- Remote location
- Welcoming community
- This is my country - I belong here
- Give something back to the community

Tourist Responses

Diagram 4.1 - Legend

What people like about the community
- High responses
- Medium responses
- Low responses

Leisure time activities
- High responses
- Medium responses
- Low responses

Why people stay in the community
- High responses
- Medium responses
- Low responses

Prefer to live somewhere else
- High responses
- Medium responses
- Low responses
4.4.1.2 Place: Results

The data in stage one of the analysis recognise that people come to the community because of work opportunities. Although diagram one identifies that continued employment is important in attracting people to, and retaining them in the community, the environment and a range of leisure activities associated with the environment are central to maintaining an enjoyable lifestyle. These three elements, income generation, lifestyle and the environment, are key features to living in the community and give reason for long term non-Indigenous residents to consider the community as home. Alternatively, people who live in the community for short to medium periods primarily come to the region for work related purposes and, although enjoy aspects of the environment and outdoor leisure pursuits, still maintain close links with other locations either in Australia or overseas. As a result, people apply different definitions of ‘home’, which is most notable during the month of December when people are either ‘staying home (in the community) for Christmas’ or ‘going home (to some place else) for Christmas’. According to Hauge (2007), the emphasis people attach to ‘home’ is in most cases, the most important place in an individual’s life and will therefore be of most influence to an individual’s identity.

Indigenous people also maintain a close attachment to the environment although for different reasons. As fewer Indigenous people participated in semi-structured interviews by comparison to non-Indigenous people, diagram one does not clearly reflect the relationship between Indigenous
people and traditional land. However, data collected during participant observations indicate that Indigenous attachment to country and closeness to family are the primary reasons Indigenous people stay in the community rather than for work or lifestyle purposes. Hence, Indigenous people, acknowledge that "this is my country – I belong here" (S28-08).

4.4.2 Groups
A review of the categories in stage two of the analysis identified data overlaps in the categories, ‘Groups people contact in the community’ and ‘Organisations people contact in the community’. These categories were collapsed to form the theme Groups. Two diagrams are used in stage three of the analysis to describe the relationship between people and groups. Diagram two identifies the groups people have regular contact with and the groups believed to be influential in the community while diagram three reveals the key factors that motivate people to develop and maintain connections with groups. Diagrams two and three also recognise that people living in and visiting the community maintain different relationships with groups and as such, identify different factors that make each group influential.

4.4.2.1 Groups: Diagram two
Diagram two identifies that people maintain high levels of contact with friends and immediate families, social groups, sporting clubs and government agencies as well as medium levels of contact with businesses, the library, schools, Toadbusters, the leisure centre, social friends and work colleagues. Tourists maintain high levels of contact with organisations associated with travel activities such as the
visitor's centre, caravan parks and tour operators while backpackers are more likely to contact supermarkets, internet cafés and employment agencies to secure short term paid work. Diagram two also identifies the groups believed to be influential in the community including government agencies (as a collective), the Shire and the diamond mine while community groups such as Toadbusters, the agricultural society, the visitor's centre, Indigenous groups as well as local sandalwood producers, primary industry groups and the regional development commission maintain medium levels of influence.

The use of diagrams in stage three of the analysis also reveals that residents do not have strong links to groups outside of the community and therefore, external groups are perceived to have limited influence on the activities that occur inside the community. Although residents identify high levels of contact with family and friends, social groups, sporting clubs and government agencies, the data indicate that contact with groups primarily occurs at a local level. For example, of the 78 people participating in semi-structured interviews (not including follow-up interviews), two residents identified work related contact with government agencies in Perth and Canberra. Therefore, the remaining contact with government organisations, as illustrated in diagram two, is undertaken inside the community.

While diagram two demonstrates that people believe the Shire, government agencies and the diamond mine to be the most influential groups amongst all others in the community,
the data also suggest that external, parent organisations of those same groups are not recognised or considered to be important. For example, the diamond mine is seen as an influential and integral group in the community although its international parent company is not mentioned throughout the period of research. Similarly, the district primary and high school is often frequented by parents and believed to hold medium levels of influence but the state government department for education is not. This indicates that being situated locally in the community is an essential characteristic to being viewed as influential, or more specifically, that outside groups are afforded limited recognition unless they have a presence in the community. The common feature amongst groups considered to be influential however, is that they are locally based and invest in the social, cultural, physical, political, economic and environmental structures of the community.
4.4.2.2 Groups: Diagram three

Diagram three is also used to describe the theme Groups, particularly the key factors that motivate people to initiate and maintain contact with informal and formal groups. Here, high density clusters indicate that people initiate and sustain contact with informal groups to socialise, play sports, get fit and meet others with common interests while medium density clusters suggest that people develop and maintain contact with groups for business and work related purposes. The data also suggest that residents primarily gain friendships and a sense of belonging from their membership to informal groups while also, although to a lesser degree, support, socialisation, an extended family, knowledge, reciprocity and connections to business or work associations. Diagram three suggests that people take up group membership with those who have similar interests and common views, values and attitudes and to a lesser extent, shared experiences through families, histories, outlooks and sports and fitness. As such, the informal groups people are most likely to be connected to involve immediate family members, friends and their families, work colleagues and people involved in the same sports or fitness activities. It is also acknowledged that Indigenous residents maintain contact with Indigenous family groups while non-Indigenous people have medium contact with industry groups or no groups at all.
The Relationship between People and Informal Groups

Diagram 4.3 - Legend
The basis for being part of groups
High responses
Medium responses
Low responses

Benefits from being part of a group
High responses
Medium responses
Low responses

What people offer back to groups
High responses
Medium responses
Low responses

Common characteristics of group members
High responses
Medium responses
Low responses

Composition of groups
High responses
Medium responses
Low responses

Participants

Don't mix with groups
Industry groups
Indigenous family groups
Friends and their family
Children
Identity
Support
Similar interest
Sport/fitness
Socialising
Similar outlook
Community action
Shared history
Sense of community

Views, values and attitudes
Friendships
Business and work related
Sense of belonging
Knowledge
Mental health
Reciprocity

Family
School
Drinking
View, values and attitudes
Participants

Sustainable livelihoods
Traditional leadership
"
4.4.2.3 Groups: Results

One of the key results emerging from the data presented in diagrams two and three is the nature and diversity of human connections within the community. Diagram two in particular identifies that residents maintain relations with small, informal groups of people with similar interests, attitudes or values, such as family networks and sporting clubs, as well as with larger, more formal groups that maintain local governance and legislative responsibilities, such as the Shire. Diagram two also recognises an absence of relationships with groups outside the community, which indicates the importance of maintaining a localised, physical presence. The varying nature of these connections suggests that people engage in a number of group relations that involve strong, weak, linking and absent ties.

According to the data presented in diagrams two and three, the most influential groups in the community are government agencies, the Shire and the diamond mine primarily because of their capacity for employment and income generation, decision making and an investment in community infrastructure. These groups are seen to be influential because their economic and political power impacts on the livelihoods and lifestyles of residents more than any other group in the community. However, the data also suggest that informal and community based groups have the capacity to foster and generate community action through a wide association of social networks. The close ties that exist amongst group participants enable information to be effectively and reciprocally transferred by trusted sources.
which generates a sense of authenticity and meaning amongst its members.

4.4.3 Information

In stage two of the data analysis, two categories, 'Methods used to source information in the community' and 'Methods of information provision in the community', were collapsed to form the theme Information. Stage three of the data analysis uses diagrams four, five, six and seven to present the key findings from this theme. Diagram four identifies the manner in which people access information inside and outside the community, while diagram five describes the use of formal methods to transfer information such as the community newspaper, the postal service, the internet, the radio as well as other popular sources of information provision. Diagram six collates data from diagrams four and five to suggest that people access information through four specific mediums; as personal or professional contacts, electronic sources, documents or from specific venues. Data collected from tourists is presented separately in diagram six to ensure the results are not skewed by a smaller, transient population group. Diagram seven details the manner in which people receive information to best support effective learning outcomes.

4.4.3.1 Information: Diagram four

Diagram four describes the theme 'Information' and more specifically, the manner in which people access information from inside and outside the community, how people gather information on issues they believe to be interesting or important and how people prefer to receive information. As a result, word of mouth and the local newspaper are
considered to be the most popular methods of gathering information on events or issues occurring in the community followed by radio, notice boards or personal contacts and social networks. Radio and television are used most often to gain information on events occurring outside the community while word of mouth, the internet, the state-based newspaper and family and friends are used as a secondary source of information. For issues that are of personal interest or importance, residents gather information most often from the internet and to a lesser extent, through word of mouth and family and friends. The internet and word of mouth are also the preferred methods for people to receive information followed by workshops and a combination of different sources.

Alternatively, tourists gather information about events and activities in the community through word of mouth, the visitor’s centre, tour operators, books, brochures and to a lesser degree, notice boards. The internet is used more than other sources to keep abreast of events outside the community although word of mouth, the television and family and friends also provide some information. The internet is also used to access information that is important or interesting, although as discussed earlier in 4.2.6.1.1, ‘Word of mouth’, tourists prefer to receive the majority of their information by word of mouth from tour operators, other tourists and local residents.

Diagram four however, and therefore diagram six, do not adequately reflect the position of Indigenous people in
relation to the theme Information. In stage one of the data analysis, Indigenous people recognise that word of mouth is most used to access and exchange information. The internet on the other hand is limited to those Indigenous people who participate in school, computer training or workplace activities. Therefore it would be correct to assume that word of mouth and the internet are the most prevalent and popular means to access information amongst non-Indigenous people while word of mouth is the most effective means to transfer information amongst Indigenous people.
Information Sources for Local People

- Television
- Work
- Text message
- Telephone
- Local radio
- Combinations
- Word of mouth
- Mail
- Shopping centre
- Leisure centre
- Visitor's centre
- Family & friends
- Library
- Internet and emails
- Tour operators
- Books, and brochures
- Tourist participants
- Other publications
- National State
- Local newspaper
- Positive
- Negative
- Not interested
- Community activities
- Personal relationships and networks
- Reading
- Workshops
- Industry meetings
- Self reliant
- Notice boards or fliers

Diagram 4.4 - Legend
Information from within the community
High responses
Medium responses
Low responses

Information from outside the community
High responses
Medium responses
Low responses

Information that is important or interesting
High responses
Medium responses
Low responses

How people prefer to access or receive information
High responses
Medium responses
Low responses
4.4.3.2 Information: Diagram five

In stage one of the data analysis, the community newspaper, the postal system and the internet were identified as popular mediums to access information. Diagram five details how effective these formal information sources are while also presenting data on the use of radio stations and other mediums of information transfer. While one of the most noted sources of local information is the community newspaper, diagram five identifies the mixed reactions offered toward the once weekly publication by local residents. While the community newspaper maintains a high readership amongst residents, tourists are mostly unaware that the publication exists while backpackers or travellers employed in seasonal or short term work use the newspaper to search for employment opportunities and some local news.

Residents of the community also receive information through the postal service, although it is acknowledged that pamphlets, flyers and advertising material are only read if the material is of interest or important to the reader or the community. Diagram five also suggests that people do not read advertising or promotional material and at best, offer a brief skim read before disposing of it in the rubbish bin. The internet is used by people to gather information, primarily for work or educational purposes or to undertake personal research in the home. Tourists use the internet to plan their holidays and maintain contact with family and friends in other parts of Australia or overseas while Indigenous people have limited access and use of the internet.
The national public radio service's regional facility is identified as the most popular means to access accurate local information while Indigenous radio and two commercial radio stations receive medium levels of support from residents. Although Indigenous radio provides information specifically targeting Indigenous people living in the region, the two commercial radio stations are used more for light entertainment rather than as a source of information. Diagram five also acknowledges that people access and exchange information mostly by word of mouth while also acknowledging the use of school newsletters and the Shire directory as important and well used local resources.
4.4.3.3 **Information: Diagram six**

Further examination of the theme Information and the data presented in diagrams four and five identifies that people access information through four specific methods namely; personal and professional contacts, electronic sources, documents and venues. According to the strength and diversity of data clusters as demonstrated in diagram six, information is most commonly shared through personal and professional contacts and electronic resources, followed by documents and venues. However, diagram six also acknowledges that tourists use all four methods to access information, relying on electronic sources (the internet), documents (brochures, books and notice boards), venues (the visitor's centre and library) as well as their personal and professional contacts (other travellers, tour operators and family members).
Four methods in which local people access information

Diagram 4.6 - Legend
Information from within the community
High responses
Medium responses
Low responses
Information from outside the community
High responses
Medium responses
Low responses
Information that is important or interesting
High responses
Medium responses
Low responses
How people prefer to access or receive information
High responses
Medium responses
Low responses

Participant Responses

Venue

Personal/Professional Connections

Electronic

Mail

Tourist Participants

Documents

Electronics

Library

Internet & emails

Notice board & fliers

Telephone

School newsletters

Notice boards & fliers

Shire directory

Documents

Newspapers

Other publications

Documents

National

Positive

Local

Negative

State

Tour operators

Visitor's Centre

Personal Contacts

Venue

Family & friends

Documents

Notice boards & fliers

Documents

Books & brochures

Local radio

Library

Television

Notice board & fliers

Tourists Centre

Word of mouth

Documents

Books & brochures

Tour operators

Telephone

Internet & emails

Tour operators

Television

Internet & emails

Tour operators

Telephone

Internet & emails

Tour operators
4.4.3.4 Information: Diagram seven
In the previous section, diagram six identifies that people are more likely to use personal and professional connections and electronic sources to access information over documents and venues. Diagram seven recognises that personal and professional connections are also the most preferred means for people to take up information. Practical methods of learning, such as listening to and observing others, is identified as the most common means for people to take up information. A lesser number of people learn best by talking with other people or trial and error while reading documents is considered to be another method of learning.
4.4.3.5 Information: Results

Diagrams four, five, six and seven identify that usual and transient residents of the community gather information in a variety of ways, from a number of sources and for a number of specific purposes. However, two results emerge from the theme Information. The first is that people make extensive use of informal and non-formal methods to exchange information in the community as opposed to more formal approaches. This exchange is central to the concept of communities of practice as people gather information and learn through their observations, conversations and practical experiences within their social networks, as explained earlier in 2.73, 'Communities of practice'.

The second result to emerge from the theme Information is that people are more likely to accept and take up information that is of interest to them, or the community, if it is provided from a trusted source. This indicates that the manner in which information is exchanged between people almost becomes irrelevant as greater attention is given to 'who' or 'where' information comes from rather than 'how' it was provided. An example of this was presented earlier in Table 4.19 of this chapter:

People who provide me with accurate information.
People you trust more because you have known them longer. People who I think will know the answers.
People you trust to tell you the truth even if you don't want to hear the truth (S09-07).
For this community, with a population of 5,619 (ABS, 2007a) and an extensive association of bonded social networks, the use of language and verbal communication are key factors in the effective exchange of information. However, diagrams four, five, six and seven also demonstrate that a link exists between the level of trust afforded to an information source and the subsequent trust afforded to the information provided by that source. This in turn impacts on whether information is perceived to be accurate, authentic and reliable by people or whether further research is required to determine clarity from another, more trusted source.

4.4.4 People
In stage two of the data analysis, the categories ‘Influential people in the community’ and ‘Motivation to participate in the community’ formed the theme People. In this section, diagram eight details the characteristics commonly displayed by individuals who are perceived to be influential both to individuals and in the community. Further examination of the data recognises that the characteristics identified in diagram eight can be collated in to four groups. Diagram nine identifies these four groups as relationships with people, relationships with community, personal or leadership attributes and elected or paid position in the community. Similarly, diagram ten presents data on the factors that motivate people to participate in community activities and events.

4.4.4.1 People: Diagram eight
In stage one of the data analysis, residents identify those who are influential in their own lives and the community. Diagram eight therefore recognises the most influential people for
individuals are their partners, immediate family members, a surrogate family (of close friends) and work colleagues while lesser levels of influence are found amongst extended friends, long term residents and people who are respected, trusted and honest. The assumed characteristics of influential people include the capacity to form close and personal relations with others, experience and expertise in a specific field or a level of respect, trust and honesty from others. In terms of influential status in the community, the data suggest that senior staff and elected members of the Shire, long term residents and local business people are considered important. However, an equally high level of negativity and distrust of people in these same positions indicates that access to wealth, decision making and longevity are not universally considered to be characteristics of influential behaviour.

While Indigenous elders and leaders are recognised as being important amongst Indigenous people, diagram eight suggests that those who participate in community action and maintain strong community attitudes are believed to be most influential. Other factors in determining influential behaviours, although to a lesser degree, include people who invest time, energy, skills and resources in the community as well as those who are believed to be respected, trusted and honest. Diagram eight also identifies the characteristics that motivate people to become active members in the community, which according to the data, include people who have an interest or attachment to the community and the issues, events and activities that occur within its boundaries. As such, people
participate in local activities because of a desire to give something back to the community and gain membership or a sense of belonging to the community. This is in contrast to those who are motivated to participate in community initiatives to satisfy personal gain or as part of a designated responsibility associated with a paid or elected position.
Diagram 4.8 - Legend

Influential people to the individual
High responses
Medium responses
Low responses

Characteristics of people who are influential to others
High responses
Medium responses
Low responses

Influential people in the community
High responses
Medium responses
Low responses

Characteristics of people who are influential in the community
High responses
Medium responses
Low responses

Motivation to participate in the community
High responses
Medium responses
Low responses

Characteristics of Influential People

- Motivated and energy
- Give something back to community
- Being part of community
- Community interest
- Leadership
- Community action
- Community attitudes
- Tourism operators
- Local government staff
- Knowledge
- Sports people
- Indigenous elders
- Elected members
- Friends
- Respected, trusted & honest
- Long term residents
- Experience
- Self interest
- Motivation to participate
- Like minded people
- Natural instinct
- Business people
- The police
- Partner and immediate family
- Work colleagues
- Those with expertise
- Teachers
- Personal relationships
- Negative statements about perceived influence
- Need to belong
- Money
- Longevity
- Farmers
- Money
- Longevity
- Farmers
4.4.4.2 People: Diagram nine

A further review of diagram eight reveals that it is possible to collate the characteristics associated with influence into four specific groups. Here, diagram nine identifies that people are influential because of the personal relations they maintain, the personal attributes they promote, the relations they develop with the community or the paid or elected positions they perform. People in the community, primarily medium and long term residents, believe that people in paid or elected positions are influential because of the key tasks and decision making responsibilities they undertake. However, diagram nine also indicates a high level of negativity toward people in these roles, which suggests that individual and community influence is formed around more than a paid or elected position, longevity in the community or access to property personal or personal wealth.

According to diagram nine, people who form close personal and professional relations, including partners, immediate family members, close friends and work colleagues, are the most influential in an individual's life. Residents also believe that influential people exhibit a number of leadership attributes such as an ability to develop personal relations with others, levels of experience or expertise in a specific field, tenancy in the community or considered to be honest, respected and trusted by others. However, one of the other characteristics identified in the data is the notion of influential authenticity, which is determined by an individual's capacity and willingness to voluntarily and selflessly participate in local activities to bring about change and transformation.
Influential people in the lives of local residents?

High responses
Medium responses
Low responses

Why are they influential (to individuals)?

High responses
Medium responses
Low responses

Who are the influential people in the community?

High responses
Medium responses
Low responses

Why are they influential (to community)?

High responses
Medium responses
Low responses

What motivates people to be active community members?

High responses
Medium responses
Low responses

Diagram 4.9 - Legend

Influential people - Breakdown into Specific Categories

Personal attributes

Experience
Personal relationships
Respect, trust, honesty
Give up time
Leadership
Knowledge
Like minded
Natural instinct
Longevity
Money
Self interest
Expertise
Work ethic
Motivation and energy

Personal connections

Partner and family
Work colleagues
Friends
Sports people
Long term residents
Indigenous elders

Relationship to community

Community interest
Give back to community
Be part of community
Need to belong
Community action
Community attitudes
Community minded people

Paid or elected positions

Elected members
Senior shire staff
Business people
Negative influential people
Tourism operators
Farmers
Government staff
Teachers
The police

Participants
Responses
4.4.4.3  People: Diagram ten

The theme People contains data describing the factors that motivate individuals to participate in community activities. Data presented in stage one of the data analyses suggest that people voluntarily access information and take up new knowledge if they believe an issue, event or activity is of specific interest or importance to the community and/or to them personally. However, diagram ten indicates that people are more likely to act or participate in community initiatives if they consider the net result of their actions, or inaction, has the capacity to impact on important aspects of their life. In this community, this includes family, the home, the workplace, social networks as well as sports and leisure activities. For example, diagram ten suggests that people maintain high and medium levels of participation in activities that are considered to be personally interesting or important but have diminishing levels of community significance. Alternatively, people maintain high and low levels of participation in activities, events or issues that are important to the community but are of diminishing interest to them personally. In other words, individual action is more likely to occur if residents believe that broader community issues are likely to impact on them personally, or more specifically their livelihood or lifestyle.
Diagram 4.10 - Legend

Motivation to participate - community interest
High responses
Medium responses
Low responses

Motivation to participate - personal interest
High responses
Medium responses
Low responses

Motivation to Participate in Community Activities

Participant Responses

- Community located
- Family involvement
- Personal space
- Supports the community
- Give something back to the community
- Attending a workshop that is
  - Very interesting personally and important to the community
  - Moderately interesting personally and important to the community
  - Not at all interesting personally and important to the community
- Interesting personally and important to the community
- Important to the community and personally interesting
- Not at all important to the community and personally interesting
- Social activity
- Fun
- Time
- Depends on the kids
- Needs
- Guilt
- Energy
- Cost
- Individually located
- Depends who is involved
- Depends on who is involved
- Very important to the community and personally interesting
- Important to the community and personally interesting
- Not at all important to the community and personally interesting
4.4.4.4 People: Results

While diagram eight recognises people who are influential to individuals and the broader community, the key characteristics exhibited by influential people namely, the personal relations they maintain, the personal attributes they promote, the relations they develop with the community and the tasks and responsibilities they perform in paid or elected positions are identified in diagram nine. However, the data also suggest that people differentiate between those who are (or should be) influential because of their position in the community and those who are influential because of their participation in the community.

Residents recognise that non-Indigenous people are influential in the community because of longevity, property ownership or the appointment to paid or elected positions. However, far greater authenticity is afforded to those who are influential because of a demonstrated connection to others in the community, the personal attributes they exhibit or the relationship or attachment to the community. Influential authenticity is granted to those who demonstrate a commitment to the community, or aspects of it, to bring about social change. For instance, people have lived in the community for more than 20 years, have generated wealth from property and business or maintained paid or elected positions in the community but are not considered to be influential. Alternatively, there are individuals who have lived in the community for very short periods of time, who do not hold positions of power and do not generate wealth from
business although are seen to be influential, both in the lives of others and the broader community. Residents therefore recognise the link between an individual’s level of community participation and their level of influence.

In what first appears to be contradictory to the findings described in diagrams eight and nine, diagram ten indicates that people are more likely to participate in community activities or events that are closely associated with their own personal interest rather than the interests of the broader community. However, data identified in diagram ten reinforce the finding that individuals who participate and generate activity in the community are seen in isolation from the greater majority and are therefore believed to be influential. In other words, people who are motivated to participate in activities specifically for the betterment of the community are set apart from the greater population who are motivated to participate in community activities to satisfy their own personal needs. These people are therefore considered to be influential.

4.4.5 Summary of visual representation of key themes
The use of diagrams in stage three of the data analysis enables the further examination and refinement of the themes Place, Groups, Information and People. As a result, key results have emerged from the condensed data in each theme. Diagram one examines the theme Place and the relationships that exist between people and the features most valued in the community. The environment is considered to be the most liked characteristic of the community.
and as such, residents maintain high levels of participation in outdoor leisure activities. Similarly, varying work opportunities and a relaxed lifestyle encourage people to live in the community for longer than expected periods of time. One of the key results to therefore emerge from the theme Place, is the relationship between people and place and in particular, the manner in which concepts of place influence notions of home and identity. An example of this is demonstrated in the way people of differing tenancy view the community and its surrounds; Indigenous people (this is my country – I belong here), long term residents (this is my home), medium term residents (this is home for the time being) and short term residents (home is somewhere else).

Diagrams two and three explore the theme Groups and the relationship between people and formal and informal groups in the community. One of the key results emerging from the data is that people maintain high levels of contact with informal groups such as friends and their families, social groups, sporting clubs and work colleagues and high levels of formal contact with collective government agencies, specifically within the workplace. Social networks within an informal setting foster close bonds between group members, which in turn, promote the development of reciprocal relations and a sense of belonging within clusters of likeminded people. Alternatively, contact with formal groups is more likely to be associated with service delivery, information gathering or legislative responsibilities, which result in the formation of one-way relations that do not enable the establishment of reciprocal relations or an equal exchange of information between people on the inside of organisations and people on the outside.
Two results also emerged from the data contained in diagrams four, five, six and seven. The first identifies that people access information from various sources in the community using most prominently informal methods of exchange. Although formal learning practices still play a role in the transfer of information, particularly in schools or in workshops, informal learning practices remain central to community learning because information is more effectively taken up as new knowledge through practical activities such as observation, conversation and participation within social networks. The common method for sharing information in an informal context is through word of mouth.

The second result to emerge from diagrams four, five, six and seven is that people accept and take up information from a trusted source. Here, the data indicate that people are likely to give more attention, value and respect to a source of information, be it a person, electronic transmission, document or venue, if there is a personal, subjective history of providing reliable, relevant and accurate information. The manner in which information is provided to people, such as word of mouth, radio, newspapers and the internet, then becomes irrelevant as long as the information comes from a trusted source. Therefore, the trust that an individual places in an information source greatly impacts on whether the information, provided by that source, is trusted or perceived to be accurate, authentic and reliable by the individual.

Diagrams eight, nine and ten describe the theme People and the relations that exist between individuals in the community and individuals and the community. While diagrams eight and nine
focus on individuals who are seen to be influential to people and the community, diagram ten identifies the key factors that motivate people to participate in community activities, events and issues. Findings from diagrams eight, nine and ten indicate that people are more likely to attach a high level of influential authenticity to people who actively participate in community initiatives rather than those who generate wealth, maintain longevity or occupy paid or elected positions in the community. According to the results emerging from diagrams eight, nine and ten, it is the motivation and capacity of people to voluntarily initiate and generate social change in the community that provides the distinction between those who are influential and those who are not.

Influential people are considered to be unique from the greater population because their actions and participation in community activities focus on enacting social change and community betterment rather than for personal gain. However, in some instances, social change requires the input of a wider population if it is to be successful. The final result to emerge from diagrams eight, nine and ten is the suggestion that individuals are more likely to act, participate or address community activities, events or issues to bring about social change if the community activities, events or issues are likely to impact on the important aspects of their life. Human agency will not develop and evolve just because information about broad social issues are available but more so if individuals develop an understanding of the consequences that may result from certain actions, or inactions, and the impact that such actions or inactions may have on their own lifestyles or livelihoods.
4.5 Summary

Raw data, collected in this study using participant observations, semi-structured interviews and a review of documents and artefacts, were translated into text as transcripts, field notes and memos. As a result, this chapter describes the three stages of data analysis used to reduce and collapse the data into a concise, focused and manageable data set. NVivo software was used to undertake a thematic analysis to collate and arrange all written text into data clusters, specific to participant responses to interview questions. The results of this process were then documented, which provided further opportunities to clarify, review, assess and summarise the research data. The emerging patterns in the data then revealed key characteristics about the people residing in the community and the factors that encourage people to stay in the community for varying lengths of time. Similarly, the ties that bond, bridge and link people to groups and organisations were identified as were the mechanisms to source and exchange information, the key aspects of community participation and the influential people, groups and organisations in the community. An analysis of the similarities and overlaps allowed the data to be reduced into nine key data categories:

1. Tenancy in the community;
2. What people like about the community;
3. Groups people contact in the community;
4. Organisations people contact in the community;
5. Influential people in the community;
6. Methods used to source information in the community;
7. Methods of information provision in the community;
8. Motivation to participate in the community;
9. Best ways in which people learn in the community.

While nine data categories emerged from the data in stage one of the analysis, an additional examination was required to gain further
confirmations and interpretations of the data. As a result, a process of condensation in stage two of the analysis collapsed the nine data categories into a smaller number of research themes namely:

People;
Groups;
Information;
Place.

To provide clarity and assist in the further refinement of the data, stage three of the analysis used Mindmanager software to present a visual representation of the key results emerging from these four themes.

The diagrams and their analysis facilitated a further examination of the themes, Place, Groups, Information and People, and identified key patterns in the research that would otherwise not have been revealed. Results from stage three of the analysis indicate that people form different relationships with place, which in turn impacts and influences concepts of home and identity. The results also suggest that people have regular and ongoing contact with informal groups, which foster reciprocal relations and a sense of belonging, and a high number of family or work related interactions with formal organisations, which encourage the formation of one-way relations that do not allow for a reciprocal exchange of information. As such, people access information and take up new knowledge from a variety of sources using, most prominently, informal and practical methods of exchange such as the observations, conversations and participation within social networks. Results of this study also indicate that people are more likely to accept, value and respect information from a trusted source, be it a person, electronic transmission, document or venue, if there is an established relationship or history of reliable, relevant
and accurate information exchange. As such, the trust an individual places in a source of information greatly impacts on whether the information is trusted by the individual, which in turn impacts on whether information is perceived to be accurate, authentic and reliable.

The final set of results to emerge from stage three of the data analysis reflects on the factors that motivate people to participate in the community and the factors that determine perceptions of influence in the community. According to the data, the motivation and capacity of people to voluntarily contribute to activities that address broad, community issues and needs attract high perceptions of authenticity and distinction from those who are active in income generation or because of longevity or an appointment to paid and elected positions in the community. While there is no criticism of the latter, the data suggests that influential authenticity is granted to those who participate in the community to enact social change and community betterment rather than for personal gain or required responsibility. Results from the data also indicate that people address community issues or participate in community activities and events in different forms and frequencies; the key to this is whether issues, activities or events impact on the important aspects of an individual's life. Here, community action, individual agency or social change does not develop or evolve because general information about broad social issues are available but instead, occurs when individuals understand the consequences that external influences can have on their immediate and future world and how their actions, or inactions, as an individual can either protect, preserve or enhance important aspects of their lifestyle or livelihood.
While the three stages of data analysis have condensed a large quantity of data into a distinct set of research results, a synthesis of all data analyses is now required to provide the final research findings. In Chapter Five, definitions of community, engagement, new knowledge and change provide clarity and new meaning to elements of the research question. Here, a hierarchical model is developed to explain the stepped process of translating information provision into new knowledge and social change. Once all aspects of the research question are defined and fully explained, the research question, "How do communities engage with new knowledge to bring about change?", is answered. Ten key research findings are then presented while further refinement and collapse of the data enables conclusions of this study, and the implications for biosecurity policy development, practice and research, to be revealed.
Chapter Five: Summary, Synthesis, Conclusions and Implications
5. Summary, Synthesis, Conclusions and Implications

5.1 Summary
In developing a collaborative response to biosecurity in a northern Australian community, growers, the Shire, government departments and peak agricultural groups identified a need for further research on the exchange of biosecurity information amongst residents of, and visitors to the region. The need identified by stakeholder groups provided the catalyst for this study, which aimed to determine how the principles of community engagement can assist in the adoption of biosecurity knowledge to bring about a change in biosecurity attitudes, practice and behaviour. The result of this was the formation of the research question, 'How do communities engage with new knowledge to bring about change?' To answer the question, an introduction was first presented in Chapter One, a theoretical framework for the study was provided in the literature review in Chapter Two, the research methods were explained in Chapter Three while data analyses were described and presented as results and discussion in Chapter Four.

In this study, a large volume of raw data was collected using ethnographic techniques, which were then translated into text as transcripts, field notes and memos. In Chapter Four, three stages of analysis were used to collapse the data into a condensed, focused data set, which in turn provided the basis for key themes and patterns to be identified. A thematic analysis provided the first layer of analysis and, using nVivo software, the data were tagged and grouped into clusters of similarly themed information. This process provided insights into the diversity of people who live in and visit the community as well as the factors that motivate people to reside in or visit the community. Stage
one of the analysis identified the links between people, groups and organisations, the popular sources and methods of accessing and exchanging information, the factors that motivate people to participate in community activities and the individuals, groups and organisations that are perceived to be influential in the community and why.

At the end of stage one of the analysis, nine key categories in the data were revealed. However, to gain further meaning from this data, a second layer of analysis was required to collapse the nine categories into a smaller number of research themes. After a process of data condensation, four key themes emerged namely, People, Groups, Information and Place. To enable the further exploration and refinement of the data interpretations, stage three of the analysis adopted the strategy of computer generated diagrams to provide a visual representation of the four main data themes. As an analytical tool, diagrams enabled research outcomes to be identified in each of the four themes, which were then used to formulate the answers to the research question.

5.2 Synthesis of data analyses

The research question for this study is 'How do communities engage with new knowledge to bring about change?' The condensation and analysis of the data, as presented in Chapter Four, provides data clarity and refinement, which enables findings specific to this community and this research to become evident. A synthesis of all analyses is presented now to provide new definitions for community, engagement, new knowledge and change, which in turn, answers the research question and enables research findings to emerge from the data.
5.2.1 Community
This research presupposes that a community, in a geographic sense, is an area of land fixed within a set of boundaries, which is more or less mutually understood by the majority of its members. At this site, a population of some 5,600 people live in a remote, northern Australian community that was built initially to service irrigable agriculture but now also provides for industries such as mining, tourism, Indigenous groups and government services. 26.5% of the population identify as Indigenous Australians (ABS, 2007a).

5.2.1.1 Community as a destination
This research found that non-Indigenous people come to the community specifically to participate in employment and tourism activities. While it is these features that primarily attract people to the region, the remote location, climate and surrounding bushland, water systems, rocky outcrops and desert ranges support an outdoor-focused lifestyle, which encourages some non-Indigenous people to remain in the community for longer periods than initially anticipated as indicated previously in Table 4.6.

Definitely the professional challenge is a big part. But I also love the region and environment. I’m lucky enough to have the professional challenge to go with it. Without that challenge I’d go somewhere else (S18-07).

Although there is a section of the non-Indigenous population who remain in the community for 20 years or more, the greater majority will leave at some future point to return to
their place of origin or to a new location to fulfil any number of personal or family needs. As a result, non-Indigenous people maintain a level of transience in the community. In contrast, Indigenous people maintain high levels of permanency and longevity in the community because of a close attachment to culture, family and traditional lands. This strong, spiritual attachment to country as shown in Table 4.4, means that Indigenous people provide a consistent and stable population.

I've lived in (the community) all my life, born here and grew up here. That's 34 years now, so I'm a local. I'm kind of like a traditional owner too, to the (Indigenous family) mob... I belong here... I love the country; I love (the community). I love the whole catchment area of the (region). It's a good feeling to live here. I don't think I'll ever move (S27-08).

5.2.1.2 Social capital, identity and sharing new knowledge
This study confirms research by Field (2008), Granovetter (2005), Putnam (2000) and Shullo (2008) that close, bonded ties between people who share common interests, values and attitudes promote the formation of trusting, honest, respectful and reciprocal relations within social groups. These networks foster a sense of belonging and acceptance, which in turn shapes, confirms and re-creates the identities of its members. While Putnam's study of Italy (1993) and the United States (1995) describes the net and universal result of such relations as social capital, in this community active citizenship and resource sharing exist primarily within separate and
distinct sectors of the population as demonstrated in 4.2.3, ‘Groups people contact in the community’. Social divisions between people of different cultural backgrounds, age, occupation, longevity and social or leisure interest means that relations, and therefore the exchange of information and new knowledge, is contained within the close bonded networks of distinct and separated groups. Although Onyx and Bullen (2000) and Leonard and Onyx (2003) recognise that rural Australian communities have a propensity to maintain strong social networks that can isolate people from 'the outside', this research similarly found that close and closed social networks form and exist around distinct social, cultural, physical, political and economic characteristics within the community, which in turn separates and isolates members of the population. This research however suggests that identity plays a central role in determining where individuals access and share social resources and new knowledge (and where they do not), which in turn impacts on their motivation to participate and contribute to certain and discrete social networks in the community as opposed to across the community as a whole.

5.2.1.3 Community, place attachment and identity
Like Falk and Balatti (2004), Giuliani (2003) and Proshansky, Fabian and Karminoff (1983), this research found that an attachment to place influences an individual’s identity and behaviour. Here, those who hold a functional attachment to place as described earlier by Bilgenoglu (2006), Backlund and Williams (2003) and Dixon and Durrheim (2000), are
predominantly non-Indigenous people who reside in the community to have their personal needs met, such as income generation, career development or tourism experiences. While lifestyle activities are considered to be highly valued, the attainment of personal or family needs is central to an individual’s identity and is of greater importance than for example, outdoor leisure pursuits or sporting interests. Once an individual believes their needs have been met, or can be better met somewhere else, there is a strong tendency to relocate to another community. Conversely, and as suggested previously by Brough et al (2006) and Hauge (2007), Indigenous people and some non-Indigenous long term residents maintain an emotional attachment to place, which becomes central to their identity as the community defines who they are and where they belong.

However, this research found that people who maintain a functional attachment to the community may also have an emotional attachment to a different place, such as a birthplace, childhood or family residence or other destination, which provides a strong basis for their identity. Key characteristics of an individual’s identity therefore determine whether an individual will reside in the community for work purposes only, will stay longer in the community because participating in lifestyle activities is highly valued or remain in the community for their lifetime because this is their country and they belong here. This study, as indicated in Table 4.8, shows that the relationship between identity and place is complex, interrelated and central to determining why people
come to the community, the length of time they stay in the community and their levels of participation in the community. I need to be here because of my work and if I was to move, it would mean more travel. It suits me this life for now... I talk a lot about leaving but the reason I stay is because I have this little retreat. Somewhere where I can afford to have a couple of acres, nice garden, privacy... as opposed to say for the same money, I would have neighbours banging on the wall. So more than anything, it's the lifestyle (S02-07).

5.2.1.4 Definition of community
This study agrees with the findings by Cohen (1985) and Willmott (1989) as reported in Chapter Two that communities consist of people from different backgrounds who form strong and weak ties to groups of common interest and, for whatever purpose, choose to reside in or visit a geographical location for varying lengths of time. Where this study differs however, is in understanding the interplay between the key characteristics of an individual's identity, their emotional or functional attachment to place, the strength of their relations within social networks and how all of these factors impact on an individual's motivation to participate in the community. While social capital does exist in this community, a disparity in the social, cultural, physical, political and economic characteristics of population groups provides different levels of access to information, resources and decision making. As a result, community sectors attach different values and meaning to issues impacting on the community, which results
in a fragmented approach to community activity and participation.

5.2.2 Engagement
The next aspect of the research question to address is engagement. Here, engagement refers to the interaction and exchange of information between and across different individuals, groups and sectors in the community.

5.2.2.1 Access to information
This research found that residents in the community access information using documents, radio, television and the internet. However, the most effective medium to gather and exchange information relevant to this community is through the informal and personal interactions that result from participation in social networks. As reported earlier by Hashagen (2002) and Woolcock and Narayan (2000), people develop close, informal relations within their social networks but maintain weak and formal relations with structured groups such as government agencies. Research shows in this community that individuals engage with governance systems on a 'needs' basis, preferring instead to first source advice and expertise from people they trust and respect. Although governance systems provide information across all community sectors, the methods of information dissemination rely on generic, partisan and one way methods of communication as described in 4.2.7, 'Methods of information provision in the community', which leads to a 'one size fits all' approach to policy development and practice.
5.2.2.2 Engagement with people

Although Borgatti (2006) and Serrat (2009) acknowledge that social networks support the exchange of information between members of a network or group, this study also found that the strength of relations within this group impacts on how often information is sought, shared and accepted as being accurate. Here, engagement is most effective if it is conducted at a local level as people maintain limited links with and trust of networks outside the community. Similarly, because of the close, closed social networks that exist in the community, information is most effectively disseminated by members of one community sector to other members within the same community sector as the bonds of trust are much stronger than with those entering their social networks from outside.

5.2.2.3 Engagement with groups

This study shows that people do not gather information about activities, issues and events occurring in the community from outside sources but instead, from individuals and groups located in the community. While people share information openly and readily within specific social networks, residents only access information from governance systems, such as government agencies or the Shire, as required. While Nonaka and Takeuchi (1995) discuss improvements to the generation and exchange of knowledge in organisations and across organisations, this study reflects on the sharing of information and new knowledge between organisations and the broader community. As described in 4.4.3, "Information," this research
finds that information provided in this community by governance systems is undertaken using formal, one way mechanisms, which limit the development of trusting, respectful, honest and reciprocal relations between individuals on the inside of organisations and those on the outside. However, the overlapping of social networks, as suggested earlier by Foster, Meinhard and Berger (2003), allows people to form close, informal relations outside the workplace and participate in extended and reciprocated dialogue relating to social and professional issues. Therefore, the capacity for governance systems to be informed and guided by local issues in its policy development and decision making is dependent on the depth and diversity of relations between people working on the inside of the organisation and those (across all sectors of community) on the outside. If these relations do not exist, decision making and policy development is dependent on the perspective of one community sector in the community or centralised and dominant systems outside the community.

5.2.2.4 Engagement is circulatory

This research shows that information originating from within one community sector circulates within the social networks located in that sector and has a limited capacity to intersect other population groups as demonstrated in Table 4.18.

The main people around here would be (names withheld) because they have been here a lot of years and they’re both very successful farmers. Both are very generous with their time and information... often I’d ask
them questions because I've never had any experience in irrigation, never had experience on these soils so I can ask them anything (S17-07).

Although strong bonded ties are important in the exchange of information, this study agrees with Onyx and Bullen (2000) in that such relations also limit the capacity of community sectors to inform other groups about issues of importance. However, this research also found that mediums used to share information across the community are context and language specific, which may accommodate one or two sectors in the community, but in doing so, may also exclude others.

5.2.2.5 Definition of engagement
Engagement requires the formation of relations between people within and across all community sectors whereby relevant, accessible and common language and communication tools are used to provide and receive information.

5.2.3 New knowledge
The next aspect of the research question is the phrase new knowledge. In this context, new knowledge refers to the expansion, clarification and verification of information that may already be familiar to the individual (but with limited meaning) or unknown to the individual to gain a confident understanding of a particular subject.
5.2.3.1 Access to new knowledge

This research shows that all community sectors exchange information through personal interactions, documents, electronic medium and at venues. However, before information is accessed or taken up as new knowledge, an individual first has to identify and determine whether the information available to them is of interest or more specifically, has the capacity to impact on their lifestyle or livelihood. If so, people seek clarification and verification from a secondary, trusted source to determine the authenticity of the information. Information, as suggested earlier by Schein (1996), also has to be meaningful if it is to be adopted by an individual as new knowledge. As discussed in 1.3, 'Statement of the problem', governance systems in this community assume that the nominal act of information dissemination using formal, generic, one way and partisan medium results in the adoption of new knowledge, which brings about a change in attitude, practice and behaviour. This study also suggests that governance systems view the limited take up and translation of information into new knowledge and social change as a failure on the part of the individual and broader community rather than a failure of systems to exchange this information more effectively across different sectors of the community.

5.2.3.2 Transient populations can support information exchange but are not considered influential

While the exchange of information by members of social networks assists in the adoption of new knowledge, those who
reside in and visit the community for short periods of time also play an important role in the introduction of new skills, experiences, ideas, attitudes and expertise to the broader population. Like Onyx and Bullen (2000), this study found that short term residents establish multiple, weaker relations across community sectors, other than in Indigenous groups, and exchange information from outside the community with those living within. As explained in 5.3.2 'Engagement', strong bonded relations encourage information to circulate within a community sector rather than flow from one social grouping to another. The regular introduction of a transient population establishes networks that encourage the development of multiple bridging relations, which enables information circulating in one community sector to be exchanged with information from outside and other community sectors. Although such actions support the sharing of skills, knowledge and expertise across a wider and more diverse population as described in Chapter Two by Woolcock and Narayan, (2000), this study also found that transient groups form exclusive social networks amongst themselves.

While information is shared and taken up as new knowledge within the social networks of young professionals, backpackers and older travellers as discussed in 4.4.3.1, 'Information: Diagram four', these same viewpoints are not always assumed to be accurate by medium to long term residents because trusting relations do not exist and limited credibility is offered to information generated outside the community where no common identity exists. Alternatively,
people who contribute their social, cultural, economic, physical or environmental resources for the betterment of the community, or certain aspects of the community, are considered to be influential and trusted and thereby assumed to provide authentic and accurate information. In other words, influential people are those who invest resources to support or bring social change to key aspects of an individual's world, or enhance their identity, are considered to be influential as opposed to those who only provide information across social networks.

5.2.3.3 Definition of new knowledge
This study shows that new knowledge is formed from the adoption of meaningful, accurate and trusted information, which in turn then becomes incorporated into the identity of an individual. It is anticipated that new knowledge will then change the identity of the individual a little as a result.

5.2.4 Change
As discussed earlier by Schein (1996), individuals are motivated to modify their behaviours when the information they receive is connected to aspects of their personal identity. In this study, the concept of change focuses on the exchange of information between people in close social networks and the stepped process that transforms generalist information into meaningful new knowledge, which in turn brings about a change in attitudes, practice and behaviour.
5.2.4.1 Translating new knowledge into social change

As explained in 5.3.2 'Engagement', strong bonded relations based on honesty, respect, trust and reciprocity provide individuals with greater opportunities to exchange information, which is considered to be accurate. Social networks therefore become a central source of information for individuals within close bonded relations. However, information provision, regardless of its source, does not automatically translate into the adoption of new knowledge and social change, a point which is supported in the previous section whereby new knowledge is found to require a preparedness to change one's identity to a greater or lesser extent. This research found that before sustainable change can be considered to be an outcome of information provision, individuals apply a stepped process, as suggested by Prochaska and de Clemente (1986), and demonstrated here by the data. This process involves:

- Information access
  By seeing things and learning on the ground and following up with books and information, internet and public discussions (S17-07).

- Assessment
  It depends on the topic. Something on weeds I'd read. Same as the mines because they have such a big influence on the town. I might read something from the farmers. I'd read it if I was being offered something or whether there was some crucial information about the things I like doing such as camping or the environment. I'd
certainly take notice of something relating to the environment (S14-07).

- Verification
  Most of the time people are fairly accurate but it's good just to be sure... I'd double check for myself (S14-07).

- Reflection
  If it ain't interesting it ain't important to me. I don't care how important it is (to the community). I'm not going to go to anything that I'm not interested in... The reason is, if I'm not interested in it, then why attend... If you're interested, you'll make the time for it. If it don't sound interesting then no (S7-07).

- Motivation
  Or if it's something I'm interested in, I'll put it aside to have a good look at or to follow up, do something with it or if I want more information (S11-07).

- Action
  Something like the rodeo I would go to because it's important to other people around me. I think I'm a fairly motivated person who's happy to be involved in communities. Community is important to that sense of belonging. It's important to us as a society (S2-07).

- Evaluation
  Working on farms and seeing things and thinking, 'that's good'. Learning began after I finished my
apprenticeship. Working for myself is when the real learning began. If you made a mistake, you only made it once, never made it twice (S10-07).

One of the central features of social change is that information has to first be available in a medium that is accessible to people across all community sectors. If this occurs, this study shows that individuals assess whether the information they are provided with is of interest to them or more specifically, if the outcomes of such information is likely to impact on the important aspects of their identity such as their family, friends, property, workplace, social networks or leisure time. If so, further information is sought and exchanged with a trusted, secondary source for clarification and verification. In some circumstances, the trusted source is the self, whereby individuals develop new knowledge through repeating and refining personal practice or experiences. If the original information is confirmed by a trusted source, it is accepted as being accurate and becomes new knowledge. Once information is accepted, a period of reflection determines what impact this new knowledge is likely to have on an individual’s identity, which in turn motivates a corresponding degree of action; an expected high impact correlates with a high level of action. An evaluation at the end of this process enables an individual to determine whether the action taken addresses the impact on their identity, which in itself is a form of gathering of new knowledge.
The process of translating information into new knowledge, as described here and in earlier sections, is not a simple matter but instead requires a reciprocal exchange between an individual's previous identity and a possible new one. Influenced by the earlier work of Zeleny (1987) and Ackoff (1989), and then Davenport and Prusak (1998) and Bernstein (2009), the process of translating information into new knowledge, which fosters social change, is described in the hierarchical model as shown in figure 5.1.

Figure 5.1: The process of translating information into new knowledge and social change
The development of this model is one of the key findings of this research and demonstrates how a large volume of information, that has limited impact on an individual's world or identity, is met with a low level of motivation for change. While the directional arrows indicate a reducing volume of information is taken up as new knowledge, only a small portion, represented by the apex of this model, results in individuals changing their attitudes, practice and behaviour. This indicates that people respond to small and concise clusters of information that relate specifically to key aspects of their identity.

5.2.4.2 New definition for change
This study shows that change occurs when understanding, brought about by new knowledge (or old information that has new meaning), motivates the use of different or new attitudes, practice or behaviour to preserve, protect or enhance key aspects of an individual's identity. People take up however, only a small amount of information and translate it into new knowledge and hence into action.

5.2.5 Answering the research question
Definitions of each of the key components of the research question are summarised in table 5.1.
Communities consist of people from different backgrounds who form strong and weak ties to groups of common interest and, for whatever purpose, choose to reside in or visit a geographical location for varying periods of time. Engagement requires the formation of relations between people from within and across all community sectors whereby relevant, accessible and common language and communication tools are used to provide and receive information. New knowledge is formed from the adoption of meaningful, accurate and trusted information, which is expected to impact on a person's identity. Change occurs when understanding, brought about by the adoption of new knowledge, motivates the use of different or new attitudes, practices or behaviour to preserve, protect or enhance key aspects of an individual's identity.

Table 5.1: Definitions of key components of the research question

<table>
<thead>
<tr>
<th>Community</th>
<th>Engagement</th>
<th>New knowledge</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communities consist of people from different backgrounds who form strong</td>
<td>Engagement requires the formation of relations between people from within</td>
<td>New knowledge is formed from the adoption of meaningful, accurate and trusted</td>
<td>Change occurs when understanding, brought about by the adoption of new knowledge, motivates the</td>
</tr>
<tr>
<td>and weak ties to groups of common interest and, for whatever purpose,     and across all community sectors whereby relevant, accessible and</td>
<td>information, which is expected to impact on a person's identity.</td>
<td>use of different or new attitudes, practices or behaviour to preserve, protect or enhance key</td>
<td></td>
</tr>
<tr>
<td>choose to reside in or visit a geographical location for varying</td>
<td>common language and communication tools are used to provide and receive</td>
<td>aspects of an individual's identity.</td>
<td></td>
</tr>
<tr>
<td>periods of time.</td>
<td>information.</td>
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With the provision of new definitions for community, engagement, new knowledge and change, the research question for this study, 'How do communities engage with new knowledge to bring about change?', can now be answered:

Change is found to be fostered through an exchange of meaningful, accurate and trusted information by people within and across social networks using relevant, accessible and common language and communication tools. Understanding the impact that (the net result of) new knowledge has on key aspects of an individual's own identity, and then the identity of others, greatly supports and motivates a move toward change. Community understanding takes place when there is common knowledge and acceptance of the issues that impact on the collective identities within the community. The capacity for change is strengthened when all members of the community have access to the means and mechanisms to enact change. Community change can then take place when
individuals find common understanding and meaning in the issues that confront the community and move in the same direction to address them.

5.2.6 Key findings

The previous section was able to address the research question, ‘How do communities engage with new knowledge to bring about change?’ The key findings of this study are now presented.

Finding one: Places that are central to an individual’s identity will be protected and preserved by that individual.

This study found, as suggested earlier by Bilgenoglu (2006), Giuliani (2003), Twigger-Ross and Uzzell (1996) and Yuen (2005), that place is a central component in shaping an individual’s identity. The places most important to people are those that fulfil a functional need or provide a sense of emotional attachment. In this community however, people will take responsibility for, and be active in maintaining or bettering, the places that are important to them. Places that do not satisfy a functional need or provide feelings of emotional attachment are not considered to be important and therefore, people do not take an active role in their preservation.

Finding two: Place attachment, as part of an individual’s identity, determines the direction in which individual and collective agency is focused.

Like early research described by Schreyer, Jacob and White (1981), Stokols and Shumaker (1981) and Williams and Roggenbuck (1989), this study found that a functional or emotional attachment to place determines why people reside in the community and the length of
time for which they stay. However, this study found that attachment to place also encourages people to engage in social change and the community sectors in which social change is most likely to take place. Communities that accommodate people with limited functional or emotional attachment to place experience limited levels of personal willingness to instigate change.

**Finding three:** People who voluntarily participate in activities that enhance or better the community, or aspects of the community, are considered to be influential.

As suggested by Cooke (2004) and Mohan (2001) in Chapter Two, this study found that people from all community sectors hold and maintain ownership over information that is specific to the community. This research shows however, that people from all community sectors are influential, not because of personal wealth, longevity in the community or the organisations they associate with, but because of the local knowledge they maintain, the relationships they develop and the activities they participate in to better the community, or aspects of the community with who they share a common identity with. Those who are motivated to generate action for the betterment of the community are set apart from the greater population who are more likely to participate in activities to meet their own personal needs.

**Finding four:** Strong social relations enable a greater exchange of information and increased assumptions of information accuracy.

While this study agrees with Granovetter (1973, 1983, 2005) in that strong bonded social networks, based on trusting, honest and
respectful relations, support the reciprocal exchange of information between two or more parties, this research also found that a greater volume of information is exchanged in trusted relations and this information is more often assumed to be authentic and accurate. Similarly, individuals source and verify information from a trusted source before it is adopted as new knowledge. As a result, the manner in which information is accessed becomes irrelevant as long as the source is trusted.

Finding five: Increased information provision does not equate to increased access to new knowledge and social change.

Like Ackoff (1989) and later Bernstein (2009) and Rowley (2007), this study found that there is no proportional relationship between the amount of information in the community and the tendency for people to translate information into new knowledge and social change. Instead, this research found that before social change occurs, people in the community initiate a stepped process of information access, assessment, verification, reflection, motivation, action and evaluation. Information that is believed to be meaningful and interesting, or impacts on important aspects of an individual’s identity, is verified by a trusted source and adopted as new knowledge. The greater the expected impact of new knowledge on identity, the greater the motivation to bring about social change.
Finding six: The information exchanged in one community sector is more likely to be taken up and adopted as new knowledge if the information is provided by a member of the same community sector.

This research agrees with Hardin (2002) in that the most trusted sources of information are those that exist within an individual’s social networks and community sector. However, this study found that the use of a common, contextual language to exchange information with those who share similar interests, attitudes, experiences, backgrounds and occupations, bypasses the social, cultural or physical barriers that may otherwise arise. As a result, information is most effectively exchanged between people from within the same sectors of the community because a confluence of identity and new knowledge is more likely to result in change.

Finding seven: Population transience can, but does not always, support the broader exchange of information across community sectors.

The earlier work of Granovetter (1973, 1983), Putnam (1993), Narayan (1999) and Woolcock (2001) as reported in Chapter Two, suggests that weak or loose ties to a variety of social networks promote the broader exchange of information across different sectors of the community. While this is evidenced by some short term residents who volunteer their personal resources within certain sectors of the community, this study found that a transient population does not always support the sharing of new knowledge. Although the social networks established by backpackers, young professionals or older travellers can be a useful method to share stories and experiences, in this community, information is more likely
to be adopted by medium to long term residents if new knowledge is first applied to a local context and then justified and validated by local results.

Finding eight: Social capital is located in the social networks where active citizenship and resource sharing occurs and is not universally transferred across other sectors of the community.

Like Onyx and Bullen (2000), this study shows that strong, bonded social networks, based on trusting, honest, respectful and reciprocal relations, offer its membership a sense of belonging and acceptance, which fosters community participation and the sharing of local resources. However, theories of social capital, and the assumption of its broad societal benefits as described by Putnam (1993), can not be uniformly applied as the nature, role and implications of social capital differ from one sector of the community to another. While there remain distinct social differences and separation between population groups in the community, members of social networks and community sectors participate in different local activities and/or participate differently in local activities. As a result, each community sector attaches a unique meaning to their own participation in community activities and the outcomes they achieve (or do not achieve), which is seen as a function of their identity. Therefore, this study found that the benefits arising from social capital, such as active citizenship and the sharing of local resources, are located and contained within the social networks or community sectors where close bonded relations exist and are not universally transferred across the broader community.
Finding nine: The establishment of effective engagement practices between people within governance systems and people across all community sectors impacts on the development, implementation and adoption of policies in that community.

This study found, similarly to the results discussed earlier by Bryson and Mowbray (2005) and Hashagen (2002), that authentic and meaningful engagement occurs in localised settings that support the reciprocal exchange of information between people across all sectors of the community. Therefore, engagement is not an activity that can be undertaken by governance systems per se but can instead benefit from the mutual exchange of information by people situated on the inside of governance systems with those situated within community systems. For example, if governance systems do not foster an environment that encourages the establishment of broad, multi-faceted internal and external relations, policy development and decision making can not reflect or address the issues of community members and will instead be dependent on the 'one size fits all' approach as determined by systems external to the community. Collective and institutional agency specific to one community must be chiefly guided by the information gathered from people located across all sectors of that community.

Finding ten: Community engagement processes and practices are not inclusive of all people living in or visiting the community.

This study found that there is limited recognition of the local knowledge held in different sectors of the community. As suggested by Brough et al (2006), specific population groups are
excluded from the process of information exchange inadvertently through for instance, the use of language and technology, or intentionally by practices that do not include people in consultative processes. In this community, the regular exchange of information between people in business, government, agriculture or community organisations means that Indigenous people, young people, tourists and people on low to no incomes are most notably offered minimal opportunities to exchange information with other community sectors or governance systems. These groups therefore have limited capacity to make decisions about the key issues that impact on their immediate world and the broader community.

5.3 Conclusions of this study
Ten research findings emerged during the synthesis of all data analyses as discussed in the above section. These findings were then subjected to scrutiny to identify possible overlaps, synergies and potential for further collapsing. Four key conclusions of this study are drawn as a result of that process. The first conclusion reflects the importance of identity and place in determining the decisions people make about participating in community activities and in which sector of the community these activities are likely to occur. The second conclusion identifies the key factors that motivate people to take up and translate information into new knowledge and social change while the third describes how governance systems can benefit from the introduction of mechanisms that enable people on the inside of organisations to establish relations and exchange information with those on the outside. The final conclusion of this study reveals that social capital is not universally transferred across a broad population but is instead located within the social networks or community
sectors in which strong bonded relations occurs. These four conclusions are now discussed in more detail.

5.3.1 Identity and place
The relationship between identity and place influences an individual’s willingness to enact change and determine the community sector in which actions to bring about change take place. This community attracts and maintains a highly transient population of non-Indigenous people who purposely come to the region for varying periods to satisfy personal needs associated with tourist activities and income generation or career enhancement. The community also supports a stable population of Indigenous people who continue to live in the region because of an emotional attachment to traditional lands and culture. Here, the confluence between identity and place determines why people come to the community, the length of time they stay in the community and their motivation to participate in the community. Identity and place attachment is also likely to determine where individuals invest their social, cultural, financial and physical resources in order to protect, preserve or enhance the attainment of personal needs or places of emotional importance. An individual from one community sector is therefore less likely to initiate or participate in social change in another, unrelated community sector because the impact of their actions has limited relevance to key aspects that individual’s identity.

5.3.2 New knowledge
Individuals do not take up and translate information into new knowledge if it has no relevance to or impact on their identity,
regardless of the volume of information produced and disseminated across the community. Information is most effectively transferred within the trusted, honest, respectful and reciprocal relations that exist in close bonded social networks. The strength of these relations determines the quantity of information exchanged as well as the presumed accuracy of that information. If the net result of this information is expected to impact on an individual’s identity, the individual will take up that information and adopt it as new knowledge. Information that is personalised, or common to members of a specific community sector, maintains a level of context, which provides relevance, meaning and authenticity. In this community however, distinct and well defined social divisions mean that relations amongst people are primarily contained within the close bonded networks that exist within each sector of the community. Meaningful information that is generated by, and relevant to, people who share similar characteristics of identity therefore circulates within their specific social networks with limited capacity to be exchanged or transferred across other sectors of the community.

5.3.3 Governance

Governance systems would benefit from engagement practices that enable people on the inside of organisations to form relations and exchange information with people on the outside. It is not possible for an organisation to engage with the community. It is however, possible for an organisation to enable people from within its formal structures to develop relations and exchange information with people on the outside of those structures. Effective engagement practices can only occur moreover, when people
from within an organisation first understand the social, cultural, physical, political, economic and environmental features of the community in which the organisation is located. Systems and mechanisms of engagement unique to that community can then be developed to enable an open, honest, personal and reciprocal exchange of information with, and between, members of all sectors of the community. However, such an exchange can only be considered authentic and meaningful if the information shared amongst community members reflects the issues that impact (or have the potential to impact) on the important aspects of an individual's identity and more importantly, if the information provided by community members is used collaboratively to develop solutions to address such issues.

5.3.4 Social capital
Social capital is not an entity that can be generically transferred but instead exists in different forms, frequencies and intensity within the social networks found in each sector of the community. In this community, close bonded relations within social networks promote the formation of trusted, honest, respectful and reciprocal relations, which foster a sense of belonging and acceptance amongst its members. However, while there are distinct social, cultural, physical, political, economic and environmental characteristics that link individuals to certain sectors of the community, those same characteristics also make distinctions between members of one community sector and another. Active citizenship and the sharing of resources are therefore context specific in that each community sector will attach different values or meaning to the activities or issues that surround them, which in turn generates varying levels of
input and participation in the community. As a result, social capital is not consistent across the community and exists in varying forms and at varying levels of frequency and intensity. As a result, social capital is not universal as it is located in the close and closed social networks of each community sector where strong bonded relations exist. While active citizenship and resource sharing can still bring positive outcomes to varying sectors of the community, further research is required to determine whether social capital supports the continued separation and fragmentation of unique and different population groups in the community or indeed as suggested by The World Bank (1999), is the glue that shapes the quality and quantity of a society's social interactions.

5.4 Implications of this study
The implications of results on biosecurity policy development, practice and further research are now presented.

5.4.1 Implications for the development of biosecurity policy
One of the key implications arising from this research for government agencies and the agricultural industry is that biosecurity policies remain relevant and meaningful to people residing in or visiting the community. To ensure this occurs, it is critical for biosecurity proponents to first maintain a broad understanding of the contextual landscape of the community, which includes a comprehensive interpretation of its social, cultural, physical, political, economic and environmental characteristics as well as the patterns and relations that influence decision making and the distribution of power. Because no one community maintains the same unique characteristics as any other, a 'one-size
fits all' approach to biosecurity policy development can not be applied. Biosecurity policies that are specific to certain geographic locations are more likely to be effective than generic or centrally driven policies if they are directed by locally generated ideas so as to address locally identified issues. As suggested earlier by Hashagen (2002), government agencies and the agricultural industry are therefore in a position to provide the necessary mechanisms for biosecurity practitioners and policy makers to develop and maintain relations and engage with members across all community sectors to gather and exchange information on biosecurity. This means however, that biosecurity policies specific to one location will not only focus on agricultural related issues but also the pests and diseases that impact on places important to all or different sectors of the community.

According to Mowbray (2005), the challenge for national and state government agencies is to enable key stakeholder groups situated in this community to take responsibility for developing policies relevant to the issues and concerns raised by local people. On one level, this would require a de-centralisation of some institutional resources, decision making and power while on another, it would provide a broader policy framework that will enable people living in and visiting the community to develop and implement context-specific policies and practices. For example, existing policy development prescribes the centralised design, production and dissemination of generic biosecurity brochures across the state. However, government agencies also have the capacity to instead develop policies that allow the resourcing of community groups, such as those involving young people, older people, Indigenous
people or tourists, to create new methods of sharing biosecurity information within their social networks and across other sectors of the community. Such meaningful and purposefully directed initiatives would therefore encourage an exchange of new and different ideas, activities and perspectives and circumvent barriers to communication by using common language and new media formats to raise awareness of biosecurity issues.

While gaining a better understanding of the unique characteristics of this community encourages the development of relevant and meaningful policies on biosecurity practice, such a process can also assist in the formation of policies that provide more effective mechanisms to communicate and disseminate biosecurity information. Here, strong bonded networks within government agencies and the agricultural industry as explained earlier in 4.2.5.4.1 Subjectivity of influence, restrict and contain the exchange of biosecurity information to members within these community sectors. As such, the introduction of policies to support the establishment of engagement practices across all and each sector of the community will enable new and different relations to be formed between people on the inside of government agencies and the agricultural industry and those on the outside. As such, an increase in personalised relations across community sectors will have a corresponding impact on the quantity of information exchanged and the assumed accuracy and credibility of that information.
5.4.2 Implications for biosecurity practice

The results from this study, as previous demonstrated in 4.2.6, ‘Methods used to source information in the community’, have shown that information and new knowledge are most effectively exchanged through the social networks that exist within this community. While such a concept may challenge current thinking on the provision of biosecurity information, this research suggests an alternative approach, based on the principles of community as described earlier in this chapter, to increase new knowledge and bring about a change in biosecurity practice. Members across all sectors of this community are therefore more likely to take up new knowledge and enact social change if there is a perceived risk to those places of personal value or importance. As such, government agencies and the agricultural industry may consider providing local people with the resources to be active biosecurity practitioners ‘on their own turf’.

This change in biosecurity practice would not only encourage people across all community sectors to take responsibility for reducing the risks of biological incursions in their own home by, for example, appropriately disposing of unused fruit from domestic mango or grapefruit trees, but also take note of any changes in plant or animal form at a favourite waterhole, fishing spot, cultural site or other outdoor places that contribute to their emotional wellbeing. Such an approach to biosecurity also encourages people to share information and advocate participative practices with those in their social networks who may value the same or similar places in the community. This research therefore recognises that people do not act on biosecurity issues unless there is a threat to the
places that are important to the key aspects of their life or, in other words, their identity. As a result, biosecurity awareness and practice must first occur at an individual level before biosecurity awareness and practice can be replicated at a community level.

Another implication for biosecurity practice arising from this study recognises that government agencies and the agricultural industry can benefit from developing links with a cross section of individuals with established and extensive social networks in the community. As indicated in 4.2.4.1, ‘Organisations people contact’, individuals within certain social settings may be effective in sharing biosecurity information by using a common, contextual language with those who maintain similar interests, attitudes, experiences, backgrounds or occupations. Such a process bypasses the social, cultural or physical barriers that exist across sectors of the community and allow for example, young people, Indigenous elders or tourists to share their biosecurity knowledge, experience and practice with people who trust and respect their position or point of view. Similarly, government agencies and the agricultural industry may also choose to link with trusted and respected organisations to share information across a broad population base.

In this study, it was identified that government agencies and the agricultural industry expect people living in and visiting this community to be self-motivated to take up biosecurity information to bring about a change in biosecurity practice. However, this study found that significant attention and behaviour modification is only recorded by local people exposed to involuntarily biosecurity initiatives such as compulsory vehicle inspections at the border.
checkpoint and random luggage searches at the local airport. As such, the further use of involuntary biosecurity practices could be considered as a positive activity to compliment other community based initiatives throughout the region. While a quarantine checkpoint on the border already exists, there are no established mechanisms, other than road signs, disposal bins and brochures, to encourage people to relinquish their fruit, vegetables, honey or other plant products when travelling to the community from within the state.

At present, government agencies and the agricultural industry are relying on intrastate travellers to elevate the biosecurity of the community over and above the food items they have in their possession. While there is no way to determine whether this occurs, there is the likelihood that incursions will continue in the region if there is no real incentive for people to modify their behaviour. The use of mobile quarantine checkpoints however, can be an effective method to reduce the risk of biological incursions not only by confiscating plant products and establishing opportunities for personal interaction with biosecurity agencies but also to encourage the exchange of information amongst the social networks of intrastate travellers. The expectation being that the involuntary biosecurity activities experienced by one traveller will be shared with other travellers en route to the community, which will in turn influence the decisions people make about the food items they bring into the region.
5.4.3 Implications for biosecurity and social research

The aim of this study was to gain a better understanding of the ways in which people living in and visiting a northern Australian agricultural community exchange information and take up new knowledge. While top-down and centralised methods of information dissemination are considered by government agencies and the agricultural industry to be ineffectual, results from this study indicate that an alternative approach to biosecurity may instead be more appropriate. As a result, further research is required to measure the efficacy of community engagement strategies in raising biosecurity awareness and introducing a change in biosecurity attitudes, practice and behaviour. Research findings and conclusions identified in this study could then be adapted and applied to different situations and sectors within this community. For example, the results here indicate that identity and place influence participation levels in the community. One activity that can be undertaken in conjunction with the local high school and agricultural or environment agencies for example, can involve the use of remote or portable microscopes to give young people the opportunity to identify pests and diseases in and around their own home as well as the places that are significant to them. Such an initiative would not only establish new relations between young people and government agencies but build a biosecurity knowledge base that can be shared with others. Similarly, young people are in a position to trial and gain expertise in new surveillance, diagnostics and reporting technologies, which is fundamental to increasing community participation in biosecurity.
This same approach could also be used to map and measure the efficacy of initiatives introduced across other sectors of the community. For example, new communication strategies may include the use of mobile technology to engage people living in and visiting the community about biosecurity initiatives. Biosecurity kits may also be developed and distributed to the agricultural industry, hobby farmers and local residents to assist in the identification of unknown plants, pests and disease on rural properties. New and innovative methods may be developed to encourage tourists and local residents to identify and report biological pests while further research may be undertaken to map existing levels of local biosecurity knowledge amongst Indigenous people, young people, government agencies, the agricultural industry, the tourism sector and other local residents.

Another project worthy of further research is one that examines the social impact on individuals, families, the agricultural industry and the broader community if the region's area freedom status is lost. While the results of this study explain how biosecurity information can be better exchanged and taken up as new knowledge, further research is required to better understand the implications to large commercial operations and small farming plots if costly post-harvest treatments are applied to produce or whether some markets would be lost altogether if a biological incursion occurred in the region. Such research would however, need to take on a number of different dimensions and address specific social, economic and biosecurity issues at a micro, mezzo and macro level. As a result, research would not only review the impact on local and national agricultural outputs and economies but also the sustainability of
individual and family livelihoods and lifestyles if the annual export of produce is threatened or lost.

The final implication of this study does not relate specifically to biosecurity issues but more broadly to the further refinement and explanation of social capital theory. The results of this study indicate that while social capital is present in this community, it is not universal and instead exists in different forms, frequencies and intensity within and across each sector of the community. Here, research findings suggest that social capital is fragmented and remains discretely situated amongst the social networks of close, bonded relations. As a result, further research is required to determine whether the findings associated with social capital reported here are specific to this community or whether they can be replicated in other populations with similar and varying social, cultural, physical, political, economic or environmental features. The net result of this research may then have significant implications to existing and future theories on social capital or more specifically, assumptions about the complexity of social capital across communities.

5.5 Conclusion

People across all sectors of this community use varying and distinct mediums to exchange information and gather new knowledge within their social networks. Individuals however, will respond to the same information differently as each will make a subjective decision as to whether the net result of this information is likely to impact on their livelihood and lifestyle. This means that generic methods of information exchange are generally ineffectual in bringing about social change and
governance systems have to instead develop and introduce new and unique strategies to engage with different population groups across the community. Motivation for social change is also dependent on an individual's attachment to place; the greater the functional or emotional attachment to place, the greater the likelihood that an individual will enact social change to protect the social, cultural, physical, political, economic or environmental characteristics of that setting. The result of this is the fragmentation and isolation of active citizenship and resource sharing whereby members of specific social networks act and respond to some community issues but not to others. As such, the benefits that social capital brings to communities are located within the sectors or social networks where close bonded relations exist as opposed to being transferred more broadly across the community.

This study originated from an identified need for further research around the introduction of community engagement principals in the management of biosecurity and as such, results from this study contain considerable implications for biosecurity policy development, practice and research. Here, government agencies and the agricultural industry would benefit from mechanisms that enable the establishment of new relations across all sectors of the community, which can allow for a reciprocal exchange of biosecurity information and local knowledge. The challenge for governance systems however, is the de-centralisation of external resources, power and decision making to enable the development of local biosecurity policies to address local biosecurity issues and concerns. Local people will then become more effective biosecurity practitioners at a community level if they first take up biosecurity action and awareness in those localities important to their lifestyle and/or livelihood. While the results of this study have implications
for both policy development and biosecurity practice, additional research is required to measure the efficacy of community engagement strategies in raising biosecurity awareness and changing biosecurity attitudes, practice and behaviour.
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7. Appendices

7.1 Appendix one: Semi-structured interview questions

1. Tell me about your time in the community?
   a. How long have you been in the area?
   b. What do you like about being here?
   c. Would you prefer to live somewhere else at this point in time?
   d. What keeps you in the community... work, family, lifestyle?
   e. What do you like to do in your leisure time?

2. Tell me about the groups you mix with?
   a. Is it an organised group or more a collection of people?
   b. What is the basis for being part of this group - to socialise, exercise, social justice, personal interest, hobby, community input, neighbourhood action?
   c. How did you find out about it?
   d. How often do you meet?
   e. What do you get out of being part of this group?
   f. What is it that you offer back to the group and/or its members?
   g. How important is it to you to be part of this group?
   h. What do you have in common with group members?
   i. How strong or weak are your ties to the group and its members?

3. Tell me about some of the organisations in the community - organisations between different to community-based groups?
   a. What organisations do you have contact with? Why?
   b. Do you go to the organisation or do they come to you?
   c. What kind of relationship do you have with the people in these organisations?
   d. What are some of the prominent organisations in town?
   e. What makes them important or influential?
   f. What would you do if you received information from these organisations in the mail or newspaper?
   g. What would make you read or take notice of information these organisations were to provide?

4. Tell me about the influential people in your life?
   a. Would you go to them for information, an opinion or feedback?
   b. Who else would you go to for advice? Why?
   c. Are you usually satisfied with the information they provide?
   d. Why would you go to some people and not to others... what makes someone’s opinions more valid than others?
   e. Are there people or groups you trust over others to provide you with accurate information?
   f. Do you think people value the information you provide? Why?
5. Who do you think are the important or influential people in the community?
   a. What do you think makes them important or influential?
   b. Do you know people who just seem to get things done, either for other people, local groups or just in the community in general?
   c. What is it they do that enables things to happen or get done?
   d. What effect do they (and their actions) have on you, others or the community?
   e. What do you think motivates people to become active members of a community?

6. How do you get information?
   a. What are the best ways to find out what's happening around town?
   b. How do you get information about the things that happen outside town?
   c. How do you get information about the things that are interesting or important to you?
   d. How do you prefer to get information... through personal conversations, email, newsletters, reports, pamphlets, websites learning from others (practical experience) etc?

7. What are the best ways to share information and knowledge in the community?
   a. What are your thoughts on the local community newspaper?
   b. Do you receive much information in the mail?
   c. Do you take notice of it?
   d. Do you use the internet to talk and exchange information with friends, colleagues and other people?
   e. Would you attend a local workshop, if the topic was:
      i. Very interesting to you and important to the community;
      ii. Interesting to you and important to the community;
      iii. Mildly interesting to you though important to the community;
      iv. Not at all interesting to you but important to the community.
   f. Would you attend a local workshop, if the topic was:
      i. Very important to the community and interesting to you;
      ii. Important to the community and interesting to you;
      iii. Mildly important to the community though interesting to you;
      iv. Not at all important to the community but interesting to you.

8. What would motivate you to attend or participate in a community event or activity?

9. Can you tell me the way in which you best learn, take up new knowledge or gather information from other sources?

10. Is there anything else you would like to offer? The good things and the not so good things about the community?
7.2 Appendix two: General consent form

This consent form relates to interviews, group discussions, questionnaires and other related activities associated with the a PhD study being undertaken by Paul Royce from Charles Darwin University.

This biosecurity project is a community based initiative that aims to involve local residents in reducing the risk of a biological incursion occurring in the (the community). A significant part of this will be a research project that will involve a range of people sharing their views on how they gather information and new knowledge within their local networks (friends, families, neighbours, “experts”, the internet etc).

The bulk of this information will come from a series of interviews, group sessions and conversations scheduled to commence in January 2007 and continue through until to December 2008.

However, before any formal proceedings can commence, permission has to be granted by each potential participant in the research project.

This study has been approved by the Human Research Ethics Committee at Charles Darwin University, which ensures that all research activity will be undertaken in an ethical manner that respects the privacy and confidentiality of all those involved (and the information they share). All interviews, group sessions and conversations will be held at a time and place most suitable to the participant.

Some interviews may be recorded by audio tape while the researcher may also photograph some activities. Further permission will be sought before any photographs are used in newspaper articles, newsletters, journals or other associated publications. However, photographs of participants will only be used in publications relevant to this project.

Similarly, information provided by the participants will only be used for this project and assist the researcher gain a general view of how local people gather information and transfer knowledge through informal, formal and experiential learning practices. This in turn, will enable new ways of providing biosecurity information to be developed that are more appropriate and relevant to different groups living in and visiting the region.

Therefore, I ........................................of .......................................................... consent to participate in this project being conducted by Paul Royce from Charles Darwin University.
In doing so, I acknowledge that:

- The aims, methods and expected benefits of the research project have been explained to me by the researcher;

- I voluntarily and freely give my consent to participate in this research project;

- Information provided by me will not be released to any other source and the combined results of this research will be included in an academic thesis as well as possibly being presented at conferences and/or in academic and scientific journals;

- Full confidentiality will be kept by the researcher (and others assisting with the study) to ensure my name or identity (or that of others) will not appear in this research project;

- Some interviews may be recorded by audio tape, which will be used to ensure an accurate depiction of the information provided, while photography may also be used to record specific events or activities;

- I am free to withdraw my consent to participate in this research project at any time in which case, any information offered by me will be returned or destroyed at my request.

.................................................................  ................................................
signature                                     date

If you have concerns before, during or after the completion of this project, you are invited to contact the Executive Officer of the Human Research Ethics Committee at Charles Darwin University on (08) 8946 6498 or via email on xxx.xxx@cdu.edu.au. The Executive Officer will pass on any concerns to other appropriate staff members at Charles Darwin University.

If you have any further questions about this project, please contact the researcher, Paul Royce on 0424 xxx xxx or email paul.royce@cdu.edu.au.

This is a joint project between the Cooperative Research Centre for National Plant Biosecurity, the xxx Board of Management and Charles Darwin University.

*(some items have removed from this version of the general consent form to ensure privacy)
7.3 Appendix three: Student consent form

(The) District High School has agreed to allow a number of students to be involved in a project to find out how people from different backgrounds learn by sharing ideas, information and new knowledge with one another.

However, as a student at (the) District High School you have to give permission before anyone talks with you and records what you say.

Therefore, I ............................................................
give permission to be interviewed in a group at the school by Paul Royce.

- I know that I don’t have to be involved in this project, but I would like to.
- I know that I will be doing a group interview with five other students from my class as part of the project.
- I have talked to at least one parent or guardian about my involvement in this project and they have agreed that I can take part in the interview by completing a parent consent form.
- I know I can stop and withdraw from the project if I want to and anything I have said will be destroyed, unless my parents or guardian and I agree that you can use my information when writing about this project.
- I understand that by participating in this project, my grades, my relationship with my teacher(s) or my school will not be affected.
- I understand that I need to write my name in the space below, before I can be a part of the project.

............................................................ ....................................
name date

If you need to know anything else about the project, please call Paul Royce on 9168 xxxx or 0424 xxx xxx.

However, if you are worried about your involvement in the project or want another person to help explain the questions to you, we can arrange for someone else to be in the classroom during the interview with the students.
If you have any other concerns about how this project is run or the way you have been treated, you can contact xxx xxx at Charles Darwin University on (08) 8946 6498. Xxx works with the Human Research Ethics Committee and makes sure all projects at the university are done without harming, upsetting or disrespecting people and the stories they provide. Xxx can pass on any of your comments or concerns to the right people at the university.

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*(some items have removed from this version of the general consent form to ensure privacy)
7.4 Appendix four: Parent/guardian consent form

(The) District High School has agreed to allow a number of students to be involved in a research project to find out how people from different backgrounds learn by sharing ideas, information and new knowledge with one another.

However, as a parent/guardian of a student at (the) District High School, you have to first give permission before anyone can talk with them and record what they say.

Therefore, I .................................................................................................................. being the parent or guardian of ........................................... give permission for my child to be part of a group interview at the school with Paul Royce.

- I have read this form and the information sheet provided, or had someone explain it to me in a language I am familiar with, and understand the aims, procedures and risks of this project.

- Any questions I may have had about my child’s participation in this project, I have asked the appropriate people and I am satisfied with the answers I received.

- I am willing for my child to be involved in the research project as described.

- I have discussed what it means to participate in this project with my child and he/she has demonstrated a willingness to take part, as indicated by his/her completion of the child consent form.

- I understand that both my child and I are free to withdraw from the project at any time, without affecting the family's relationship with my child’s teacher or my child’s school.

- I give my permission for my child’s contribution to be used as supporting material for a doctoral thesis, provided that my child and/or the school is not identified in any way.

- I understand that a summary of the findings from the research will be available to me and my child upon its completion and at my request.

.................................................................................................................................

signature                                       date
If you need to know anything else about the project, please call Paul Royce on 9168 xxxx or 0424 xxx xxx.

However, if you are worried about my child being involved in the project or want another person to help explain the questions to them, we can arrange for someone else to be in the classroom during the interview with the students.

If you have any other concerns about how this project is run or the way you have been treated, you can contact xxx xxx at Charles Darwin University on (08) 8946 6498. Xxx works with the Human Research Ethics Committee and makes sure all projects at the university are done without harming, upsetting or disrespecting people and the stories they provide. Xxx can pass on any of your comments or concerns to the right people at the university.

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*(some items have removed from this version of the general consent form to ensure privacy)*
Principal Researcher
Paul Royce

Purpose of the study
For many years, the Department for Agriculture and Food has been working with the Primary Industry Association to identify ways of reducing the risk of a biological incursion in the local community.

The phrase biological incursion primarily means an invasion or infestation of plants, insects, animals or disease that has the potential to have a significant impact on our local crops (such as mangos, citrus and sugar cane) and therefore the livelihood of people living in (the community).

Similarly, the term biosecurity refers to the things we can do to reduce the risk of (biological) pests coming into the (region) and causing damage to our farms, rivers, natural bushland or even the spots we like to visit such as a favourite fishing hole or a remote corner of a national park.

After three years of working together, the Department for Agriculture and Food and the primary industry sector, with support from the Shire, developed the Regional Biosecurity Plan, which sets out ways in which everyone in (the community) can play an active role in making sure such an incursion does not happen.

Benefits of the study
(The community) is made up of people from a wide range of backgrounds, professions and general interests including primary industry, tourists and tour operators, Indigenous groups, government agencies, schools and other local residents.

At present, information about biosecurity is presented in the same way across the community, whether it be pamphlets, signage or reports. Knowing that one single approach to biosecurity is not appropriate for everyone living in and visiting the area, this project aims to understand the manner in which people from a range of different backgrounds access information and new knowledge through their local networks. To do this, a significant amount of information will be collected through interviews, group discussions, conversations and observation to better understand the manner in which individuals, groups and organisations gather new knowledge through formal and informing learning techniques.

This will enable new approaches to be developed so biosecurity information can be shared more effectively throughout the community, thereby reducing the risk of a biological incursion occurring in the region.
What would be expected of you?
If you agree to take part in this research, you will be interviewed for approximately one hour by the principal researcher with the possibility of follow-up discussions later in the project. You will be able to stop or finish the interview at any time and have the opportunity to provide further information by phone, email, fax or personal discussion if need be.

As the researcher is interviewing a significant number of people, it would be helpful if you would allow us to digitally record interviews to ensure we document your viewpoint as accurately as possible. All recordings will be anonymous and specifically coded so no one can identify any one interviewee.

Discomfort and risk
There is no risk associated in participating in this project while the only discomfort that may be felt may be the interview process itself.

Confidentiality
The researcher and others involved in the project will keep all information confidential and will in no way reveal your name, the names of others or job titles in the interview transcripts or any other written material associated with this project.

Your participation
It would be great if you did participate so we can design new ways to provide biosecurity information in a much more effective manner. If you choose to take part, you are however free to withdraw or cease participation at any time.

Results of the study
A summary of your transcript can be made available to you and all further comments or feedback will be considered for inclusion in the data material. If you wish to see the full transcript of your interview or audio recording, arrangements can be made to accommodate your request.

Contacts
If you have any questions about this project, please contact the principal researcher, Paul Royce on 9168 xxxx, 0424 xxx xxx or paul.royce@cdu.edu.au.

If you have concerns before, during or after the completion of this project, you are invited to contact the Executive Officer of the Human Research Ethics Committee at Charles Darwin University on (08) 8946 6498 or email xxx.xxx@cdu.edu.au. The Executive Officer will pass on any concerns to other appropriate staff members at Charles Darwin University.

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*(some items have removed from this version of the general consent form to ensure privacy)
7.6 Appendix six: Student information sheet

What is this project about?
Over the last few years, people working in the local agricultural industry have been trying to find ways to get residents of (the community) involved in biosecurity.

The word biosecurity refers to all those things we try and do to reduce the chance of biological pests (such as insects, disease, weeds and feral animals) coming into the area and causing damage to our farms, rivers, wildlife, natural bushland or our favourite fishing holes and national parks. If a lot of pests start coming into (the community), it’s called a biological incursion which basically means an invasion or infestation, which can cause damage to many of our local crops such as mangos, grapefruit, chickpeas and sandalwood.

Why should I do this project?
(The community) is made up of people from lots of different backgrounds, so it’s important to get as many of them involved in this project as possible. For example there are a lot of tourists coming into the area, as well as farmers, government workers, Aboriginal people and other local residents. Young people are also valuable members of the community so it is important to hear what students from (the) District High School have to say too.

With such a big mix of people, it’s hard to work out the best way to provide information about biosecurity because everyone has a different way of doing things. For example, the way government people talk to each other is very different to the way tourists or Aboriginal people talk to each other. Therefore, this project hopes to find out the best ways to provide people from different backgrounds with important information on biosecurity.

To do this, a lot of material has to be collected to find out how different people learn by sharing ideas and information with one another. This will be done by meeting and talking with people, asking questions, reading books and looking around (the community) to see what happens in the community.

Who is doing the project?
Paul Royce lives in (the community) and is doing these interviews as part of a bigger research project with Charles Darwin University. Before that, he used to work with young people and their families in different parts of Western Australia.

What do you want me to do?
If you decide to be part of this project, you will be interviewed with five other students from your class - at the school and during school time. The interview should only take forty minutes and you are able to able to stop or take a break at any time. You will also be able to provide more information later on either by phone, email or personal conversation if you want to.
As this will be done as a small group, interviews will be recorded to make sure everything you say is taken down clearly and accurately. Everything that is said or written down during these interviews (including audio recordings) will be stored on a personal computer and then for five years at Charles Darwin University before being destroyed.

What are the risks?
There is no risk to you at all and whatever you say will not affect your grades, your relationship with your teacher(s) or the school.

Won’t people know what I say?
Everything you say will be confidential, which means your name and the names of others will not appear in anything related to this project.

What if I decide I no longer want to do this?
If you decide to be part of this project, you can pull out at any time without having to give any particular a reason. If this does happen, there will be no bad feelings toward you and anything you said during the interviews will be removed and not used when writing about the project (unless you still allow us to use your information).

How do I find out what was said?
Everything said in your interview will be typed up, printed out and can be given to you if you would like a copy.

Contacts
If you have any questions about this project, please feel free to contact Paul on 9168 xxxx, 0424 xxx xxx or paul.royce@cdu.edu.au.

If you have concerns before, during or after the completion of this project, you can contact the Executive Officer of the Human Research Ethics Committee at Charles Darwin University on (08) 8946 6498 or email xxx.xxx@cdu.edu.au. The Executive Officer will pass on any concerns to other appropriate staff members at Charles Darwin University.

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*(some items have removed from this version of the general consent form to ensure privacy)
7.7 Appendix seven: Parent/guardian information sheet

Principal Researcher
Paul Royce lives in (the community) and is undertaking this research project as part of a Doctorate of Philosophy. He has a background in youth work and community development and has a valid “Working With Children” check, which has been cited by the principal of (the) District High School.

Purpose of the study
In recent times, the Department for Agriculture has been working with the Primary Industry Association to identify ways to reduce the risk of a biological incursion in the local community. After three years of working together, the department for agriculture, the primary industry sector and the Shire developed the Regional Biosecurity Plan, which sets out ways in which everyone in (the community) can play an active role in making sure such a biological incursion does not happen in the region.

The phrase biological incursion primarily means an invasion or infestation of plants, insects, animals or disease that has the potential to have a detrimental impact on our local crops (such as mangos, citrus and sugar cane) and therefore the livelihood of people living in (the community). Similarly, the term biosecurity refers to the things we can do to reduce the risk of these pests coming into the area and causing damage to our farms, rivers, natural bushland or even the spots we like to visit such as a favourite fishing hole or a remote corner of a national park.

Benefits of the study
(The community) is made up of people from a wide range of backgrounds, professions and general interests including primary industry, tourists and tour operators, Indigenous groups, government agencies, young people and local residents. At present, information about biosecurity is presented in the same way across the community, whether it be pamphlets, signage or reports. Knowing that one single approach to biosecurity is not appropriate for everyone living in and visiting the area, this project aims to understand the manner in which people from a range of different backgrounds access information and new knowledge through their local networks. To do this, a significant amount of information will be collected through interviews, group discussions, conversations and observation to better understand the manner in which individuals, groups and organisations gather new knowledge through formal and informing learning techniques.

This will enable new approaches to be developed so biosecurity information can be shared more effectively throughout the community, thereby reducing the risk of a biological incursion occurring in the region.

*(some items have removed from this version of the general consent form to ensure privacy)*
What would be expected of your child?
If you and your child agree to take part in this research, your child will be interviewed in a group of no more than six others (at the school and during school time) for around forty minutes by the principal researcher. A member of the school’s staff will be present during the group session and your child will be able to stop or finish the interview at any time and/or provide further information by phone, email, fax or personal discussion at a later date if need be.

As the researcher is talking to a small group, all interviews will be digitally recorded to ensure your child’s views are documented as accurately as possible. All research material (including audio recordings) will be stored by the principal researcher on a personal computer and then for five years at Charles Darwin University before being destroyed.

Discomfort and risk
There is no risk associated in participating in this project while the only discomfort that may be felt may be the interview process itself.

Confidentiality
The researcher will keep all information confidential and specifically coded so there will be no reference to your child or the names of others in the interview transcripts or any other written material associated with this project.

Your child’s participation
If you and your child choose to take part in this project, you and your child are free to withdraw from the project at any time without justification and/or consequence. If this does happen, any information provided by your child will be removed and destroyed unless otherwise agreed to by yourself and your child.

Results of the study
A summary of the interview transcript can be made available and all further comments or feedback will be considered for inclusion in the data material. If you or your child wishes to see the full transcript of the interview, arrangements can be made to accommodate your request.

Contacts
If you or your child have any questions about this project, please contact the principal researcher, Paul Royce on 9168 xxxx or paul.royce@cdu.edu.au.

If you have concerns before, during or after the completion of this project, you and your child are invited to contact the Executive Officer of the Human Research Ethics Committee at Charles Darwin University on (08) 8946 6498 or email xxx.xxx@cdu.edu.au. The Executive Officer will pass on any concerns to other appropriate staff members at Charles Darwin University.

This is a joint project between the Cooperative Research Centre for National Plant Biosecurity, the xxx Board of Management and Charles Darwin University.
Appendix eight: Semi-structured interview questions - tourists

1. Tell me about your time in (the community)?
   a. How long have you been in the area – how long do you intend to stay?
   b. Do you like being here?
   c. Where is your home base?
   d. Where were you before arriving in (the community)?
   e. What do you like to do in your leisure time?

2. Is meeting people an important part of travelling?
   a. Who would you typically talk with while you are travelling?
   b. What is it that makes you want to have more than just a brief conversation with someone – what would make you invite or accept an offer from them to share a meal, a beer or glass of wine?
   c. How often would you engage with other people while travelling?
   d. Would you do this if you were back in your permanent place of residence?
   e. What do you get out of conversing with others?
   f. What is it that you offer back?
   g. How important is it to converse with others?
   h. How strong or weak are your ties with fellow travellers?

3. Tell me about some of the organisations in the town?
   a. What organisations have you had contact with?
   b. What kind of relationship do you have with the people in these organisations?
   c. Do you know of any prominent organisations in the town?
   d. What makes them important or influential?
   e. Do you read information from local organisations or groups?
   f. What would make you read or take notice of information these organisations provide?

4. Tell me about the people that influence you while you're travelling?
   a. Who would you go to for information, an opinion or feedback?
   b. Are you usually satisfied with the information they provide?
   c. Why would you go to some people and not to others... what makes someone's opinions more valid than others?
   d. Are there people or groups you trust over others to provide you with accurate information?
   e. Do you think people value the information you provide? Why?

5. How do you get information?
   a. What are the best ways to find out what's happening around town?
   b. How do you get information about the things that are interesting or important to you?
c. How do you prefer to get information... through personal conversations, email, telephone, pamphlets, websites, learning from others (practical experience) etc?

6. What are the best ways to share information and knowledge in the community?
   a. Have you read the local newspaper?
   b. Do you use the internet to talk and exchange information with friends, colleagues and other people?

7. Would you to attend or participate in a community event or activity if there was one on?

8. Can you tell me the way in which you best learn, take up new knowledge or gather information from other sources?

9. Is there anything else you would like to offer? The good things and the not so good things about (the community)?

If you have concerns before, during or after the completion of this project, you are invited to contact the Executive Officer of the Human Research Ethics Committee at Charles Darwin University on (08) 8946 6498 or via email on xxx.xxx@cdu.edu.au. The Executive Officer will pass on any concerns to other appropriate staff members at Charles Darwin University.

If you have any further questions or comments about this project, please contact the researcher, Paul Royce on 0424 xxx.xxx or email paul.royce@cdu.edu.au

This is a joint project between the Cooperative Research Centre for National Plant Biosecurity, the xxx Board of Management and Charles Darwin University.

*(some items have removed from this version of the general consent form to ensure privacy)*