

**SOCIO-CULTURAL DYNAMICS OF A RAINWATER HARVESTING PROJECT IN
RURAL THABA NCHU**

by

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DECLARATION

I declare that the thesis hereby submitted by Relopile Gosiamé Goitsemodimo for the degree Master of Arts at the University of the Free State is my own independent work and has not previously been submitted by me at another University/Faculty. I further more cede copyright of the thesis in favour of the University of the Free State.

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BLOEMFONTEIN

July 2015

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LIST OF ABBREVIATIONS

ARC-ISCW	Agricultural Research Council – Institute for Soil, Climate and Water
CB:WHIG	Community Based Water Harvesting Interest Group
DFID	Department for International Development
ESCOR	Economic and Social Committee on Research
FAO	Food and Agricultural Organisation
IDS	Institute of Development Studies
IISD	International Institute for Sustainable Development
IRD	Integrated Rural Development
IRWH	Infield Rainwater Harvesting
IWRM	Integrated Water Resource Management
MB:WHIG	Municipal Based Water Harvesting Interest Group
ODI	Overseas Development Institute
RWH&C	Rainwater Harvesting and Conservation
SL	Sustainable livelihood
SLA	Sustainable Livelihoods Approach
SLF	Sustainable Livelihoods Framework
SLSO	Sustainable Livelihoods Support Office
SNA	Social Network Analysis
SRL	Sustainable Rural Livelihoods
TSFC	Tswelopele Small Farmers Cooperative
UFS	University of the Free State
UN	United Nations
UNCED	United Nations Conference on Environment and Development

SUMMARY

Rural poverty is a major crisis across the world, particularly in Sub-Saharan Africa where the majority of the population reside in rural areas. South Africa is no exception, with a rural population that exceeds 40% and is characterised by widespread poverty (unemployment, food insecurity, environmental degradation and resource shortage, particularly water). The study focuses on the largely rural town of Thaba Nchu, with 42 villages, in the Free State Province about 60 km east of Bloemfontein. Water shortage is a major constraint in this semi-arid town with low and erratic rains of about 500 mm per annum, as it affects many of the livelihood strategies practised in the rural areas such as crop production and livestock breeding, which rely mostly on rainwater. The majority of the households are therefore dependent on social grants as the main source of income and the support they receive from their social networks (relatives, friends, neighbours and other acquaintances). In order to enable households in the area to enhance food security and well-being, the Rainwater Harvesting and Conservation project introduced the Infield Rainwater Harvesting (IRWH) technique. However, the acceptance and sustainability of the project as well as the technique applied have been affected by various factors. The purpose of this study is to investigate the socio-cultural dynamics and livelihoods in the villages of Potsane and Rietfontein (Thaba Nchu), in order to gain an insight into the impact of the rainwater harvesting and conservation technique on sustainability and food security.

Ethnographic research methods such as participant observation, in-depth interviews with key informants, focus group discussions with selected members of the communities and case studies with leading members of the Rainwater Harvesting and Conservation (RWH&C) project were employed in the study. These techniques were favoured because they tend to forge a closer relationship between the researcher and the participants, who are viewed as valuable members of the research.

Keywords: Rainwater harvesting, food security, sustainability, social networks, livelihoods, water shortage.

OPSOMMING

Armoede op die platteland is wêreldwyd 'n reuse krisis, veral in Sub-Sahara Afrika, waar die meerderheid van die bevolking in landelike gebiede woon. Suid-Afrika is geen uitsondering nie, met 'n landelike bevolking van meer as 40%, en gekenmerk deur wydverspreide armoede (werkloosheid, voedselonsekerheid, omgewingsagteruitgang en 'n tekort aan hulpbronne, veral water). Die studie fokus op die merendeels plattelandse dorp Thaba Nchu in die Vrystaat, ongeveer 60 km oos van Bloemfontein en wat uit 42 kleiner dorpieë bestaan. 'n Tekort aan water is 'n groot beperking in hierdie semi-dorre dorp, met 'n lae en ongereelde reënval van ongeveer 500 mm per jaar, aangesien dit baie van die strategieë om op die platteland 'n bestaan te maak, soos gewasproduksie en die aanhou van lewendehawe raak, wat almal meestal op reënwater staatmaak. Die meerderheid van die huishoudings is gevolglik afhanklik van maatskaplike toelae as die hoofbron van inkomste asook steun van sosiale netwerke (familie, vriende, bure en ander kennisse). Ten einde huishoudings in die streek in staat te stel om voedselsekuriteit en welstand te verhoog, het die Rainwater Harvesting and Conservation project die Infield Rainwater Harvesting (IRWH)-tegniek bekendgestel. Die aanvaarding en volhoubaarheid van die projek, sowel as die tegniek wat toegepas word, word deur verskeie faktore geraak. Die doel van hierdie studie is om die sosiokulturele dinamika en bestaanswyses in die dorpieë Potsane en Rietfontein (Thaba Nchu) te ondersoek om sodoende insig te verkry wat betref die impak van die rainwater harvesting and conservation-tegniek op volhoubaarheid en voedselsekuriteit.

Etnografiese navorsingsmetodes soos deelnemerwaarneming, diepgaande onderhoude met sleutelinformante, fokusgroepbesprekings met geselekteerde lede van die gemeenskappe en gevallestudies met toonaangewende lede van die Rainwater Harvesting and Conservation project (RWH&C) is in die studie gebruik. Die keuse het op hierdie tegnieke geval omdat dit meestal gelei het tot 'n hegte verhouding tussen die navorser en die deelnemers, wat as waardevolle lede van die navorsing beskou is.

Sleutelwoorde: Reënwater-oes, voedselsekuriteit, volhoubaarheid, sosiale netwerke, bestaanswyses, watertekort.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND AND PROBLEM STATEMENT

Across the world, rural areas have become centres of unemployment, poverty, food insecurity, disease, water shortage and environmental degradation (Havnevik *et al.* 2006). Ironically, these are areas where a proportional percentage of the world's population reside. In South Africa, it is estimated that more than forty percent of the population live in rural areas (Mazibuko *et al.* 2008). The majority of the people in these areas are described as smallholder or subsistence farmers, who produce their own food. Agriculture for them is a survival strategy. However, lack of access to resources, particularly water, threatens their ability to secure and enhance their socio-economic conditions. Merrey *et al.* (2005) confirm that lack of access to water for the household and productive purposes is a central feature of poverty in many rural areas.

In South Africa, the majority of rural households receive as little as 25 litres of water per day (Moriarty & Butterworth 2003:3). Most of these households are in the semi-arid regions of the country, which experience low and erratic rainfall ranging between 150–250 mm and 250–500 mm per annum. The lack of water supply, combined with unreliable rain is a major challenge for many rural households. The town of Thaba Nchu in the Free State Province of South Africa, about 60 km east of Bloemfontein, is one example. This largely rural town (comprising 42 villages) has a high rate of poverty, mostly characterised by unemployment, resource scarcity and food insecurity. Water shortage is a major constraint, as it influences the food security and well-being of the households. Results from the Census of 2011, however, show an increase in the number of households with access to piped water from 2001 to 2011. In the Mangaung Municipality (of which Thaba Nchu is part) it is reported that about 85% of households now have access to piped water inside their yards (inside the dwelling or outside), 11% have access to the resource from communal stands and only 2% still lack access to the resource (Municipal Report of Census 2011). Unfortunately, these figures do not make a distinction between rural and urban areas. Thus, one is not certain about service delivery in rural areas, but people in the villages of Potsane and Rietfontein at Thaba Nchu still regard water as a scarce resource. This could be due to the fact that they rely more on rainwater (which is unreliable) than municipal water for agricultural activities.

The report showed a decrease in the size of the households (i.e. the number of people per household) and the number of households headed by children in Mangaung. However, the number of households headed by females is reported to have increased from 36% in 1996 to 40,6% in 2001 and 40,8% in 2011. In South Africa households headed by children, women and the elderly (in most cases women), especially in rural areas, are known to be the most vulnerable and/or poor. Poverty in these households is often the result of various factors, which include social and economic exclusion (e.g. exclusion from taking part in decision-making, lack of education and unemployment). Figure 1.1 below shows the distribution of the population by sex and age in Mangaung.

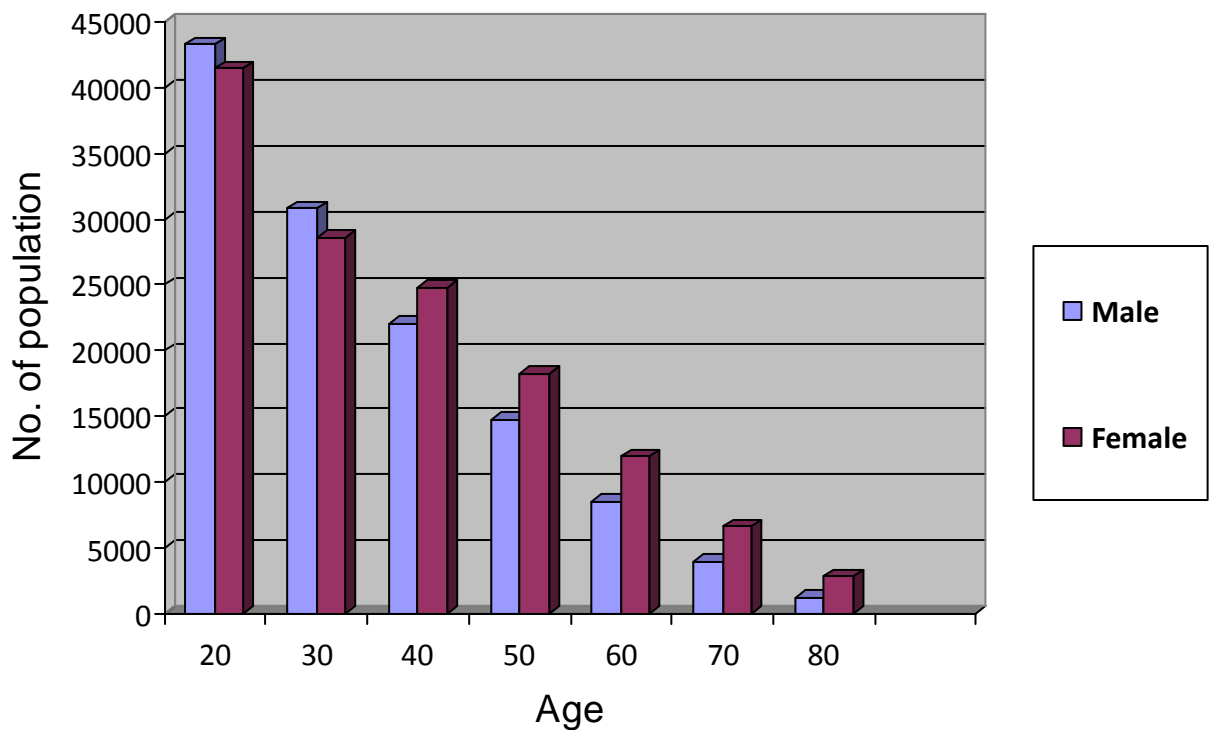


Figure 1.1 Distribution of population by age and sex in Mangaung (Municipal Report Census 2011)

The graph shows that between the ages of 20 and 24, the male population exceeds that of the female population, but by the age of 40 or more years, the female population becomes greater

than the male population.¹ These results could explain the increase in the number of households headed by females. Unfortunately, the reasons for the decline in the male population were not provided, but mortality and migration are possible reasons. In such cases, the absence of a male partner often affects the well-being of the household, especially if the female is unemployed or elderly, which is common in most rural areas. Nonetheless, support from the extended family, friends and other acquaintances can provide the necessary financial and emotional support needed by the household. Leonardi and Nanetti (cited in Daskon & Binns 2010:510) mention, “there is a greater chance of achieving socio-economic development, where mutual reciprocity and trust, based on family kinship and traditional customs, play a pivotal role”. Support from family, friends and neighbours can enhance security and reduce vulnerability (Grootaert & Van Bastelaer 2002). This need for support is more evident in rural areas where the livelihoods of people are affected by insufficient resources. Thus, gaining membership to certain networks guarantees access to the necessary resources (Lin 1999; Woolcock & Narayan 2000). Esterhuysen (2012:95) also states, “the assumption is that water utilization and food production are socially embedded in the sense that individuals with different levels of support, are bound together in a situation of risk and uncertainty to collectively find ways to deal with scarcity in resources”.

According to Fontein (2008:737), experts warn that the amount of water used globally is expected to increase by more than twice the amount recharged by rainfall per annum. Water management is therefore essential to meet the increasing demand for this very scarce resource. In the face of the escalating water problems, attempts have been made through various development projects to educate communities about water management and conservation. One such project was the collaborative project between the University of the Free State, University of Fort Hare and the ARC-ISCW of South Africa (Agricultural Research Council – Institute for Soil, Climate and Water), which began in 2003 and ended in 2011, with the focus on the use of rainwater in agriculture.

During the first phase of the project, a new technique of rainwater harvesting (Infield Rainwater Harvesting) was introduced to a selected group of crop producing households in

¹ The results in the graph are not representative of the ages 20–30, but 20–24. The same applies to the other ages (e.g. 30–34, 40–44, etc.). The age categories were divided into 20–24 and 25–29 years in the report, but for the analysis only the first values were considered.

the villages of Potsane² and Rietfontein in Thaba Nchu (which is approximately 60 km east of Bloemfontein) in the Free State Province. The Infield Rainwater Harvesting (IRWH)³ technique was to enable the households in these semi-arid areas to enhance food security and have sustainable livelihoods by producing sufficient food for their own consumption and possibly for selling. On-field and on-farm field experiments conducted over a period of 15 years showed improvement of yields, particularly of maize, with the use of IRWH technique (Viljoen *et al.* 2012; Backenberg 2009). The results aroused interest from various villages and by 2004, more than 1 000 households from 42 villages were taking part in the project. Rainwater harvesting associations known as *Matangwana* (term that denotes a small dam in Sesotho) or Community Based Water Harvesting Interest Group (CB: WHIG) were formed to provide participants with support. Due to the growing interest, the decision was taken to form the Municipal Based Water Harvesting Interest Group (MB: WHIG)⁴ or Tswelelopele Small Farmers Cooperative (TSFC). That was done to serve as “a mouthpiece for the farmers from all the communities and is able to regularly (once a month) call meetings for all the CB:WHIGs to discuss challenges and issues that arise from individual communities and address them as a collective” (Botha *et al.* 2007:ix). Another important function of the MB:WHIG was to discuss challenges with the project team and any stakeholder. Organisations that were co-opted into the MB:WHIG were the municipality, tribal authority and local agriculture office (Backenberg 2009).

The Masters research under review forms part of the second phase (2008–2011), which aims to investigate the socio-cultural dynamics and livelihoods in the selected villages in order to gain an insight into the impact of the new rainwater harvesting and conservation (RWH & C) technique on sustainability and food security. The theoretical guidance is derived from the Sustainable Livelihoods Framework (SLF), which has been utilized in development projects worldwide since the early 1990s.

² Potsane is also known as Phahameng (meaning elevated)

³ The IRWH technique was introduced to the villages by the ARC-ISCW (Agricultural Research Council-Institute for Soil, Climate and Water) of South Africa. It consists of promoting rainfall runoff on a 2 m-wide strip between alternate crop rows, and storing the runoff water in the basins. Water collected this way can infiltrate deep into the soil below the surface layer from which evaporation takes place. See Figure 1.2.

⁴ Municipal Based Water Harvesting Interest Group (MB:WHIG) is the integrated authority in the hierarchy of the organization of community driven units.

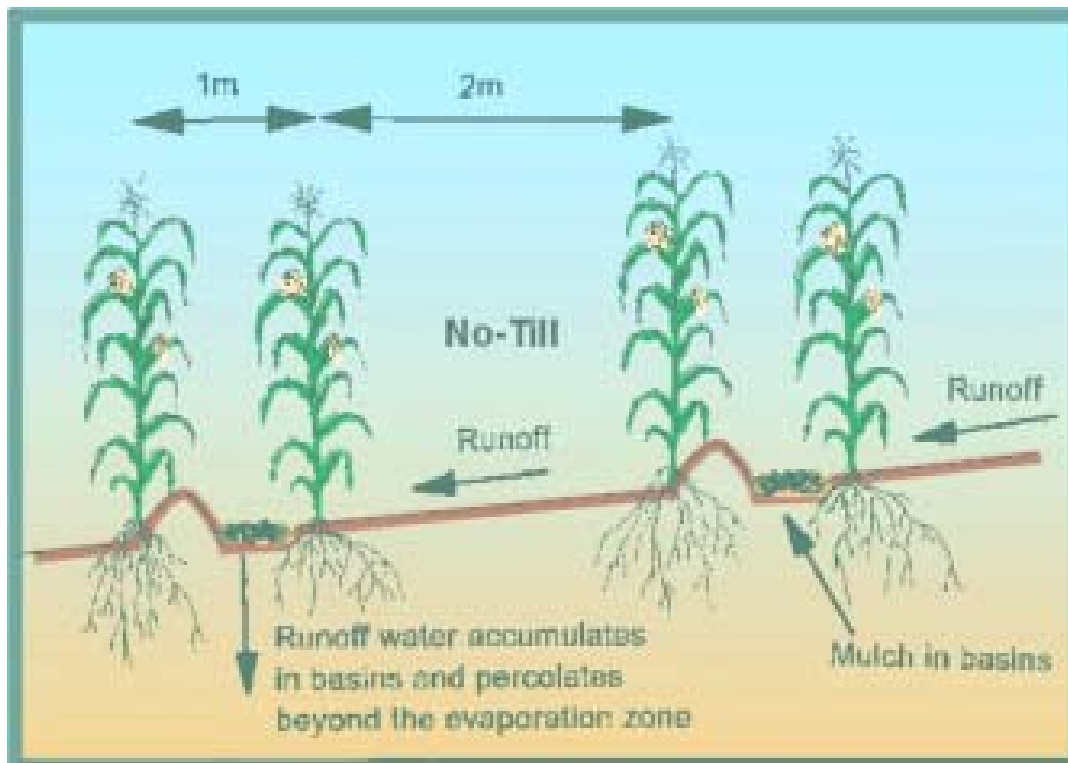


Figure 1.2 A diagrammatic representation of the Infield Rainwater Harvesting technique

1.2 RESEARCH OBJECTIVES

General objective

The general objective of the study is based on Deliverable 8 of the Rainwater Harvesting project, which aims “to identify and assess the socio-cultural dynamics and issues that could impact on the acceptance of the RWH&C techniques and religion and beliefs, conflict potential and dynamics”.

Specific objectives

Specific objectives for the study are:

- a) To discuss the Sustainable Livelihoods Framework as a theoretical foundation for the analysis of household strategies to improve food security and conservation of the natural resource base.

- b) To describe the nature of local customs, norms, beliefs and knowledge involved in the use and conservation of natural resources.
- c) To analyse how the innovations regarding RWH&C techniques have influenced the social relationships in the villages with specific attention to the strength and nature of the social networks.
- d) To conclude whether households involved in the RWH&C project in the selected villages have the ability to sustain food security and alleviate poverty.

1.3 TERMINOLOGY (TERMS OF REFERENCE)

a) Conservation: In the broadest sense, conservation refers to the protection, preservation and maintenance of living and non-living material. According to Orlove and Brush (1996), anthropological research into conservation often focuses on local knowledge and practices held by people with regard to the protection of endangered species and maintenance of crop varieties. Berkes and Turner (2006:479) state, “there are two broadly conceptualized ways in which conservation knowledge may evolve: the depletion crisis model and the ecological understanding model”. The first knowledge evolves when people learn that resources are depletable, usually after experiencing a crisis. The second refers to knowledge regarding the protection of natural resources. Both are gained through interaction with nature.

Conservation is not a primary concept in the study, but mention is made several times of the conservation of the natural resource base, which includes water, plants and soil. Water is a very important, yet scarce resource in southern Africa and many parts of the world. For years, people have created ways of conserving this resource.

b) Food security: At the World Food Summit of 1996 it was stated that food security exists “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life” (Food and Agricultural Organisation [FAO] 1996). Food insecurity is the opposite, referring to having insufficient food. Food insecurity is one of the elements of poverty. Therefore, the focus of this study is on how rainwater-harvesting techniques can help fight poverty and enhance food security, particularly household food security.

c) Livelihoods: The definition by the Department for International Development (DFID) states (Scoones 1998:5),

a **livelihood** comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.

In simple terms, livelihood refers to a way of life; thus, sustainable livelihoods refer to a way of life that is sustainable. **Sustainable livelihood (SL)** is a dynamic approach that looks at the factors that influence people's livelihoods and the important elements of people's lives by linking the social, economic and environmental aspects. The approach identifies five capitals that are essential components of sustainable livelihoods, namely: human, social, natural, physical and financial. In this study, the focus is on rural livelihoods. The framework utilised along with this approach is often used as a guideline in development.

d) Local knowledge: "Local knowledge may be defined as dynamic and complex bodies of know-how, practices and beliefs that are developed and sustained by peoples/ communities with shared histories and experiences" (Beckford and Barker 2006: 118).

e) Poverty: Poverty is a multidimensional concept, which encompasses elements such as unemployment, food insecurity, lack of access to resources and knowledge (education). In the past, the definition of poverty was only limited to financial deprivation, as in the case of unemployment. The definition is now broadened to include deprivation of diverse assets, which are essential for human survival (Whitehead 2002). This includes assets (capital) such as human, social, physical, natural and financial capital, which together determines livelihood strategies (Scoones 1998). In Sustainable Livelihoods approaches (Scoones 1998), they use the term *vulnerability context*, which refers to insecurity from shocks and stress.

f) Rainwater harvesting: "The process of concentrating rainfall from a large area for its productive use on a small area" (Botha *et al.* 2007:vii). The term describes various practices such as rooftop, trenches, pits and the creation of basins between rows of crops that are used in dry regions to collect rainwater for productive use. Although other techniques of harvesting rainwater are mentioned in the study, the focus is on the Infield Rainwater Harvesting technique (IRWH). "The IRWH technique consists of promoting rainfall runoff

on a 2 m-wide strip between alternate crop rows, and storing the runoff water in the basins” (Botha *et al.* 2007:2).

g) Reciprocity: In simple terms, reciprocity refers to mutual exchange, which means that you do to others, as you will want them to do for you. According to Onyx and Bullen (2000:24), “the individual provides a service to others, or acts for the benefit of others at a personal cost, but in the general expectation that this kindness will be returned at some undefined time in the future in case of need”. Reciprocity is nicely encapsulated in the principles of *ubuntu* (Zulu) or *botho* (Sotho). Sotho phrases such as “*fa o fa fi, fi o fa fe*”, meaning the hand that gives also receives or vice versa are examples of how reciprocity applies in general context or principles of *botho* (humanity). In this study, attention is given to the role of reciprocity and trust within social networks.

h) Social capital: Social capital is one of the five capital assets of sustainable livelihoods theory and framework. Social capital “is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives” (SL Guidance Sheets 2000: Section 2.3.2). According to Dillard (*et al.* 2009:2),

the creation of the term ‘social capital’ is an attempt to use the analogy of capital to understand the role of social institutions and processes in the economy, much as environmental economists have used the term ‘natural capital’ to describe natural resources and amenities.

Social capital is very important in this study. It is part of the broad theoretical framework, which begins with sustainable livelihoods, followed by social capital and social networks. Within social capital, the concepts of trust and reciprocity are also addressed.

i) Social network: Nadel (cited in McKinney 2000:186) defines networks as “the interlocking relationships whereby the transaction implicit in one determine those occurring in others”. Social capital, which is actually an asset in social networks, is captured from resources embedded in social networks (Lin 1999:28). The research looks at how the Rainwater Harvesting and Conservation Project influence the social relationships within the villages and role of social networks in providing support for the households.

j) Trust: Trust refers to the ability of an individual or group to have confidence or faith in another. “Trust entails a willingness to take risks in a social context based on a sense of confidence that others will respond as expected and will act in mutually supportive ways, or at least others do not intend to harm” (Onyx & Bullen 2000:24).

1.4 LITERATURE REVIEW

One of the main objectives of the research is to investigate the socio-cultural dynamics and livelihoods in the selected villages (namely Potsane and Rietfontein, Thaba Nchu) in order to gain an insight into the impact of the new Rainwater Harvesting and Conservation (RWH&C) technique on sustainability and food security. To get a broader understanding of the subject, attention is given to issues such as water shortage, especially in South Africa, water use (resource use), rainwater harvesting and conservation (resource management), beliefs about natural resources (especially water), food production and security, sustainable livelihoods, social capital and social networks. All the topics fit within the scope of the sustainable livelihoods theory (approach and framework), which is the theoretical guide of the study. I began my research by consulting a wide range of books, articles and reports. Abstracts in Anthropology, Annual Reviews, Taylor and Francis online (including open access as well as social science and humanities library), JSTOR, Oxford Journals and the UFS (University of the Free State) library catalogue offered and recommended sources by highly noted academics from all over the world, covering various topics in anthropology that relate with my research objectives.

1.4.1 Sustainable livelihoods

Since its official introduction in the early 1990s, the Sustainable Livelihoods approach has gained widespread popularity with international development agencies such as the Department for International Development (DFID), Institute of Development Studies (IDS), Food and Agriculture Organisation of the United Nations (FAO) and Overseas Development Institute (ODI) applying it in their poverty alleviation initiatives. The research done over the years has contributed to the extensive body of literature ranging from books, articles and various other documents (i.e. project reports, conference and working papers). This includes Chambers and Conway (1991), Scoones (1998), Ashley and Carney (1999), Carney (1999) and (2002), Ellis (1999), Krantz (2001) and Solesbury (2003). Some of the research focuses

more on Sustainable Rural Livelihoods (SRL), a concept that was first introduced by Chambers and Conway, but was made popular in the 1990s when Ian Scoones developed the framework. Sustainable Livelihoods and Sustainable Rural Livelihoods have many similarities, as they are both based on the same principles, and apply to research on livelihoods, particularly rural livelihoods. However, not much research links the two (highlighting the similarities and differences), or clearly shows the chronological timeframe of their development. People use the framework they feel applies more to their research.

In 1999 and 2000, DFID issued detailed “guidance sheets” to assist development agencies in applying the SL framework (Murray 2001). The guidance sheets, along with the listed sources, have played an important role in livelihoods research. They have been referenced by many across various disciplines, including the current study emanating from a multidisciplinary research project. The sources have served an important role as discussion papers (Chambers & Conway 1991; Carney 2002), practical tools and lessons learned (Ashley & Carney 1999).

Interest in livelihood research has increased over the years, but much of the focus is still on the eradication of rural poverty, a problem that persists into the twenty-first century (i.e. about two decades after the introduction of sustainable livelihoods). Rural livelihood research gives attention to, for example:

- the linkage of livelihoods and the resource base (e.g. natural assets such as water) (Buechler in Scott *et al.* 2004; Ellis-Jones & Mason 1999; Granfelt 1999; Havnevik 2006; Merrey *et al.* 2005; Moriarty & Butterworth 2003; Sayer & Campbell 2004; Ziervogel & Calder 2003);
- livelihood strategies (Bryceson 1999, 2002; Frank 1999; Hajdu 2006; Murray 2000; Whitehead 2002); and
- whether traditional norms and practices make livelihoods resilient or vulnerable (Sallu *et al.* 2010; Daskon *et al.* 2010).

Most uses of SL approach draw on some form of livelihoods analysis to assess how development activities ‘fit’ with the livelihoods of the poor (SL Guidance 2000).

The research done by Colin Murray, which looks at the livelihoods of the people in Lesotho and the Free State Province of South Africa (including the town of Thaba Nchu) contributed significantly to research on livelihoods, particularly from an anthropological perspective. In his articles, “Changing Livelihoods: the Free State 1990s”, “Livelihood Research: Some Conceptual and Methodological Issues”, and “Livelihood Research: Transcending Boundaries of Time and Space”, he uses case studies to show how the livelihoods of the communities changed over time, as well as the livelihood strategies they pursued in order to improve their standard of living. Through his studies, he was able to identify three livelihood research approaches (circumspective, retrospective and prospective) and ethnographic research methods that can be used to “achieve a better understanding of the various trajectories of change in household livelihoods” (Murray 2001:15). However, Murray has criticised the SL for being too extensive and for its weakness regarding the treatment of power and inequality. The issue of power has also been mentioned by others such as Ashley and Carney (1999), as they agree that it is underemphasised in SL.

a) Natural resources (Water)

The topic on water is very broad, but by narrowing my search to focus specifically on issues such as water shortage, use and management, I was able to get sources that also linked with the sustainable livelihoods theory. For example, Merrey *et al.* (2005) looks at integrating livelihoods into Integrated Water Resource Management (IWRM). Moriarty and Butterworth (2003) focus on the productive uses of domestic water supplies and Fontein (2008) draws attention to the social, cultural and political complexities of water that are often ignored by ecologists and other natural scientists. According to Moriarty and Butterworth (2003:29), “perhaps the greatest value of a livelihood approach to water supply is that the inherent analytical framework will provide an understanding of the complex ways in which supply improvements have the potential to affect lives”. The reports from the Rainwater Harvesting and Conservation project⁵ by Botha *et al.* (2007), Kundhlande *et al.* (2004), Backenberg (2009) and Viljoen *et al.* (2012) were also very useful. These reports provided me with information about water shortage in the study areas (Potsane and Rietfontein), water use (i.e.

⁵ Dr Esterhuysen and I became part of the Rainwater Harvesting and Conservation project team in 2008 until it ended in 2011.

livelihood strategies) and water management practices (including rainwater harvesting and conservation techniques such as the Infield Rainwater Harvesting (IRWH) that was introduced by the ARC-ISCW of South Africa. Furthermore, they also included statistical data (i.e. demographical information about the population, economic situation, particularly employment and expenditure of households).

Berkes and Turner (2006), Byers *et al.* (2001) and Granfelt (1999) address the issues of adaptation and indigenous knowledge (culture). Their research not only links with some of the principles of SL, but also highlights the importance of culture in adaptation and resource management. Byers *et al.* (2001:187) mention that traditional spiritual values influence human behaviour with regard to the protection of natural environments. “Improved understanding of various human management systems and their potential to adaptation and change is an urgent research need to secure people’s livelihoods for the twenty-first century” (Granfelt 1999: vii). Another interesting source utilised in this study is Mogapi (1992). He specifically writes about the culture of the Tswana, which includes information on material culture (objects), traditional ceremonies and traditional knowledge (as reflected in the naming of months and seasons). Although it is very informative, the book does not provide detailed information on the traditional practices of the Tswana. For background on the traditional practices of the Tswana and Sotho speaking people I then referred to Schapera (1956, 1971 and 1984), Hammond Tooke (1981), Jean and John Comaroff (1991) and Ashton (1967). These sources provided an extensive ethnographic record on the way people lived, their practices and beliefs as well as the impact of missionary influence. It is evident that most of the practices recorded in the sources are no longer practised.

b) Social capital

Within Sustainable Livelihoods, my focus was also on social capital, which is one of the five assets in SL. Lin (1999), Christoforou (2012), Portes (1998) and (2000), Ling and Dale (2014), Woolcock and Narayan (2000), Grootaert and Bastelaer (2000) are some of the sources referred to. “The theoretical formulations on social capital of Bourdieu, Coleman and Putnam have greatly contributed to the currency of the concept” (Tzanakis 2013:2). The ideas they present, which have similarities and differences, make them the main stream of thought within social capital theory and research. According to Herreros (2004:6),

the structural definition of social capital is mainly derived from the work of Bourdieu and Coleman, both of whom define social capital as a range of resources available to individuals thanks to their participation in social networks.

Putnam's focus is on the analysis of social capital at the micro-level and Coleman's introduction of a vertical component to social capital opens the door to broader or meso-interpretation (Grootaert & Bastelaer 2002). The different understandings and uses of the concept caused confusion regarding how the concept is to be defined or measured. However, empirical research has shown that social capital can be measured by the analysis of social networks and by looking at trust and reciprocity.

c) Social networks

There is insufficient representation regarding social network studies in anthropology, especially in South Africa. According to Fiona Ross (1995), much of the literature focus on the problems of impoverishment, but little attention is given to how people create and activate networks of support to assist their survival. She has reviewed several unpublished masters and doctoral theses that examine the lives of black people in Southern Africa during the period of 1975–1995. The majority of the theses focus on the need for assistance in agricultural production. The literature review for this study includes a list of masters and PhD theses from South African universities for a period of five years (2009–2013), to see how many postgraduates have paid attention to social networks and support. The results show that there is growing interest in social networks research, especially regarding online social media, such as Facebook and Twitter. However, very few focus on social support, an important aspect in this study. Fiona Ross mentions that networks of support are more prevalent in rural than in urban areas. She concludes that kinship networks, neighbours and friendship are vital. The current study will focus on the role of social networks in two rural villages of Thaba Nchu (Potsane and Rietfontein).

Clyde Mitchell has made major contributions to research on social networks within the disciplines of Anthropology and Sociology. His work, though dated, focuses on the concept and use of social networks. However, Mitchell and his predecessor Barnes have been criticised by Watts (1971:552) for being too methodological, although the emphasis on the metaphorical and analytical use of social networks is still important in anthropology. Social

network analysis relies on mathematical concepts and technical methods, drawing especially on graph theory (Knox *et al.* 2006). McKinney (2000) uses similar mathematical formulas to determine, for example, the strength of the relationship. This was avoided in the study, but to analyse the networks, attention is given to, for example, the number of ties of ego, frequency of interaction and strength of interaction. The above-mentioned are listed in McKinney (2000) as essential methods in collecting data about social networks, particularly ego-centred networks. The concepts of trust and reciprocity that are discussed by Nyoni (2012) and Herreros (2004) are instrumental to understanding the strength and nature of social networks. However, Herreros (2004) mentions that trust is a complex concept. Preston-Whyte (1969) also provides important information regarding social networks.

1.4.2 Methodology

The sources used are divided into primary and secondary sources (see Table 1.1).

Table 1.1 Methods and sources used

PRIMARY SOURCES		SECONDARY SOURCES	
TECHNIQUE	REFERENCE	TECHNIQUE	REFERENCE
Interviews	Ellen (1984), Pelto and Pelto (1984), Hardon <i>et al.</i> (1995), Spradley (1979)	Interviews	Ferraro (2008)
Focus Group Interviews	Bernard (1995)	Focus Group Interviews	
Case Studies	Ellen (1984); Collin (1998); Spradley (1979)	Case Studies	Crane and Angrosino (1992)
Participant Observation	Spradley (1980); Pelto and Pelto (1984); Bernard (1995); Schultz and Lavenda (1998); Dewalt and Dewalt (2002).	Participant Observation	Ferraro (2008), Collins (1998).

Most of the sources used in this study are classical literature on qualitative ethnographic research methods. The sources have contributed immensely to the way research should be conducted and as a result, some of the sources have been reprinted several times over the

years. Pelto and Pelto are amongst the pioneers on research methods, having been the first to publish texts on anthropological methods (Dewalt & Dewalt 2002). Their work has influenced Dewalt and Dewalt (2002), who give credit to the Peltos for paving the way for many that followed them, but also criticise cultural anthropologists for always romanticising fieldwork. They offer a ‘practical guide’ to the researcher (fieldworker) conducting participant observation, which specifies the skills required (i.e. behavioural and social skills, ability to observe and write simultaneously, as well as the ability to resist the impulse to interrupt an unpleasant or disturbing sequence of behaviour). The list of skills on participant observation was actually from a citation of Margaret Mead, whom Dewalt and Dewalt (2002) reference along with several other well-known ethnographers.

Denzin and Lincoln (1994), and Taylor and Bogdan (1997) provide information about qualitative research. Denzin and Lincoln (1994) describe the qualitative researcher as a *bricoleur* (jack-of-all-trades), because they can perform various tasks from observing and interviewing. Detailed information about how to conduct interviews and the ethical procedures to consider is available in Ellen (1984), Pelto and Pelto (1984) and Ferraro (2001).

A chapter in Schultz and Lavenda (1998) looks at ethnographic fieldwork. Among other things, they discuss research methods used by ethnographers (especially participant observation), and how positivism approaches can be applied to anthropological inquiry. Schensul, Schensul and LeCompte (1999) discuss the ethnographic research processes, while Schensul, LeCompte, Nasti and Borgatti (1999) provide information about the research paradigms. The sources used in this section are mostly books and are very relevant, because the methods are still in use. Although they are anthropological methods, they are now applied across various disciplines. However, even though Ferraro is used a lot in the study, it is regarded as a secondary source, because it is a basic introduction to cultural anthropology and only a chapter of the book looks at ethnographic methods.

1.4.3 Study Area

Colin Murray’s book titled *Black Mountain* (1992) (the English translation for Thaba Nchu) is the primary source for the research. This extensive account, which covers a period of hundred years (1880–1980), highlights aspects of the economic, political, ecological and

social lives of the people in Thaba Nchu including the establishment of Botshabelo. Murray uses close to six hundred sources, which include personal interviews, academic articles, books and government papers. He points out the issues of land that resulted in many of the Barolong losing ownership of their land. According to Professor Andrew Spiegel (University of Cape Town), the book shows Murray's skills as "thorough and systematic an archival researcher as he is a fieldworker" (1994:525). He was well respected in the fields of anthropology and history for his work.

The historical aspect is also covered by Watson (1977; 1980) who writes about missionary history in Thaba Nchu from 1833-1854 and the events leading to the annexation of Thaba Nchu between 1880 and 1884. Molema's book, *Chief Moroka: His Life, His Time and His People*, is another historical source used in this study. The book looks at the history of the Barolong boo Seleka (Seleka branch of Barolong), starting with the original founder of the Barolong, followed by information about succession of the chieftainship, migrations of the group, the challenges they faced, formations of different branches, missionary influence, arrival of the Barolong in Thaba Nchu and the events that occurred afterwards. Although the book provides detailed information on the succession and the genealogy, it lacks information about the ecological history of the place, settlement patterns (that could have influenced current patterns) and the livelihood strategies of people during the earlier years after arriving at Thaba Nchu.

Information on the current situation also lacks in general, but reports from government departments (e.g. the Department of Agriculture, ARC-ISCW, Department of Social Development and Department of Health) can be helpful. The research team of the Rainwater Harvesting and Conservation project consulted several reports for background information on the study area and I obtained the information from their reports. Several dissertations are available such as that of Roberts (1966), which provides some ecological information from a survey he did for his doctorate. However, the information is not sufficient, but a comparison can be made between the climatic conditions of then and now.

1.5 OUTLINE OF STUDY

The dissertation consists of five chapters. The first chapter is the Introduction that begins with the background and problem statement with focus on the challenges of water insecurity

and rural poverty. Following the background and problem statement are the research objectives, which are divided into general and specific objectives. The chapter also includes the terminology (terms of reference), the literature review (divided into sustainable livelihoods, methodology and study area) and outline of the study.

The second chapter is the research methodology and context of Thaba Nchu. This chapter focuses on the techniques used to gather data in the field, including the whole process of entering the field as it is stipulated in the discipline of Anthropology. Concluding the chapter is the section about Thaba Nchu, which begins with the historical background. This section on Thaba Nchu also describes the geographical and political characteristics of the area that has a dual political system. Towards the end of the chapter is a discussion on the historical processes that led to the establishment of Potsane and Rietfontein (study areas).

In Chapter 3, the theoretical framework (sustainable livelihoods) is discussed. The empirical research is based on a broad theoretical framework that starts with the sustainable livelihood theory (overview of the approach, principles, framework and pros/cons), social capital and social networks. Within social networks, attention is also given to trust and reciprocity.

Chapter 4 provides the research results. It begins with an introduction, followed by information regarding the traditional customs, beliefs and knowledge related to the use and conservation of natural resources. The focus is on the traditional customs and beliefs of the Tswana and Sotho, as they are the main cultural groups in Thaba Nchu. The results regarding the social relationships within the villages and RWH&C techniques are also presented in this chapter, as well as case studies of selected members of the villages.

Chapter 5 concludes the study, presenting a summary of the whole dissertation and closing remarks.

CHAPTER 2: RESEARCH METHODOLOGY AND CONTEXT

2.1 INTRODUCTION

This chapter provides information on the research methodology and context of Thaba Nchu. It begins with a description of the qualitative research methodology and the various ethnographic techniques such as interviews, focus group interviews and case studies that were used to collect data in the research. Each technique is discussed in detail under a separate subheading. Following the techniques is a section on the research process, with a brief introduction to the field and selection of participants as well as the problems encountered during fieldwork. The chapter concludes with information on Thaba Nchu, starting with the historical context of the town, and including some description of the physical environment, information about the political structures and the two research sites (the villages of Potsane and Rietfontein).

The empirical study was conducted in Thaba Nchu, with the focus on selected households from the villages of Potsane to the north and Rietfontein to the south of Thaba Nchu. The participants were mainly people who took part in the Rainwater Harvesting project, a collaborative project between the University of the Free State, University of Fort Hare and the Agricultural Research Council – Institute for Soil, Climate and Water (ARC-ISCW), funded by Water Research Commission (WRC), with the focus on water utilization in agriculture. The project began in 2003 and ended in 2011. Participants did not just take part in the project, but were also members of the Rainwater Harvesting association, locally known as *Matangwana* (the name denotes a small dam). The majority of the participants were women (\pm 55% at Rietfontein and more than 70% at Potsane), especially elderly women who receive old age pension grants. The units of the study included selected households, individuals as well as interest groups (e.g. members of the Rainwater harvesting association and youth).

2.2 QUALITATIVE RESEARCH METHODOLOGY

The research methodology for the study was qualitative in nature although some of the demographic data (collected by the ARC) was obtained using questionnaires. Qualitative

research “is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter” (Denzin & Lincoln 1994:2). It studies people holistically in their natural settings using their own words. According to Taylor and Bogdan (1997:7-10):

- a) qualitative researchers are concerned with the meanings people attach to things in their lives,
- b) qualitative research is inductive,
- c) in qualitative methodology the researcher looks at settings and people holistically (people, settings or groups are not reduced to variables, but are reviewed as a whole),
- d) qualitative researchers are concerned with how people think and act in their everyday life,
- e) for the qualitative researcher all perspectives are worthy of study,
- f) qualitative researchers emphasize the meaningfulness of their research,
- g) for the qualitative researcher there is something to be learned in all settings and groups, and
- h) qualitative research is a craft.

With qualitative research, the researcher goes out to the people under study and engages them in conversation, while observing and participating in some of their activities. The informants are also not viewed as objects, but as subjects and participants in the research. The research objectives are explained to them in detail, which gives them the opportunity to assist in the research as was done in this study.

2.2.1 Research techniques of data gathering

Participatory observation, in-depth interviews with key informants, focus group discussions with selected members of the communities and case studies with leading members of the Rainwater Harvesting and Conservation project (RWH&C) were employed in the study. These techniques were favoured, because they tend to forge a closer relationship between the researcher and the participants, who are viewed as valuable members of the research.

The techniques used not only assisted with understanding both the perspectives of the researcher and researched, but also provided more information regarding the livelihoods of the selected participants, as well as information about changes in the lives of the participants (circumspective approach and retrospective approach) (Murray 2002).⁶ Each of the techniques used will be discussed under separate headings.

2.2.1.1 Structured and semi-structured interviews

Hardon *et al.* (1995:148) define an interview as a “data collection technique that involves oral questioning of respondents, either individually or as a group”. Interviews can be described as the primary method of data collection in qualitative research, because to obtain information researchers have to engage orally with participants. For this study, both structured and semi-structured interviews were conducted. Semi-structured were mostly used in the beginning to help with orientation and getting to know people involved in the Rainwater Harvesting and Conservation project. These types of interviews have a higher level of flexibility than structured interviews and they enable researchers to ask open-ended questions that allow informants the freedom to exchange information (Ellen 1984). A flexible method of interviewing is useful during the early stages of research when the researcher has little understanding of the problem or situation they investigate (Ferraro 2001:92; Hardon *et al.* 1995:148). Weller (cited in Schensul *et al.* 1999:149) adds that, “semi-structured interviews play an important role in the development of exploratory models and the preparation for more systematic forms of investigation”. Following the orientation, I was able to arrange appointments with some of the members of *Matangwana*⁷ after obtaining names from the association leaders, and asked them about their involvement in the project.

A disadvantage about this type of interview, however, is that it can be time consuming and seem to be unfocussed. To avoid the looseness of semi-structured interviews, researchers develop a set of principles that will guide them during interviewing. For example, the researcher could return to topics to clarify incomplete information, ask questions that fit

⁶ Within the RWH&C project, Participatory Action Research (PAR) and Participatory Rural Appraisal (PRA) methodologies were applied to help with the investigation of the socio-economic acceptability of the IRWH-technique by the people in the target communities

⁷ *Matangwana* refers to the Rainwater Harvesting Associations, which are made up of the people who utilise the technique that was introduced by the Agriculture Research Council (ARC).

within specific cultural domains, or formulate questions to follow a narrative format (cf. Schensul *et al.* 1999). This type of interviewing is known as structured.

Structured interviews have a low level of flexibility. In these interviews “the interviewer asks all informants exactly the same set of questions, in the same sequence, and preferably under the same set of conditions” (Ferraro 2001:92). Structured interviews are often used later in the fieldwork when the researcher has obtained knowledge on the culture been studied and is able to focus specifically on certain elements of that culture. These types of interviews are also used for crosschecking information obtained (Pelto & Pelto 1984). Structured interviews were used especially in the second part of this study and focused on the social dynamics (including social networks) within and amongst households in the selected villages of Thaba Nchu (Potsane and Rietfontein). The participants (six from each village) included people who are members of the *Matangwana* and those who are no longer members.

The interviews were largely influenced by the emic approach, because the researcher wanted to capture the participant’s point of view and record it as they said it without changing the original meaning. The interview questions were translated into Setswana prior to conducting the interviews, in order to save time and to make the interview process easy for both the interviewer and the participants.

2.2.1.2 Focus group interviews

Focus group interviews were conducted with members of *Matangwana*, youth groups from both villages and with a group of traditional leaders. The questions asked during the focus group interviews with the youth centred on their lack of participation and interest in the project. From the beginning, it was established that the youth in many villages of Thaba Nchu are not interested in participating in agricultural activities, because they are labour intensive and have always been seen as a form of punishment in schools. Some of the youth mentioned that they would love to move to urban areas, but others maintained that they preferred living in rural areas. The concern for those who want to make a living in rural areas is how they are going to improve conditions in these areas and sustain their livelihoods. For this reason, it was important to include the youth in specific discussions.

Another focus group interview was conducted with about eighteen headmen from different villages in Thaba Nchu. The headwoman from Potsane was not present at the meeting, but the headman from Rietfontein was among those who participated in the discussions. The discussion focused on the issue of cooperation, trust and reciprocity in the villages as part of understanding the role of social networks in the rural areas.

2.2.1.3 Questionnaires

Questionnaires are used in both qualitative and quantitative research. In qualitative research, questionnaires are often used along with interviews that are either structured or unstructured. Within this study, questionnaires were conducted with face-to-face interviews. This means that the questionnaires were not left with the informants to fill in at their own time, but were orally completed by the interviewer. The questionnaires were used along with semi-structured interviews in the early stages of the research in order to obtain biographical or demographical information of the participants. The questionnaires had two sections the first section focused more on the demographical information of the participants' households and the second on the participants' involvement in the Rainwater Harvesting project. The first section was divided into biographical information, genealogical chart, migration, the economic situation of each household, expenditure and income. From both villages (Potsane and Rietfontein), ten households were selected to participate in the questionnaires.

2.2.1.4 Case studies

According to Ellen (1984:237), "case studies are detailed presentations of ethnographic data relating to some sequence of events from which the analyst seeks to make some theoretical inference". Case studies can focus on any social organisation, such as a community, household or individual, but are commonly utilised where individuals participate. Case studies are similar to biographies and autobiographies, but they are shorter and focus on certain aspects of the individual's life. In anthropology, they also refer to 'life histories', which are similar to case studies as they "reveal the details of a single person's life and in the process show important parts of the culture" (Spradley 1979:24). When collecting life histories, like case studies, anthropologists often use extensive structured interviews that include genealogies of the participants. Moreover, the collection of life histories is important

in studies that focus on personality and culture, the role of the individual in society and developmental history (Crane & Angrosino 1992).

Ten people from both villages were selected to participate in the case studies. The selected participants were mainly people who have actively participated in the project and whose productive outputs qualified them as ‘success stories’. These people have been involved in the project from the beginning and are still using the technique. The majority of these people are older than 50 years of age and do the work on their own without any support from family members.

2.2.1.5 Participant observation

Participant observation is a popular research technique in anthropology. It is one of the foundational methods of social and cultural anthropology (Bernard 1995). Participant observation is defined as a “fieldwork method in which the cultural anthropologist lives with the people under study and observes their everyday activities” (Ferraro 2001:385). As the name implies the researcher not only studies and observes everyday activities, but also takes part in these activities as a member of the community. Ferraro (2001:87) mentions that, “when fieldworkers participate, they become as immersed in the culture as the local people permit”. They participate in the day-to-day activities of the people, which include chores, eating of the food and attendance of ceremonies. Participant observation can be very challenging especially when studying a foreign group, because the researcher has to put aside some of her personal beliefs and principles in order to understand the ways of life of the people, regardless of how much they contradict their own beliefs. However, it “allows anthropologists to interpret what people do and say in the wider context of social interaction and cultural beliefs and values” (Schultz & Lavenda 1998:33). Pelto and Pelto (1984) mention that, learning the language of the people is important when conducting participant observation.

The four types of participation identified by Spradley (1980:59-61) are:

- a) passive (ethnographer is present at the scene, but does not participate or interact with other people to any great extent),

- b) moderate (ethnographer balances between being an insider and an outsider by participating and observing),
- c) active (ethnographer does what others are doing, not merely to gain acceptance, but to be able to learn the cultural rules for behaviour), and
- d) complete (the highest level of involvement for ethnographers comes when they study a situation in which they are ordinary participants).

Some form of participation or observation or both were employed in the study as a technique. First, the researcher as a member of the community of Thaba Nchu and having grown up at Paradys (a village north of Thaba Nchu) and Tweefontein (south of Thaba Nchu) understands the cultural norms and the language of the people. With regard to language, O'Reilly (2005:95) states,

even if you are not studying a group who speak a different language from you, in modern ethnography, if you want to learn about the way of life of a certain subculture or institution, you will need to learn certain ways and words that are expected and accepted.

For the study, it was important to start with moderate participation in order to understand the social dynamics of the households in the villages and their involvement in the Rainwater Harvesting project. As a Tswana person and resident of Thaba Nchu, I realised that to some degree I am also an outsider, especially when it comes to some cultural elements and experiences of rural life that I (as a person from a semi-urban setting) do not practise on a daily basis. Srinivas (quoted in Ellen 1984:130) mentions “the experience of another segment of one’s own society can create sociological awareness, or anthropological detachment; it is then that one becomes an ‘outsider’ in one’s own place of origin”. On the other hand, Aguilar (cited in Ellen 1981:132) states that, “the anthropologist as an ‘insider’ of the groups is able to make the participants more relaxed than an ‘outsider’”. Participants see the researcher as one of them and this aids with building trust relationships quickly. However, the downfall is that they expect you to know everything and sometimes may refuse to discuss some of their individual or personal experiences.

Dewalt and Dewalt (2002) remark that the problem with participant observation is that researchers have less control of the research situation, because they only react to what

unfolds before them. Furthermore, they state, “the method draws heavily on the behavioural skills and already established social skills wedded to a flexible approach to new social situations” (Dewalt & Dewalt 2002:17).

2.3 RESEARCH PROCESS

The research process began with orientation on the subject through a literature review and by establishing relationships with the gatekeepers to facilitate entry into the field (Schensul *et al.* 1999). Prior to fieldwork, a trip was prepared to introduce myself to the research sites (Potsane and Rietfontein) and the research participants, most of whom are members of the Rainwater Harvesting association known as *Matangwana*. The leaders of the *Matangwana* provided lists of all participating members, which were used to arrange appointments. Returning from the visit, a conceptual framework for guiding the fieldwork was developed.

As has already been mentioned, participants were selected based on their participation in the project. However, for comparison people who are not members of *Matangwana* were also interviewed. I followed the ethical standards of anthropological research by making the research process overt – meaning to be completely open about the research objectives, and about what will happen with the research material. All the responses were considered confidential and the identities of participants were protected. Participants who did not want to reveal their identities or those of the people they referred to were allowed to use pseudonyms. The majority of the participants, however, did not have a problem with revealing their identities and therefore asked for their full names to be written.

Problems encountered during fieldwork mostly related to people refusing to talk to me. At first, they refused, because they thought the researcher worked for the government. Over time, some mentioned that they were becoming frustrated with different people always coming to ask them questions when there were no direct changes in their lives. I learned the true meaning of the phrase ‘patience is a virtue’ and over time, many of the ‘frustrated people’ became trusted informants.

Death of informants was another major problem, because in the course of four years (2008–2012), four informants (two from each village) passed away. It was sad, because I had formed genuine relationships with them and they contributed valuable information to the research.

2.4 THE THABA NCHU CONTEXT AND HISTORY

2.4.1 Introduction and historical background

The town of Thaba Nchu is situated in the Free State Province, about 60 km east of Bloemfontein. It covers an area of about 127 562 hectares (ha), which includes the central district and about 42 villages that spread north and south (Botha *et al.* 2007:7). The rural area comprises about 70 364 ha of the total land. The town has an interesting history, being the only Tswana enclave in the heart of an area where the dominant groups are the Sotho and Afrikaans-speaking people (Murray 1992:5). The Barolong of Seleka, under the leadership of Chief Moroka II, arrived in the vicinity in 1833. Before reaching the district, they settled at Motlhana-wa-Pitse about 193 km from their former residence of Makwassie (formerly spelt as Maquassi), which they left because of ongoing attacks and harassment by the Matebele of Mzilikazi. Roberts (1966:49) mentions insufficiency of resources to accommodate the growing population as another reason for their migration from Makwassie. The journey of the Barolong was met with further harassment from the Batlokwa of Manthatisi and her son Sekonyela, as well as the Bataung of Moletsane. This prompted them to move further south until they reached the area west of the Caledon (Mohokare) River, in the territory of Moshoeshoe (Molema n.d.:16-17). The place was called Thaba Nchu (Black Mountain), a name given after its mountain.

During these early years, the population at Thaba Nchu was estimated to be about twelve to fifteen thousand people over an area of 3 008 km² (approximately 300 800 ha) (Watson 1980:357). The Seleka Barolong made up the core of the community, but were later joined by other branches of the Barolong (e.g. Tshidi) and Bakwena, as well as the Wesleyan missionaries, Reverend James Archbell and Reverend John Edwards (who helped with the move to Thaba Nchu and negotiations to acquire the land). Some remnants of the Digoja (Lihoya or Ghoya) also later came to seek asylum at Thaba Nchu and settled with the groups already in the region (Walton 1965). They subsisted on sorghum, maize, wheat, beans, pumpkin, melons, sugarcane and imported some of their grain from Basutoland, now known as Lesotho (Murray 1992:12). Thaba Nchu managed to maintain autonomy through most of the 1800s, particularly after the withdrawal of the Sovereignty and the British in 1854, as an independent African chiefdom, surrounded by a Boer Republic that was solely interested in

white political supremacy and exclusive white landownership (Murray 1992:12). Chief Moroka was described as a great leader, because he succeeded in keeping his people together and even formed an allegiance with leaders of other groups, including the Voortrekkers. Some of his allies included Hendrik Potgieter, Gerrit Maritz and Piet Retief.

On 8 April 1880, Chief Moroka died at the age of 85 years (Molema n.d).⁸ His son, Samuel Lehulere then claimed the chieftaincy, but the late Chief had publicly made it known on several occasions that he wanted his stepson, Tshipinare (son of his second wife Nkhabele and Tlala, son of Chief Tawana of the Tshidi branch of Barolong) to be his successor. President Brand of the Orange Free State was invited to assess the situation and both parties were asked to present their claims. Samuel based his argument on the fact that he was the child of Moroka and referred to Tshipinare as a ‘foreigner’, but Tshipinare mentioned that the late Chief had publicly made it known on several occasions that he wanted him to be his successor and that he was active in tribal assemblies. Brand accepted the claims made by Tshipinare and this aggravated Samuel Lehulere. He launched several attacks on Tshipinare over time. Most of these were not successful, but in 1884, he and some of his supporters managed to kill Tshipinare. After the death of Tshipinare, most of his loyal followers refused to acknowledge Samuel as their leader and appealed to President Brand to intervene. The political issues affected life at Thaba Nchu and this resulted in Thaba Nchu being annexed to the OFS. Samuel and his accomplices were ordered to stand trial for murder, but were later discharged, as the crime had taken place in an independent territory outside the OFS.⁹ Nonetheless, they were banished from the OFS, of which Thaba Nchu was now part of and moved to Basutoland. They were eventually evicted by the government of Basutoland and struggled to find a permanent settlement in the years that followed. Samuel died on 1 October 1932 and was buried at Ramokgwebana in the Bechuanaland Protectorate, where he had lived with his followers. Tshipinare’s son, Tawana, became the leader of the Barolong at Thaba Nchu.

⁸ The book by Molema, S.M. titled *Chief Moroka: His life, his times and his people*, is the primary source in this section.

⁹ The crime took place before Thaba Nchu was annexed by the OFS.

The records obtained from a census of 1884 show an animal population of 35 489 cattle, 154 338 sheep, 20 789 goats and 80 081 equines (Roberts 1966:51). The human population at this time was roughly 6 726 Barolong and approximately 504 Basotho, which was now less than twice the number it was in the early 1880s. Not much is said about poultry; maybe it was not an important economic asset like cattle and other livestock. Economic activities at Thaba Nchu at the time included trade of sheep's wool as well as employment at Kimberley, particularly at the diamond mines and the farms in the Orange Free State. Although the records do not state the month the census was done, the number indicates it could have possibly been after the political instability of 1884 that resulted in the death of Tshipinare and Thaba Nchu being annexed by the Orange Free State. With the annexation, Thaba Nchu lost the independence it had so long enjoyed and about two-thirds of its territory. The majority of the people also left Thaba Nchu.

Figures 2.1 and 2.2 show the old and current district of Thaba Nchu. The dark borderlines in Figure 2.1 shows the old district of Thaba Nchu during the 1880s and the dotted/dashed lines show Thaba Nchu during the 1980s, after the establishment of Botshabelo. The map was possibly done during the early 1980s, because it shows the village of Groothoek, which, along with Morokashoek, was demolished late in 1982 to make way for a game park (Maria Moroka) and hotel/casino (Thaba Nchu Sun, now known as Black Mountain Leisure and Conference Hotel). Figure 2.2 shows the district of Thaba Nchu as it is now, with particular focus on the villages.

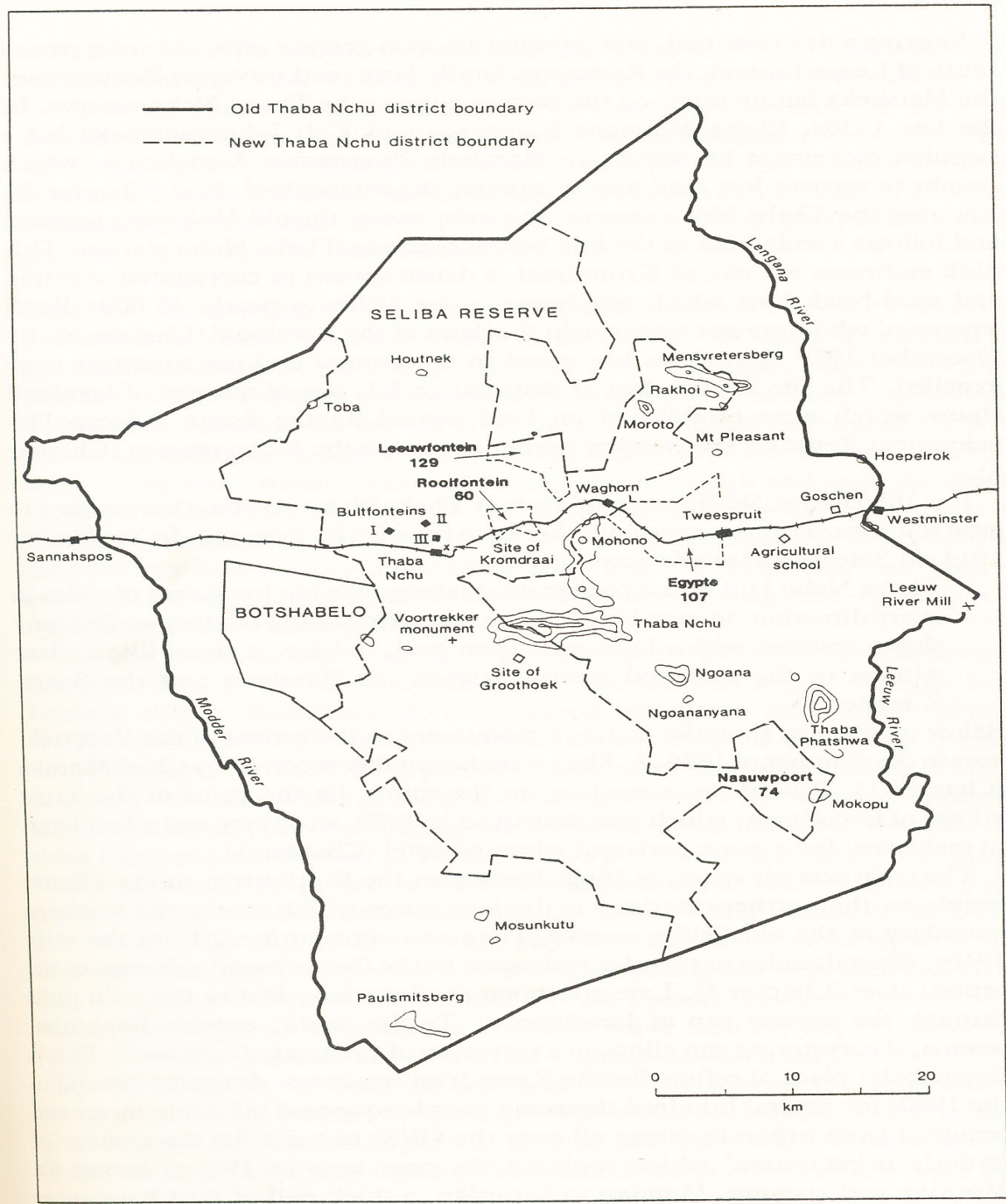


Figure 2.1 The old district of Thaba Nchu during the 1880s (Source: Murray 1992:3)

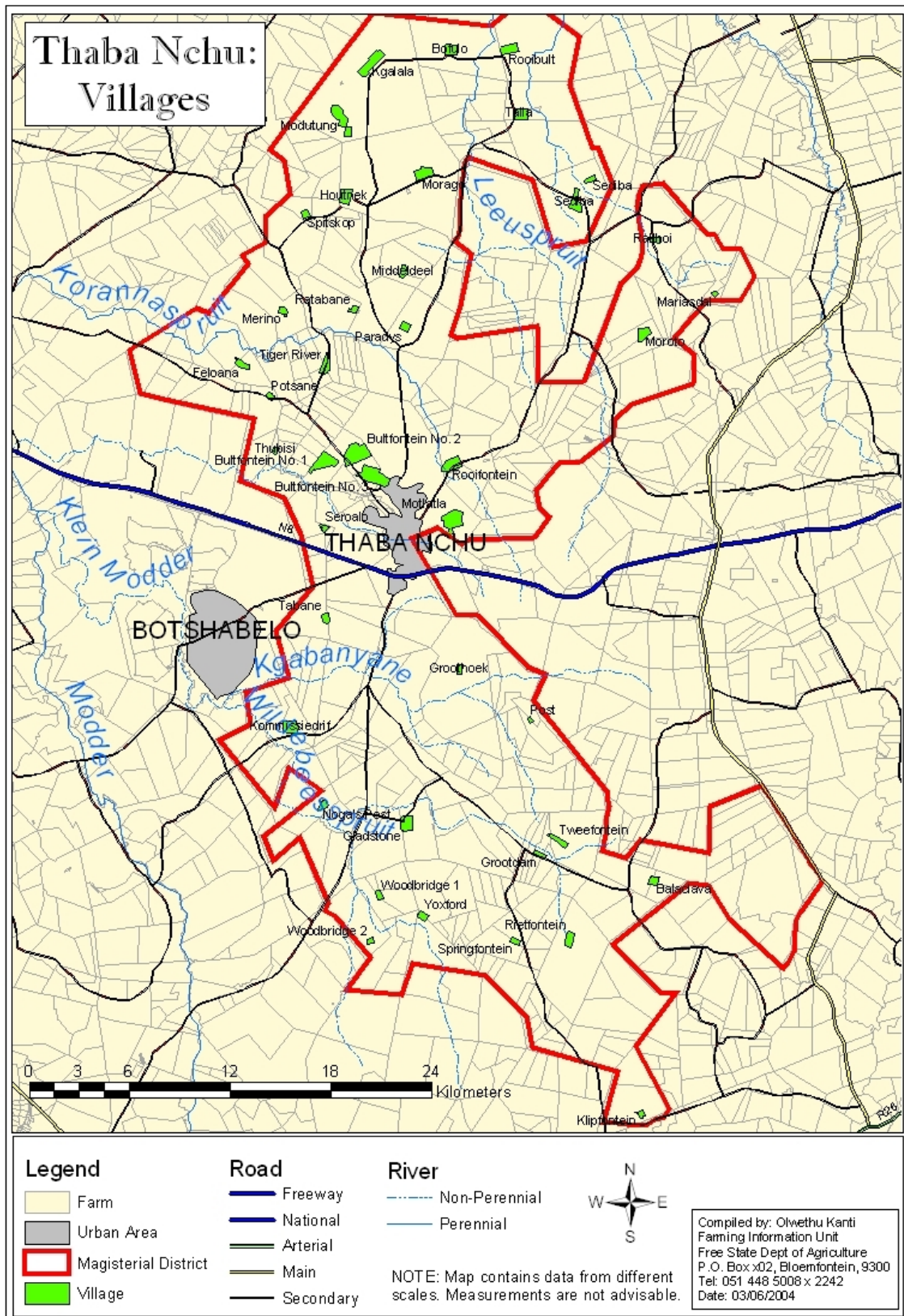


Figure 2.2 Recent map showing the villages of Thaba Nchu (Source: ARC-ISWC)

2.4.2 Geographical and political characteristics

Thaba Nchu is a semi-arid area with average rainfalls of about 500 mm per annum and soils high in clay content (Botha *et al.* 2001). Information provided by the ARC-ISCW shows that the rainfall at Thaba Nchu is at its heaviest during December, January and February. The driest months, which are also the coldest, are June, July and August. Summers in this town are relatively warm and the winters are cold. Winter temperatures can drop below 0 °C and summer temperatures can go above 36 °C. According to Roberts (1966:52), “the combination of erratic rainfall and cold winters has resulted in grassland rather than a woodland climate”. The grass species that dominate the vegetation are suitable for livestock production (Morosi, cited in Kundhlande *et al.* 2004). The region is also dominated by various shrubs and several trees such as the blue gum (eucalyptus) and acacia. Most of the blue gum trees were introduced to the region by the government of Bophuthatswana to be used as a source of fuel (firewood), particularly in the rural areas where they were used along with cow dung.

The topography of the area is flat with frequent hills and the major elevation in the region is the mountain with the same name, which stands at about 2 000 m above sea level.

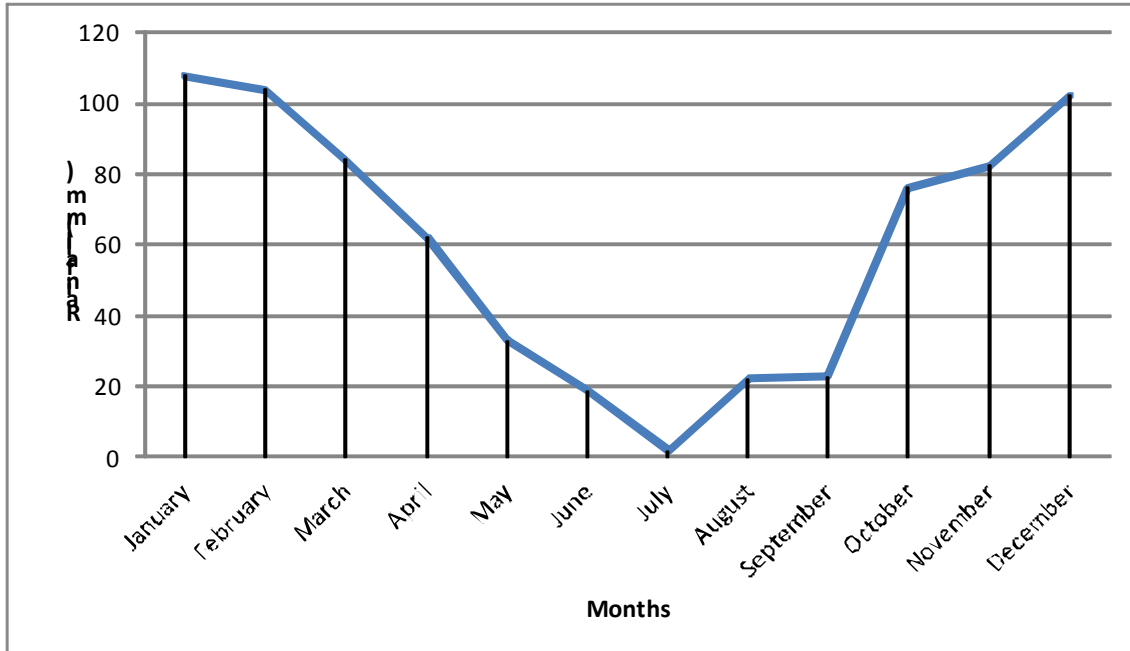


Figure 2.3 Long-term rainfall figures for Thaba Nchu (Original source ARC-ISCW, 2012)

In terms of politics, Thaba Nchu has a dual political system that recognises the parallel existence of traditional authority and the municipality. The traditional council, Barolong boo Seleka, under the leadership of the Moroka dynasty, consists of the chief, his advisors and 42 headmen (and headwomen) responsible for the tribal affairs of the 42 villages they represent. The responsibilities of the tribal authority include resolving land disputes and allocation of land. Land in the rural areas is communal and divided into three categories of use, namely residential, grazing and agricultural. Rural Thaba Nchu also falls within the boundaries of wards 38 and 41, which means each ward has its own councillor and committee representing the interests of the community. The two political systems do not work together, but both recognise democratic process of election as the councillor and headman are elected by the community they represent. The levels of power also differ and as mentioned in Article 81 of Act 117 of 1998 traditional leaders have little authority in the municipal system even though the Constitution of the country recognises the “institution, status and role of traditional leadership according to custom and customary law” (Act No. 22 of 2009).

2.4.3 Research sites

The study focuses on two villages in Thaba Nchu, Potsane (12 km north of the town of Thaba Nchu) and Rietfontein (27 km south). The village of Potsane covers a total area of 970 hectares, divided into 30 ha for residential, purposes, 110 ha for crop production and 830 ha for grazing. Rietfontein covers about 2 020 hectares, divided into 66 ha for residential use, 231 ha for crop production and 1 723 ha for grazing (Kundhlande *et al.* 2004). The human population in both villages is represented by about 150 households¹⁰ and an average of four people per household. Some households in the villages are headed by elderly people and most of these households are larger (i.e. grandparent living with some of their adult children and grandchildren) than the average. The elderly heads of most of the households are usually female (i.e. widowed grandmother). The rate of unemployment in both villages is high and as a result, some households depend on social grants for basic survival.

¹⁰ There are a number of vacant stands or yards in both villages, which may have been taken in account when recording the population. At Rietfontein, the number of vacant yards is about 55 and about 11 in Potsane.

Table 2. 1: Types of grants in South Africa and the amounts (2015)

Type of Grant	Amount
1. Old Age (pension)	R1 410
2. Old Age (over 75 yrs)	R1 430
2. Disability	R1 410
3. Foster Care	R860
4. Child Grant	R330
5. Care Dependency	R1 410
6. MK Veteran	R1 430

The table below shows the number of people in the two villages that were receiving grant in 2010 (30% in Potsane and 36% in Rietfontein). In some households, they receive a combined monthly income from these social grants, but the amount is often below R3000 per month.

Table 2. 2: Social grants received in the two villages (Source: Pay Points Thaba Nchu 2010)

Type of Grant	Potsane	Rietfontein
1. Old Age (pension)	36	31
2. Disability	15	8
3. Foster Care	2	6
4. Child Grant	2	1
5. Care Dependency	48	30
	Total (R)= 78 600	Total (R)=63 410

Although most of the people are not employed, some have acquired some form of education and skills training. The following categories were used to classify the different skills training obtained by villagers:

1. Professionals (e.g. teachers, nurses and those who have tertiary qualifications, i.e. degrees, diplomas)
2. Clerks and salesmen: Typists, cashier, receptionists, petrol attendants and deliverymen.
3. Transport sector: Bus, ambulance, taxi and train drivers.

4. Service delivery: Hairdresser, police, soldier, gardener, domestic workers, security and sewing.
5. Tradesman: Plumbers, bricklayers, mechanics, welders, construction workers.
6. Production sector: Factory workers, miners.

Tradesman came first with the majority of the people, particularly the men, from the households having received training in construction, plumbing, brick laying and one in electrical engineering. Service delivery came second, followed by the professional, transport and production sector. Other types of training received include home-based care, first aid, computer training, peer education and rainwater harvesting. In both villages, it was found that although the people have received various types of skills training, the majority are not working in those sectors, except those who had received training at the place of employment. This shows that some of the people are skilled.

To sustain their livelihoods, people in the villages also practise crop and livestock production, the crop production is mostly practised on the small plots in the yards instead of the allocated croplands. The techniques currently used to make the plots for the gardens include Infield Rainwater Harvesting (see picture 1 in Photo 2.1), which was introduced by the ARC-ISCW and the conventional method. Several households also utilise the hydropolis, which the villagers refer to as tunnels.



Photo 2.1 Examples of yard gardens at Potsane. Infield Rainwater Harvesting technique (right) and conventional garden (left).

One of the reasons why the croplands are not utilised is the absence of perimeter fences. The inability to utilise the bigger lands is a constraint as the produce from the yard garden is often only sufficient for household consumption and many cannot derive any income from it. However, some households were able to earn income from selling crops and others from selling livestock. The crops that most people plant are vegetables such as spinach, carrots, onions, cabbage, beetroot, tomatoes, pumpkin, potatoes, beans as well as maize. Some of the crops (e.g. tomatoes) are seasonal, but others (e.g. spinach) can be planted throughout the year. Wheat and sorghum are now largely bought from the retail shops. A common means of earning extra income at Potsane is through rearing poultry (chickens), then selling the eggs and meat. Figure 2.4 shows some of the sources of income for households that were sampled in 2008. The monthly income ranged from R800 to R3200 for most households. Majority of the amounts are usually derived from various social grants and not necessarily from salaries or selling.

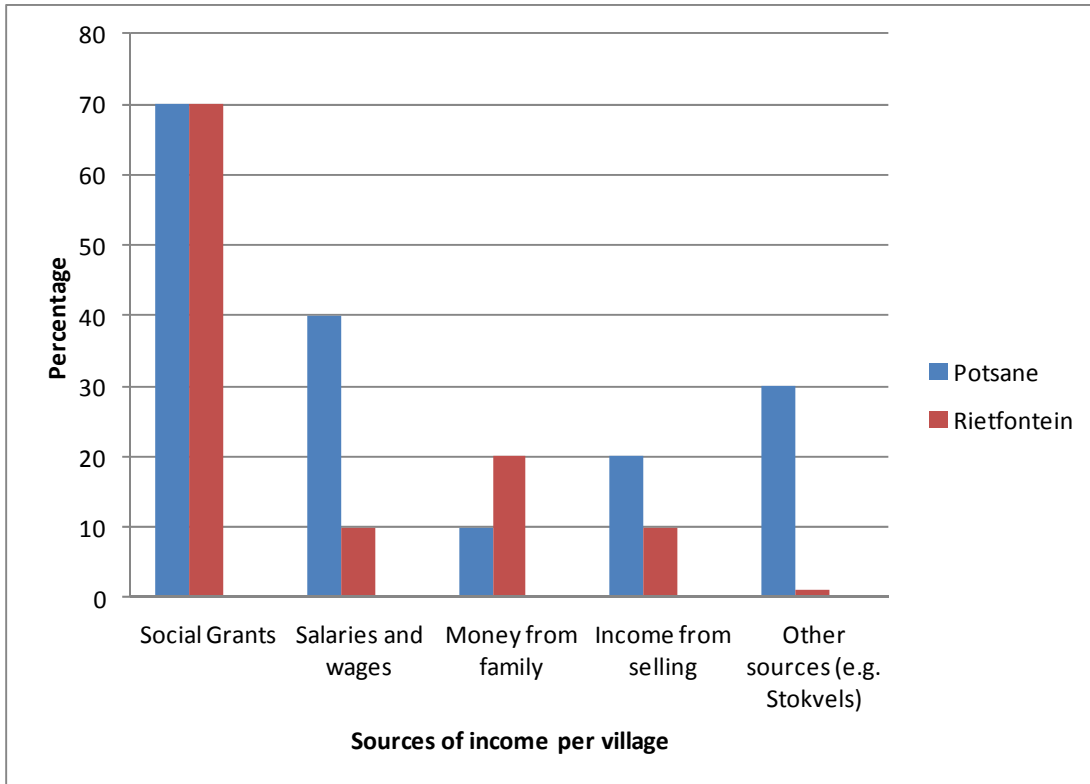


Figure 2.4 Sources of income for sampled households at Potsane and Rietfontein (2008)

Income versus expenditure for both villages shows that the daily or weekly expenses include food (e.g. bread, eggs and milk), narcotics (cigarettes and snuff), alcohol and transport. At Potsane, more people purchase products such as milk and red meat, which most of the people at Rietfontein get from their livestock (particularly milk). Meat, however, is a luxury as cattle are not always slaughtered for meat. Chicken is consumed more frequently than red meat, which is more expensive and often only enjoyed on certain occasions. In 2014, the average spent on milk per week was about R15. Bread is the most purchased product and other food items such as mealie meal, rice, samp and *dishebo* (relish) are bought in bulk on a monthly basis.

Other monthly expenses include payments for debts (e.g. furniture, clothing accounts and societies or social savings clubs) and purchasing pre-paid electricity, which is also purchased more frequently than only once a month. Fortunately, though, services such as water are still free and people in the villages are not charged for rates and taxes. However, an added expense during winter months is on heating. Services or infrastructure available in the

villages includes primary schools, services of a mobile clinic once a month, transport (bus services about three times a day) and spaza shops. Most of the high or secondary schools are outside of the villages and students have to travel by bus daily. The school nearest to Rietfontein is Kekeilame Secondary School, located on the outskirts of Grootdam village about 6,7 km northwest of Rietfontein. High school students at Potsane attend schools in the neighbouring Bultfontein 1 and 2, the nearest being Strydom Secondary School (about 6,9 km southwest of Potsane) in Bultfontein 1 (also known as Zone 1). The availability of transport makes it easy for scholars to attend school further from their villages. At Potsane, some school children travel by arranged transport to school, while the majority travel by bus (Interstate bus lines), which makes about three or four trips to and from the villages every day. The buses take people from the villages to Thaba Nchu and Botshabelo even as far as Bloemfontein. The schools in the rural areas are mostly categorised as “no fee schools”, because of the economic level of the community around the school. Therefore, children are able to get an education and it does not cost their parents anything.

Besides the mobile clinic that comes once a month, people from Rietfontein go to the clinic at Tweefontein, which is about 7,9 km northwest of Rietfontein. Several churches are found within the villages, but some people attend churches outside their villages. At Potsane, the majority attend apostolic churches situated in the village and at Rietfontein many people attend the Methodist church, which is also in the village. Apostolic and Methodist churches topped the list, followed by Anglican, AME (African Methodist Episcopal Church) and Presbyterian. Neither of the villages have police stations, but disputes are attended to by the traditional council headed by a headman or headwoman and their advisors. Criminal offences are often reported to the council and they contact the police. Traditional authority, under the leadership of *kgosi* (chief) Moroka, is responsible for the allocation of land and land disputes in the rural areas.

Water at both villages is provided by Bloemwater, but Potsane receives the bulk water supply. Rietfontein depends on groundwater from boreholes powered by Eskom. About 50% of households at Potsane have taps in their yards, the others either get water from the yards of their neighbours or the communal taps. Rietfontein residents still have communal taps outside the yards. The water situation at both villages is problematic as the people experience shortages from time to time and the rainfall is erratic. Agriculture in the region is mostly rain-

fed, therefore, they have to wait for the rainy seasons before planting crops. However, people with taps in their yards are able to utilise the water for their crops, but they prefer rainwater. While visiting Rietfontein in November 2011, we saw a group of men and women working in a garden and watering the plants with water from the tap. They told us they were members of the *Itireleng* (do it for yourselves) project.¹¹

The early history of Potsane and Rietfontein shows both villages were part of 95 farms granted to the Barolong during the Gregorowski land dispositions of 1885 (Murray 1992:38).¹² During this time, 15 farms were granted to white persons, three to the mission society and 39 were reserved for the OFS (Orange Free State) government. The grantee of Rietfontein, Dakpoort and Mooiplaats was Elizabeth Nkhabele, daughter of Tshipinare and mother of prominent figures in Thaba Nchu such as W Z Fenyang, Israel Tlale and Robert Frederick Setlogelo. By the early 1890s, about 90% of the farms owned by individual Barolong were lost to white owners and in 1913, only 54 of the farms still belonged to Barolong, including Potsane and Rietfontein. With the passing of the Natives Land Act in 1913, many Africans were evicted from farms owned by white people; the Act also prohibited sharecropping on white owned farms (Murray 1992; Keegan, cited in De Wet 1994). This displacement of Africans from white owned rural areas forced more and more people to seek refuge at the reserves that were established at Thaba Nchu and Sediba, which resulted in overcrowding at the reserves. Various other challenges also emerged due to overcrowding such as vegetation degradation and soil erosion (caused by overstocking). The strict controls also included the culling of animals and many of the people were left vulnerable without land and animals, the two very important assets for their livelihoods.

Not much is said about Potsane in Murray (1992), but about Rietfontein, he mentions that the entire 6000 morgen of Rietfontein 119 were bonded for £2 000 in 1924. In 1929, some portion of Rietfontein 119 was inherited by Moutloatsi and Bathobatho, the sons of Israel Tlale. This property was then mortgaged by Israel Tlale himself in 1935 and in 1940, it was bonded by W Z Fenyang. During the early 1930s, about 1000 morgen of Rapulana 776 (a

¹¹ The project was initiated in various villages and members plant crops that are mostly sold to schools for the feeding scheme programmes.

¹² Murray's (1992) book titled *Black Mountain* was the primary source regarding information on this section.

subdivision of Rietfontein 119) and 2955 morgen of Rietfontein 119 were under the name of Fenyang. Under the Trust and Land Act of 1936, Potsane and Rietfontein became part of the Released Areas that were made available for African occupation. A total of 2 000 morgen of Rietfontein was sold to the Trust for £7 per morgen. Fenyang also sold about 300 morgen of Rietfontein to Reverend Zachariah Nyokong of Bothaville. Smaller portions were sold to Reverend Jonas Litheko and his brother Hosea Litheko from Kroonstad. The remaining portion of Rietfontein was leased to J.M Lombard and 500 morgen of Rapulana (part of Rietfontein 119) was sold to Dr Alfred Xuma (President-General of the ANC) in 1946 (Murray 1992).

Rietfontein was officially established as a Trust village in 1941, following the establishment of Gladstone (also in the south of Thaba Nchu). In the northern region, Tiger River and Moroto were the earliest established Trust villages. According to Murray (1992:167), the two villages accommodated "a number of Xhosa families and other 'foreign' natives who had, it emerged, negotiated residence rights with white landowners prior to the Trust purchase of their farms, in order specifically to be taken over with the farms when the Trust assumed responsibility for them". According to our participants, many of the people from Tiger River later relocated to Potsane, named after the farm of Clement Seape. Most of the villages that developed because of the 'betterment' and rehabilitation schemes of 1940s and 1950s are affectionately known as *sekema* or *sekemeng* (word referring to scheme).¹³ "These schemes were intended to improve farming practices and to stem the tide of exhaustion and erosion that had engulfed the land" (Murray 1992:156). However, the strict controls over the land were challenging.

With the establishment of the bantustans or homelands by the apartheid government, Thaba Nchu became part of Bophuthatswana (meaning "gathering of the Tswana people"), one of the ten homelands. Bophuthatswana was a geographically fragmented state consisting of seven units that spread across three of the four provinces of the old South Africa (Cowley & Lemon 1986). Thaba Nchu in the Free State was the farthest from the other units. The president of Bophuthatswana was Dr Lucas Manyane Mangope. Setswana along with English

¹³ The irrigation schemes at Thaba Nchu were established at Feloane (near Potsane), Woodbridge 2 and Sediba.

and Afrikaans were the official languages of Bophuthatswana. Majority of the population in Bophuthatswana lived in rural areas where they were still under the leadership of traditional authorities. Agriculture and animal husbandry were important to the economy of the homeland and were mainly funded by the Agricultural Bank (Agribank) and Agricultural Development Corporation (Agricor). The bank initially provided funding (in the form of loans) to commercially viable agricultural undertakings, while some farms and co-operatives were funded by Agricor (Richards 1987). The focus with many of the projects was to enable the homeland to become self-sufficient.

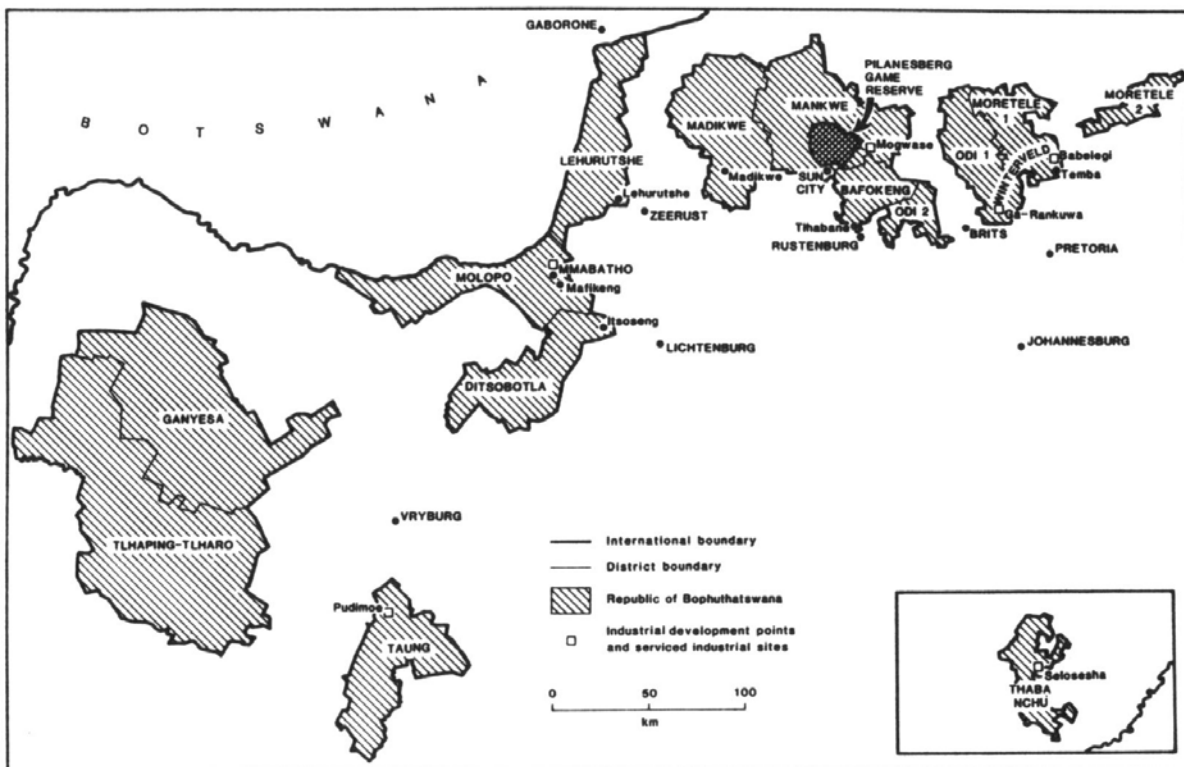


Figure 2.5 The size of Bophuthatswana with Thaba Nchu in the insert (Cowley & Lemon 1986)

Today, the population of Thaba Nchu is largely made up of the Tswana and Sotho groups. The Census results of 2011 showed that about 46% of the population speak Sesotho and only 40% speak Tswana. However, most of the schools at Thaba Nchu still teach in Tswana as well as English, but the majority of the scholars attend schools outside of Thaba Nchu (e.g. Tweespruit, Excelsior, Wepener, Dewetsdorp and Bloemfontein), where the second or third language is Sesotho.

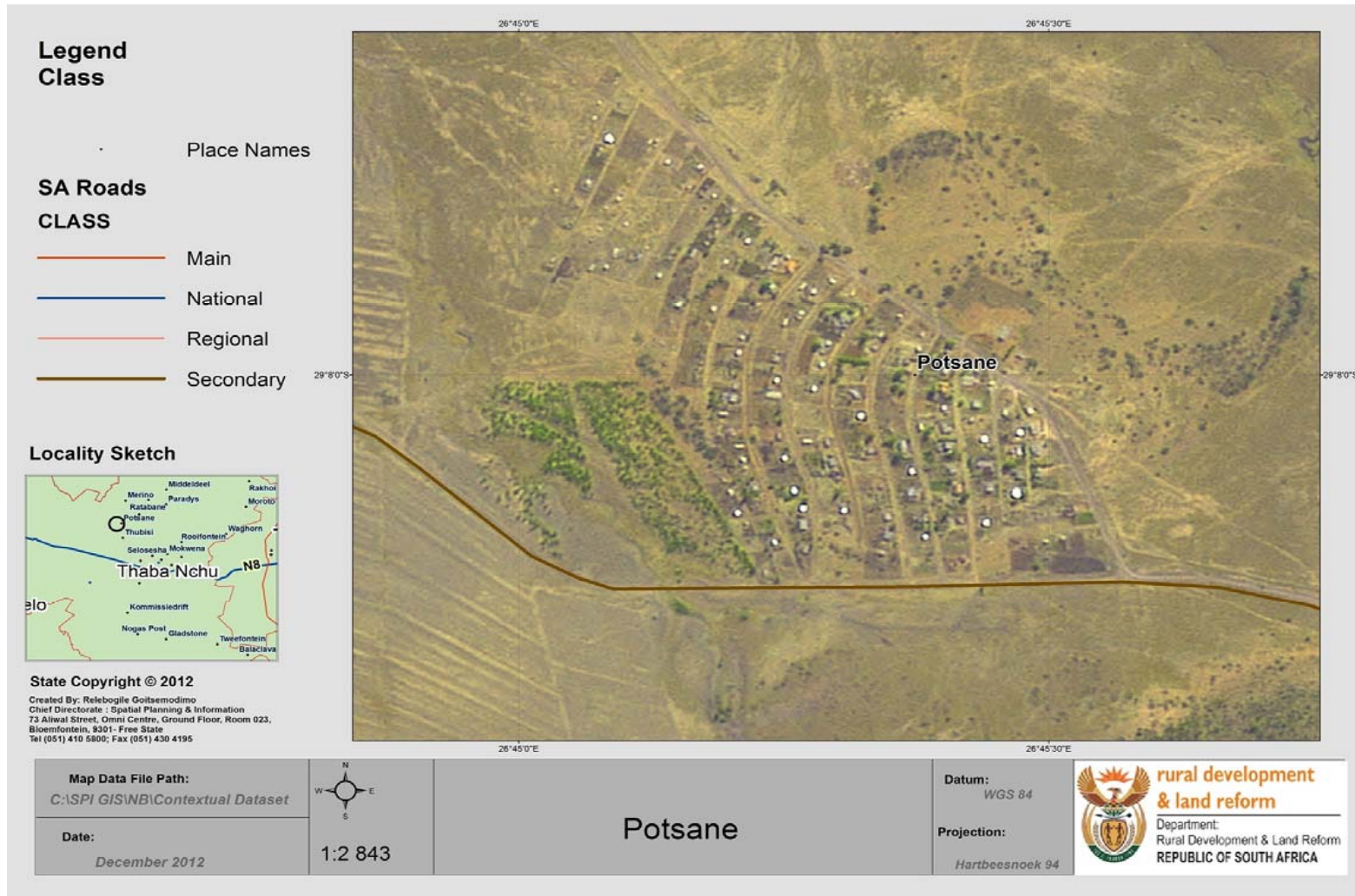


Figure 2.6 Aerial map of Potsane

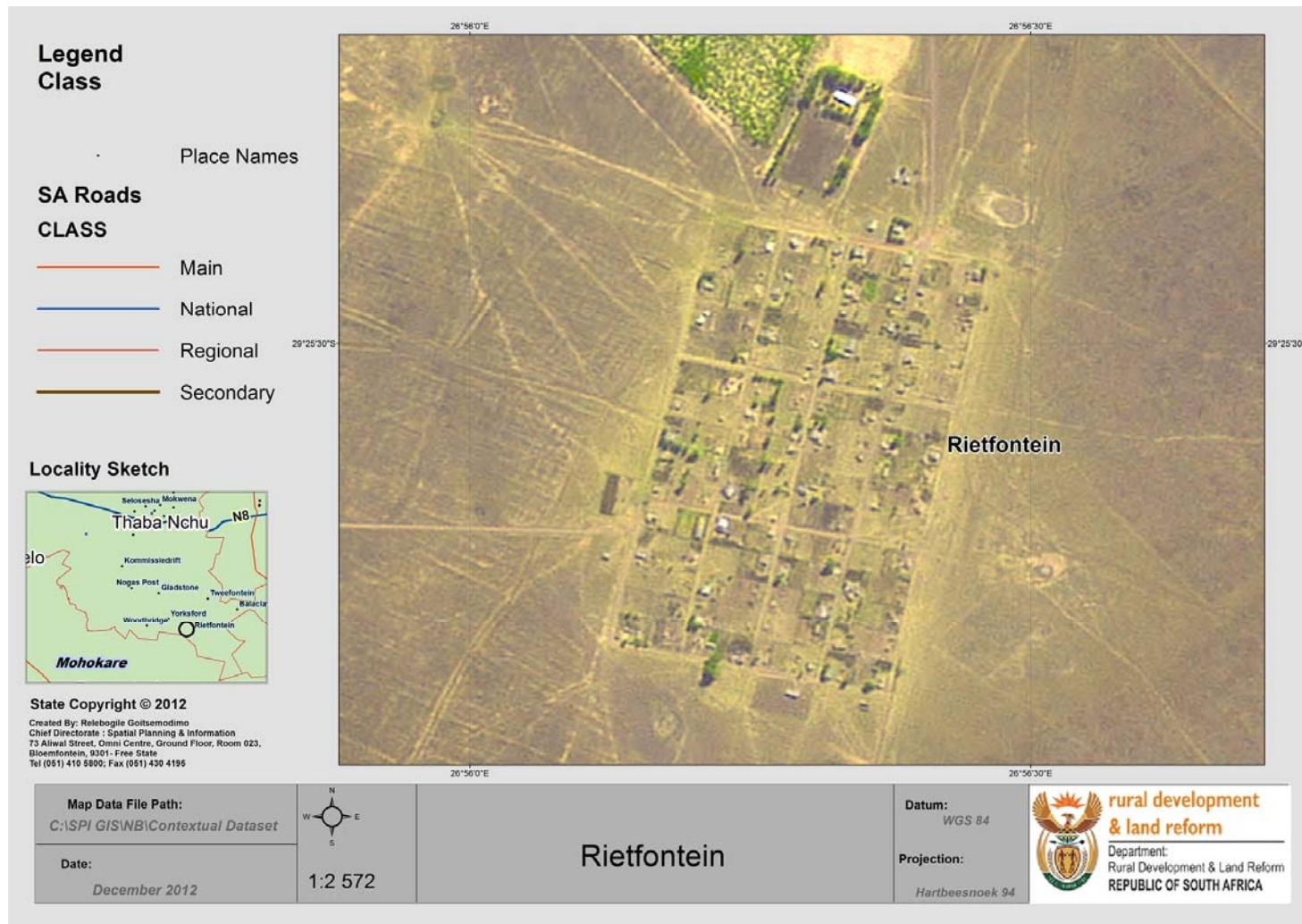


Figure 2.7 Aerial map of Rietfontein

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The period of the late twentieth century experienced the birth of several developmental approaches that evolved out of the growing concern over the increasing poverty and inequality, particularly in rural areas of developing countries (United Nations 1999). The approaches form part of a long period of evolving thought in development paradigms that shifted focus from only being on accelerated economic growth towards human development and well-being (Moller 1985). This also included change from a top-down research mentality towards more bottom-up approaches, which involve participation of the people in policy making as well as the broader understanding of the nature of poverty as a multifaceted problem (Brock & McGee 2002).

Development, particularly sustainable development, began to be understood through the integration of the social, economic and environmental dimensions (Soussan 2003; Drimie & Mini 2003). This means, for example, that any development aiming at improving the economic situation should do so without compromising the social and environmental, and/or vice versa. It is these multifaceted ideas of sustainability in development that have eventually paved the way for approaches such as the sustainable livelihoods (SL), the theoretical guide of this study. Sustainable livelihoods were introduced at the Brundtland Commission in the late 1980s as “an approach to enhance productivity, ownership and accessibility to resources and income earning activities, ensuring adequate stocks and flows of food and cash to meet basic needs” (Daskon 2010:1085). It looks at people’s livelihoods (e.g. assets, capabilities and activities) and the factors that affect them. SL approaches mostly focus on rural livelihoods and as such apart from the sustainable livelihoods framework, another framework known as sustainable rural livelihoods (SRL) framework was developed that specifically looks at rural livelihoods including the livelihood strategies in these areas. Both frameworks, however, also give attention to urban areas. The assets identified within sustainable livelihoods are human, financial, natural, social and physical. Households need a combination of these in order to secure and maintain their livelihoods.

The chapter looks into the theory of sustainable livelihoods beginning with the evolution of the approach followed by the principles, frameworks as well as strengths and weaknesses. The aim of the chapter is to discuss the sustainable livelihoods framework as a theoretical foundation for the analysis of household strategies to improve food security and conservation of the natural resource base. The research, therefore, gives attention to two of the five livelihoods assets, namely natural and social, but their relationship with the other assets is also evident. Figure 3.1 shows the conceptual framework followed in the study. It gives attention to the relationship between the livelihood strategies and the natural resource base, but also recognises that the sustainability of livelihood strategies relies on access and use of other assets such as social capital as evident in the study.

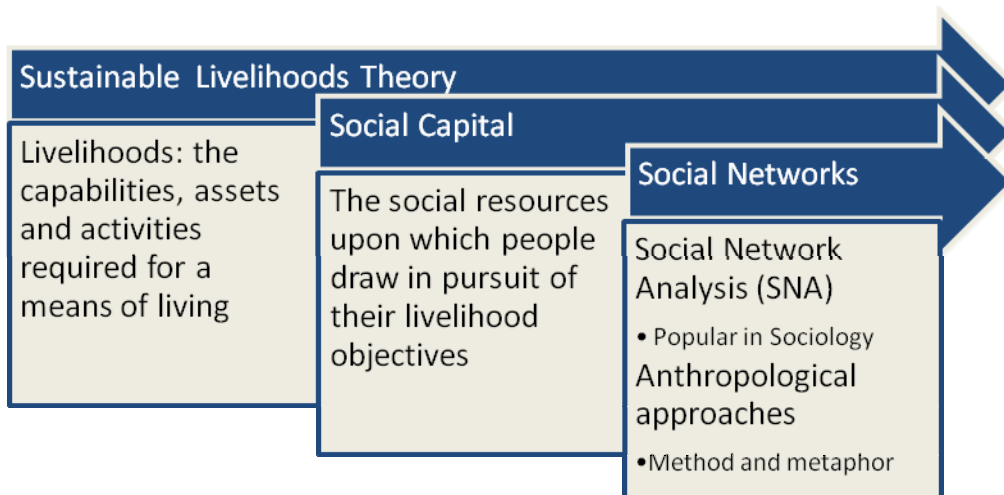


Figure 3.1. Diagram illustrating broad theoretical framework of empirical research

3.2 OVERVIEW OF SUSTAINABLE LIVELIHOODS

3.2.1 Evolution of sustainable livelihoods

The Sustainable Livelihoods approach (SL or SLA) was developed in the mid-1980s by a group working with the Institute of Development Studies (IDS) and the International Institute for Sustainable Development (IISD), which included Robert Chambers and Gordon Conway (Buechler, in Scott *et al.* 2004). It builds onto approaches such as the Integrated Rural Development (IRD), participatory development, basic needs approaches and others that focused on human development more than solely on economic growth. The approach shifts

focus from outputs to people, more especially towards human well-being and sustainability (SL Guidance Sheets 2000; Solesbury 2003). It forms a link between the socio-economic and ecological aspects. According to Appendini (cited in Daskon & Binns 2009:498) “the central objective of the livelihoods approach is to build effective methods to support people and communities in ways that are more meaningful in their daily lives and needs”.

Priority is given to the perspectives of the poor in order to enhance progress in poverty alleviation (Ashley & Carney 1999).

Sustainable livelihoods approach gained widespread acceptance and popularity through the 1992 IDS paper that was presented by Chambers and Conway at the UN (United Nations) Conference on Environment and Development (Solesbury 2003). It was in this paper that the definition, which was referred to as Sustainable Rural Livelihoods, was first introduced. The definition states,

A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. A livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Krantz 2001:1; Solesbury 2003:5).

This definition, which links the concepts of equity, capacity and sustainability, was modified by Ian Scoones of IDS and the modified version was adopted by DFID (Solesbury 2003). The definition states,

A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Murray 2000:116; Solesbury 2003:1).

Sustainability according to this definition is achieved if livelihoods are able to “recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future”. Sustainability is also understood through the integration of the economic, social and environmental dimensions. This means that the outcomes of any development should not

compromise the social, economic and environmental aspects. Krantz (2001) points out the DFID definition applies mostly to household level.

The SL approach made several appearances in various development and research projects in the early 1990s. However, its official adoption, as a core principle strategy for pro-poor policy-making in the DFID, came later in the mid-1990s (Solesbury 2003). From this period onwards, the sustainable livelihoods approach was adopted in many development projects, particularly those focusing on rural areas. Various organizations such as Economic and Social Committee on Research (ESCOR) and United Nations (UN) have also included sustainable livelihood approaches in their development programmes aimed at poverty alleviation.

3.2.2 Principles of sustainable livelihoods

The most central principle of the DFID, which is encapsulated nicely in the sustainable livelihoods approach, is that activities aimed at poverty alleviation should be designed in a way that will maximise livelihood benefits for the poor and help them achieve longer lasting solutions (Ashley & Carney 1999). It is through this idea and those of the previous approaches that the principles of sustainable livelihoods are based. The six fundamental principles of the approach are that it is (a) people-centred, (b) holistic, (c) dynamic, (d) builds on strengths, (e) links the macro and micro, and (f) places emphasis on sustainability (Murray 2002; Krantz 2003). Sustainable livelihoods recognise the need of putting people at the centre of development and instead of just focusing on the needs, the approach emphasises on building people's strengths (Murray 2002; SL Guidance Sheet 2000). That is by giving people an upper hand in identifying their priorities and how they will go about to satisfy/achieve them. This aspect of sustainable livelihoods recognises the great diversity in the goals to which people aspire and the livelihood strategies they adopt to achieve them (Havnevik 2006).

Previous definitions of poverty limited the understanding of what poverty is, who the poor are as well as what their needs are. Through the SL approach, "poverty analysis has highlighted the importance of assets, including social capital, in determining well-being" (Ashley & Carney 1999:4). From this understanding, as noted in Whitehead (2002), poverty is not only defined by insufficient income, but diverse assets (social, human, physical, financial and natural). This means livelihoods of people are not just dependent on one asset,

but a whole array of assets. The sustainable livelihoods framework shows the relationship between the various assets and institutions that influence them.

SLA acknowledges that livelihoods are multi-sectoral and embedded within specific institutional contexts (Toner 2003). For this reason, the approach advocates a link between different levels of analysis namely the macro-level (national governments, NGOs and donor agencies), meso-level (local governments, tribal authorities) and micro-level (household and communities) (Murray 2000; 2001). This multi-level approach is an important aspect of SL goals on poverty alleviation. Although a link is made between the various levels, much of the research takes place at the micro-level, with the key unit being the household. Research conducted at this level, is believed to provide insight into the larger issues of poverty. Households are seen as structures in which vast economic activities take place, with the key players being household members. Thus, individual members are regarded as economic agents who actively try to minimise risk and maximise income by utilising social, human, financial, physical and natural capital (Havnevik 2006). SL approach gives much emphasis to the role that each member plays in the creation of household livelihood (Buechler, in Scott *et al.* 2004:33). This analysis of the micro-level enables the development and analysis of policies at the macro level. “In principle, the holistic nature of SL analysis lends itself to identification of priority for policy intervention or improvement” (Farrington *et al.* 1999:n.p.).

According to Murray (2001; 2002), livelihood research favours the use of ethnographic research methodologies such as life histories, structured interviews, in-depth interviews, participant observation, focus group and informal discussions. The methods enable the involvement of the poor in research, which is one of the priorities of the SL approach. They also make it possible for researchers to record changes that occur in the livelihoods of poor people. Murray identified three approaches (namely circumspective, retrospective and prospective) that are important for research on livelihoods. The circumspective approach looks at the present¹⁴ (i.e. what households are doing now in order to survive). Retrospective or historical approach is often used to analyse change over time, especially with regard to the relations between the different levels of analysis (micro-, meso- and macro-level). According

¹⁴ Circumspective usually takes a period of six months to one year.

to Cephas and Bernard (2012:363), the retrospective approach entails looking back at the experiences of the household's life trajectories to see long-term changes in livelihoods.

The prospective approach incorporates elements of the circumspective and retrospective. It looks at historical processes that have influenced current policy and alternative ways of improving such problems in the future. It is regularly seen as a blueprint for policymaking and as a result, it is found mostly at macro-level (government officials, NGOs and donor agencies). "The objectives of the prospective approach are better co-ordination of planning and implementation across sectoral boundaries; and building alternative conceptual frameworks for facilitating opportunities for improving livelihoods" (Murray 2001:4). Therefore, circumspective looks at the present, retrospective at the past and prospective the future.

3.2.3 Sustainable livelihoods frameworks

In general, the SL framework looks at the overall context of the factors that affect people's livelihoods and the range of assets (financial, social, physical, natural and human) they pursue in order to achieve desired outcomes (Scoones 1998; Farrington *et al.* 1999). The framework is made of five components that are assets; policies, institutions and processes; strategies; outcomes and vulnerability context, which all influence each other. Human assets or capitals, within the framework, are defined as skills, knowledge, ability to do labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives (DFID, cited in Kollmair & Gamper 2002:6).

Social assets are "social resources upon which people draw in pursuit of their livelihood objectives" such as networks, membership to formalized groups and connectedness (SL Guidance Sheets 2000: Section 2.3.2). Social and human assets are the least tangible of the five assets, while physical, financial and natural capital are tangible (Toner & Franks 2006; Herreros 2004). Physical assets, for example, refer to infrastructure (e.g. roads, houses and railways), while natural assets refer to natural resources (e.g. water, air, land, etc.) and financial assets are mostly the monetary/economic assets such as incomes or even grants.

A household needs a combination of these resources in order to survive, but access may be hampered by the 'vulnerability context' and 'transforming structures and processes' (i.e.

policies, institutions and processes) (Murray 2001). The “vulnerability context” represents the external environment in which people exist and it consists of trends (demographic, resource, economic and governance trends), shocks (health, natural disasters, economic, conflict and crop/livestock) and seasonality (prices, production, employment and health) (Kollmair & Gamper 2002; SL Guidance Sheets 2000). However, trends and seasonality are not always negative, but poor people are often unable to benefit from them as they lack access to resources and institutions that work in their favour (SL Guidance Sheets 2000).

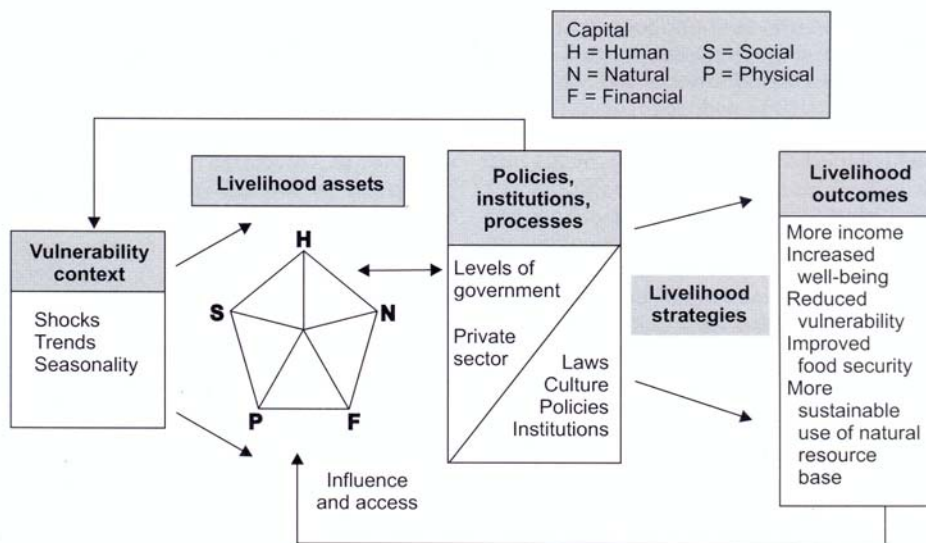


Figure 3.2: DFID’s Sustainable Livelihoods Framework (Buechler, in Scott *et al.* 2004).

Fig 3.2 shows the dynamic relationship between the different components of the livelihoods framework and the way they influence each other. Although the framework begins with the ‘vulnerability context’, it does not suggest that all livelihoods start with the vulnerability context through which livelihood outcomes are yielded (SL Guidance Sheet 2000; Farrington *et al.* 1999). The livelihood outcomes are also not necessarily the end of all livelihoods as they can feed back into the future asset base (Havnevik 2006). Adato and Meinzen-Dick (2002:5) mention that the framework “is primarily a conceptual framework for analysing causes of poverty, people’s access to resources and their diverse livelihood activities, and relationship between various factors at micro, intermediate and macro levels”. Toner (2003) adds that understanding livelihood strategies and vulnerabilities of poor people is the first step towards any form of intervention.

The Sustainable Rural Livelihoods (SRL), which was developed by Ian Scoones of IDS, is very similar to the SL framework of DFID as it also has five components (contexts, conditions and trends; livelihood resources; institutional processes and organizational structures; livelihood strategies and sustainable livelihood outcomes) that are related to each, but the relationships are presented in a linear way. Scoones (1998:3) mentions, “the concept of ‘sustainable rural livelihoods’ is increasingly central to the debate about rural development, poverty reduction and environmental management”. It gives attention to the relationship between rural livelihood strategies and natural resources, but recognises that the sustainability of livelihood strategies is dependent on access, use and development of various types of assets (Woodhouse *et al.* 2000:5). The livelihood strategies (agricultural intensification/extensification, livelihood diversification and migration) identified by Scoones (1998) for a rural context are highlighted within the framework.

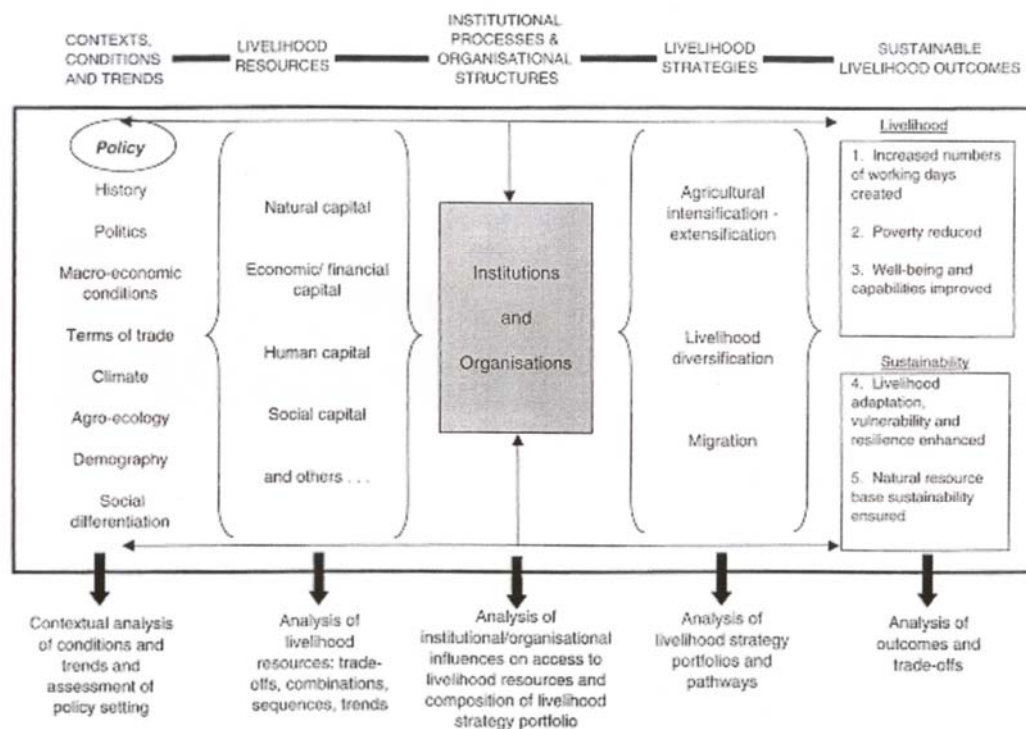


Figure 3.3: Sustainable rural livelihoods: A framework for analysis (Scoones 1998:4).

In the analysis of livelihoods, Scoones (1998:3) mentions several questions of importance, for example, given a particular context such as that of Thaba Nchu (semi-arid area with a high

population of rural inhabitants who are unemployed, have low levels of education and are mostly dependent on social grants),

what combination of livelihood resources (human, social, physical, financial and natural) result in the ability to follow what combination of livelihood strategies (agricultural intensification/extensification, livelihood diversification and migration) with what outcomes?

The livelihood strategies are not exclusive, but are often combined (Woodhouse *et al.* 2000). For example, in households where resources are scarce, diversification and migration are common. Nonetheless, migration can also be seen as a part of diversification as shown by Murray (2000). Bryceson (2002) acknowledges the expansion of non-agricultural activities, but affirms that agricultural activities are not necessarily substituted by the other activities instead they are retained and other activities are incorporated. Over the years, this trend towards diversification of livelihood strategies has received much attention with focus also placed on the factors that affect the livelihood strategies (Murray 2000; Frank 1999; Bryceson 1999 and 2002; Ellis-Jones & Mason 1999; Scoones 1998; Ellis 1999; Whitehead 2002). The research shows that livelihood diversification is mostly evident in developing or third world countries (Bryceson 2002). Murray's study on the changing livelihoods in the Free State province, South Africa, during the 1990s is one example as he shows how some households changed their livelihood strategies from predominantly agricultural activities towards incorporation of non-agricultural activities.

“Climate variability¹⁵ is one of the pervasive stresses that individuals and households in rural areas have to cope with” (Ziervogel & Calder 2003:403). It is a long-term challenge that has a direct impact on people's well-being. The most prevalent example of climate variability is changes in rainfall patterns, which affects water availability and often leads to water shortages. Unavailability of water, resulting from climatic conditions, is a major challenge for rural inhabitants across the world, because most of their livelihoods are dependent on the resource. They need water for domestic consumptions, food production, livestock rearing and

¹⁵ The concept *climate variability* refers to changes in climatic patterns over long periods. This includes changes in rainfall patterns, which lead to water shortages.

many other things. Thus, shortage of the resource affects much of their day-to-day activities and increases vulnerability of the household.

3.2.4 Strengths and weaknesses of the approach

Like any other approach, Sustainable livelihoods have their strengths and weaknesses. The weaknesses, according to Ashley and Carney (1999), play an important role in identifying the difficulties and gaps within the SL approach. In other words, they offer insight into areas where the approach needs to be enhanced. They do not necessarily mean that the approach is weak, but that it can be improved.

Table 3.1 Strengths and weaknesses of SL identified by Murray (2001:6-7).

STRENGTHS	WEAKNESSES
It seeks to understand changing combinations of modes of livelihoods in a dynamic and historical context.	Elements of vulnerability context are surely much more important than would appear.
It explicitly advocates a creative tension between different levels of analysis.	The language of ‘multiplier effects’ predominates, as does the presumption that it is possible to expand people’s ‘assets pentagons’ in a generalized way. Inequalities of power and conflicts of interest are also not acknowledged sufficiently.
It acknowledges the need to transcend the boundaries between discrete sectors (urban/ rural, industrial/ agricultural, formal/ informal, etc.).	The notion of participation presupposes every investment on the community on part of donor agencies and thereby enhancing the tendency of livelihoods of one group undermining that of another.
It implicitly recognizes the necessity to investigate the relationships between different activities that constitute household livelihoods, which, in turn, require attention both to intra-household and to extra-household social relations.	The qualifier “Sustainable” begs many questions, which are not resolved even by positive ‘livelihood outcomes’ of the kind indicated in the framework.

The key strengths of the approach are that it strives to be holistic, people-centred and recognises that situations are not static (according to Moriarty & Butterworth 2003:32).

However, Ashley and Carney (1999:2), like Murray, argue that the “use of SL approaches does not necessarily ensure that ‘sustainability’ is addressed”. They mention that the SL approach gives little attention to the cohesion of environmental, economic and social aspects of sustainability. The issue of ‘environmental sustainability’, which is often stressed by donor agencies, is seldom addressed by sustainable livelihoods. This gap becomes evident in developments where the environment is the entry point for donor intervention (Ashley & Carney 1999:34). Carney (2002) makes a request for the reactivation of debates on how environmental sustainability can be married with poverty reduction. This is an issue in rural areas where scarcity of resources, particularly natural resources, forces people to overuse the little that they have for survival, often resulting in environmental degradation.

Another major concern regarding SL is its failure to address the issues of politics and power (Norton & Foster 2001). Murray (cited in Whitehead 2002:577) mentions that

sustainable livelihood framework is weak on the treatment of relations of power and inequality and, by implication, on the institutions that allow access to, or exclude, people, households or communities from resources.

Ashley and Carney (1999) agree that matters of power relations may be underemphasised by the SL approach. However, in South Africa it has highlighted the need for institutional assessment, because many development initiatives fail because of conflicts and imbalances in institutional structures and assessing these structures will offer insight into the causes. The attention given to the role of social institutions or resources as part of livelihood strategies is another strength of the sustainable livelihoods approach.

3.3 SOCIAL CAPITAL

The theoretical foundations of social capital are mainly attributed to Bourdieu, Coleman and Putnam (Tzanakis 2012; Portes 1988). Their work, which has similarities and differences, has influenced the current understanding of social capital. Bourdieu and Coleman, for example, both describe social capital as a range of resources made available to individuals due to their participation in social networks (Herreros 2004:6). They both give attention to the function of social capital similar to Lin (1999:30) who describes it as “investment in social relations with expected returns”. The assumption is that people (particularly individuals) become members

of groups with the expectation of gaining benefits and that people with better connections are in better position to gain more returns. According to Woolcock and Narayan (2000:225), “it’s not what you know, it’s who you know”.

The creation of the term ‘social capital’ is an attempt to use the analogy of capital to understand the role of social institutions and processes in the economy, much as environmental economists have used the term ‘natural capital’ to describe natural resources and amenities (Dillard *et al.* 2009:2).

Bourdieu also relates social capital to the size of the network; namely the gains from networks that attract individuals to engage and maintain their links with other people in the network (Tzanakis 2013). Social capital, however, is not only limited to economic processes, as it may include other forms of support. According to Christoforou (2012:2) “such neoclassical (mis)treatments of social capital provide individualist and reductionist interpretations of human behaviour”. He adds that the interpretations fail to capture important aspects of human behaviour that people learn from becoming members in social organisations. Toner (2003:772) agrees that such “conceptualisations are an attempt to ‘capitalise’ every aspect of people’s lives”.

Over the years, many definitions of social capital have emerged, but the most common is “norms and networks that enable collective action” (Woolcock & Narayan 2000:225). The definition is like a short version of Robert Putnam’s definition, namely “the features of social organisation, such as networks, norms and trust that facilitate coordination and cooperation for mutual benefit” (Dillard *et al.* 2009:2; Ling & Dale 2014:3). Grootaert and Bastelaer (2002) mention that Putnam's definition focuses on analysis of social capital at the micro-level, while Coleman’s (1990) introduction of a vertical component to social capital opens the door to broader or meso-interpretation. In his definition, Putnam identifies networks, norms, reciprocity and trust as the principle elements or features of social organisation (Grootaert & Bastelaer 2002; Onyx & Bullen 2000). He is supported by Coleman who mentions that social capital consists of some aspect of a social structure that facilitates individual or collective action generated by networks of relations, reciprocity, trust and social norms (Coleman 1988; Tzanakis 2013). Reciprocity, trust and social norms enable cooperation within the networks. Unlike other assets, social capital is accumulated through building and strengthening social

relationships with people (i.e. family, friends and community members) and is not depleted by repeated use (Gertler *et al.* 2006).

The different types of social capitals identified are bonded social capital (consisting of close tie relations between relatives, friends and neighbours), bridging social capital (connections of heterogeneous groups such as colleagues that are able to access each other's resources) and linking social capital (unlike people in dissimilar situations). Another type not mentioned in most literature sources is vertical social capital (Ling & Dale 2014). According to Ling and Dale (2014:3), vertical social capital "pertains to connections with people of power whether they are in politically or financially influential positions, while linking "connects the civic community to political decision-making and financial resources".

Social capital, particularly bonding social capital, is often the most accessible resource for many poor and marginalised people. The asset can be relied upon to mobilise the other assets, which along with supporting policies, institutions and processes are needed to enable transformation of assets to livelihood outcomes, as depicted in the livelihood framework (Mubangizi 2003:141). According to Grootaert and Van Bastelaer (2002:2) "social capital is a critical asset for creating opportunities that enhance wellbeing and for achieving greater security and reduced vulnerability".

Social capital can potentially enable people to reduce economic transactions and minimise labour through combined efforts. The reduction of transactional costs in economic exchanges allows them to save some of the scarce and very important financial resources. The risk in these kinds of exchanges is often high, because they tend only to be governed by the norms of trust and reciprocity, which are closely related social constructs usually applied in contexts involving various forms of transactions (Nyoni 2012). Trust develops over time because of positively repeated reciprocity or the obligations and/or expectations of reciprocity (i.e. when one does something for others they are expected to reciprocate the deed). It is informed by the actions or behaviours of others and is perceived as a 'value', because it is earned. According to Herreros (2004:7) social capital, then, is not trust or networks but the obligation of reciprocity that can be derived from relations of trust and information that can be derived from the participation in social networks.

McAllister and Ring (cited in Molm *et al.* 2009:7) distinguish between two forms of trust that are cognition-based and affection-based (McAllister) as well as fragile and resilient (Ring). There are similarities between these forms, because cognition-based and fragile refers to trust that develops from expectations or beliefs about reliability, which is easily abandoned when the expectations are violated. Affection-based and resilient trust, on the other hand, is able to survive such violations, because it is not only based on the expectations of reliability, but respect for social relationships (long-term relationships). Resilient trust can be found in relationships with family and friends.

3.3.1 Social networks

Nadel (cited in McKinney 2000:186) defines networks as “the interlocking relationships whereby the transaction implicit in one determine those occurring in others”. Social capital, which is actually an asset in social networks, is captured from resources embedded in social networks (Lin 1999:28). The concept of “social networks” has been well established in both anthropology and other social sciences for at least the last 50 years. Network thinking has been popular amongst quantitative social scientists (especially sociologists), who developed the tradition of *social network analysis* (SNA). This tradition is characterised by a “high level of formalization of network measures” and “relies on mathematical concepts and technical methods, drawing especially on graph theory” (cf. Knox *et al.* 2006). Early anthropological studies have followed an ego-centred network approach to understanding inductively “how people’s interrelationships with one another produced particular kinds of understandings about the world in which they lived and the people with whom they interacted” (Knox *et al.* 2006:123). Since the 1980s, anthropologists have realised that the network is much more than a neutral analytical tool for analysis of social life. It is also seen as a “form of activity and performance” (Knox *et al.* 2006:123).

Social networks are a vital asset for most people as they depend on their networks with relatives, neighbours and friends for support (Daskon & Binns 2010:507). Trust and reciprocity in these close-tie relations tend to be not only inherent, but also mutual. This is enhanced by shared knowledge, values, norms, traits as well as the long periods of social interaction. Putnam and Putnam as well as Leonardi and Nanetti (cited in Daskon & Binns 2010:510) mention, “there is a greater chance of achieving socio-economic development

where mutual reciprocity and trust, based on family kinship and traditional customs, play a pivotal role”.

However, some people with access to this asset, especially in rural areas of developing countries such as in Africa, continue to live in poverty. The problem seems to be multifaceted, like the nature of poverty and greater attention has to be paid to various issues.

Meagher (2006:556) explains that in order to understand the problems faced by the networks, focus should be placed on the specific institutional content, wider linkages of different types of networks and the influence of external pressures of liberation, globalisation, political reform as well as cultures and institutional history on African networks. Social networks are influenced by the negative externalities at micro, meso- or macro-level. Bourdieu also mentions that social resources (incl. networks) could be used to produce and reproduce inequality by demonstrating how people gain access to powerful positions through the direct and indirect employment of social connections (Tzanakis 2013).

In the Rainwater Harvesting research project we were guided by the earlier understanding of networks as a methodological construct, as well as combining it with the view of networks within the framework of social capital where the main question centres on the content of trust, reciprocity and resources (cf. Glanville & Bienenstock 2009:1509-1515). We realised that there is a wealth of information locked in networks that has great potential in both development discourses and rethinking questions of relatedness. For example, network ties are emotionally supportive and influential in the flow of information. Perhaps even more important than social support are the ways in which social relationships provide a basis for intimacy and attachment. For instance, when relationships are solid at a community level, individuals feel strong bonds and attachment to places (e.g. a neighbourhood) and organizations (e.g. voluntary organisations). Social networks might be powerful sources of social influence, promoting social participation and social engagement.

CHAPTER 4: RESEARCH RESULTS

4.1 INTRODUCTION

The content of the research findings is related to three objectives as stated in Chapter 1. They are:

- a) To describe the nature of local customs, norms, beliefs and knowledge involved in the use and conservation of natural resources.
- b) To analyse how the innovations regarding RWH&C techniques have influenced the social relationships within the villages with specific attention to the strength and nature of social networks.
- c) To conclude whether households involved in the RWH&C project in the selected villages have the ability to sustain food security and alleviate poverty.

Traditionally agriculture was a communal activity that involved the participation of a group of people (e.g. family or community members) who helped each other with weeding, ploughing and planting. *Letsema* or *matsema* (plural for agricultural work groups) were usually organised to help with the above-mentioned activities and the organisers normally prepared traditional beer and food for the people helping them. Such groups provided the much-needed support in the form of human capital. Within the Rainwater Harvesting and Conservation project associations locally known as *Matangwana* (Sesotho word that denotes a small dam) or Community Based Water Harvesting Interest Groups (CB:WHIGs) were established to provide members with support. Each village that had members participating in the project had its own association (e.g. the Potsane association was named *Ikemeleng* and the one at Rietfontein was *Fadimehang*). The associations consisted of an elected executive committee with a chairperson, deputy chairperson, secretary and treasurer. Members drafted their own constitutions and minutes from meetings were kept. Monthly contributions of R5 were paid to help with resources such as fertilisers, planting equipment and transport fare for the chairperson (representative) to be able to attend meetings of the larger body known as the Municipal Based Water Harvesting Interest Group (MB:WHIG). However, over time it became evident that the CB:WHIGs were inadequate and dysfunctional in most villages.

Currently, many of the associations are inactive, which is why they are referred to in the past tense, and participation in the project has decreased. Most of the people no longer plant or utilise the IRWH technique even though it has benefited their households. The associations have thus been identified as one of the demotivators of participation in the project. Some of the reasons behind the failure of the associations are a lack of trust, cooperation and respect among members. Dependency on other members is another issue and all these have social implications.

To understand the factors that influence the acceptance (the term used in the project was *social acceptability*) or participation in the project, the research focused on the socio-cultural dynamics within the villages of Potsane and Rietfontein. The aim was to understand whether social dynamics (social relationships) and culture (i.e. indigenous knowledge) influence decisions that households (unit of analysis) make with regard to participation in projects aimed at improving their socio-economic conditions. The key research question on social dynamics also looked at whether the introduction of innovative rainwater harvesting techniques could have an impact on the social relationships in the villages and how that could affect the sustainability of the techniques.

4.2 CUSTOMS, BELIEFS AND KNOWLEDGE RELATED TO THE USE AND CONSERVATION OF NATURAL RESOURCES

Culture, within the SLF, relates to the transforming structures and processes that influence and shape livelihood assets and capabilities. For the research, attention was mainly given to local knowledge, particularly the beliefs and knowledge relating to conservation¹⁶ and use of natural resources. Inquiries were made regarding the use of water (including how it is conserved, the type of water people prefer and traditional ways of making the resource available), how they control pests as well as the perceptions people have about food and food production. Historical information about the traditional rain ceremonies and the naming of months and seasons, which reflect the way the Tswana and the Sotho (the two dominant cultural groups in Thaba Nchu) relate to and understand their natural environment, is also

¹⁶ The terms *conservation*, *preservation* and *resource management* are used to refer to the protection and sustainable use of natural resources.

included in this chapter. Most of the customs relating to rain (rain rituals) are no longer practised, but they have influenced beliefs regarding the use of resources such as land and water.

The population in Thaba Nchu, including the villages of Potsane and Rietfontein, largely comprise Setswana- and Sesotho-speaking people. The groups share many similarities, particularly with regard to cultural practices (i.e. beliefs and customs) and language. Traditionally they both had beliefs and customs that related to the conservation and use of natural resources. Nature provided them with many resources, rendering them entirely self-sufficient (Schapera 1984). They cultivated, bred animals, built homes and made their own clothing and household utensils from natural resources. The principal crops they planted included sorghum, maize, millet, wheat, beans, some vegetables, fruits and nuts (Ashton 1967; Schapera 1956). They also subsisted on wild plants and meat, which were obtained through hunting and not so much from slaughtering unless there were significant ceremonies. Schapera (1984) mentions that sandy loam soils were the most favourable for planting a variety of crops among the Tswana. The Sotho, especially in Basutoland (now known as Lesotho), also distinguish between the different soil types (Ashton 1967). They believed the darker soil was richer and great for producing crops in wet seasons, while the reddish soil was more productive in dry seasons.

Crop production was practised along with animal husbandry as they kept animals such as sheep, goats, cattle, fowls and dogs (Schapera 1984). Horses and donkeys, which were introduced to them by the Europeans, became an important addition to their livestock, greatly replacing oxen as transport. Horses, however, did not entirely replace cattle (or oxen), as they were still used for pulling ploughs and, most importantly, for economic exchanges, particularly for the payment of bridal wealth (*bogadi* or *bohadi*). “The possession of cattle is itself a source of status; a man’s wealth is estimated mainly by the size of his herds, and a large owner is generally respected and influential in tribal affairs.” (Schapera 1984:23) Animals were the responsibility of men as they were also hunters, while women mostly worked in the fields and homes. The animals were kept at grazing posts in the open veld (bush), known as *meraka* in Setswana and *metebong* in Sesotho or posts (kraals) near the homes. The grass species of the area provided the animals with nutrition, but to access water,

the animals sometimes had to be driven for kilometres. This also meant that at other times they went without water for several days (e.g. three to four days).

People in the rural areas still rely on nature for resources such as land and water. The land in rural Thaba Nchu is communal and divided into three categories of use (residential, grazing and crop). The divisions are meant to accommodate important livelihood strategies such as crop production and livestock breeding. However, large areas of land (about 340 hectares between Potsane and Rietfontein) meant for crop production have not been utilised for about 25 years, instead people prefer to plant crops in their backyards (Backenberg 2009). Research done by the Rainwater Harvesting and Conservation project shows that there is opportunity for upscaling from the backyards to the croplands, because some of the soil is fertile and suitable for crop production. Nonetheless, the people have not moved back to the croplands, because they lack resources such as vehicles, fences, fertilisers and water. Water shortage is a major issue in this area, which is semi-arid, with average rainfalls of about 500 mm per annum and soils high in clay content (Botha *et al.* 2001). These conditions are not favourable for crop production, especially considering that municipal water supply to the rural areas is also unpredictable. Availability of water has always been a challenge, but people have managed to survive throughout the years by adopting certain practices. These practices include rainmaking ceremonies, which were believed to bring the much-needed rain. The section below looks at the rainmaking ceremonies and the types of rain.

4.2.1 Rainmaking ceremonies

The planting season among the Tswana and Sotho often started with rainmaking ceremonies organised by the chief. One of the ceremonies mentioned by Schapera (1984) was the annual ritual of *tseola* (also known as *tsheola*) or *sephai* that took place during spring in the month of August or September just before the planting season. The ceremony took place on the grave of one of the ancestors of the chief and the chief, with the guidance of the rainmaker, was responsible for offering prayers and a sacrifice at the ceremony. The sacrifice was usually a black ox. The meat of the animal was eaten on the spot and the chief was the first to partake in the feast. The hides, blood and chymes were buried in the grave, but bones, horns, hoofs, skin and other inedible portions were burned on the grave. As the smoke from the offering arose, the chief offered prayers to his ancestors on behalf of his people. The people

would then worship and sing praise songs of the chief's ancestors as well as rain songs. "Rainmaking was everywhere held to be an attribute of the chiefship, and a chief's reputation and popularity were often determined by the nature of the rainfall during his reign." (Schapera 1984:60) The chief, particularly among the Tswana, possessed a rainmaking enclosure in which rain medicines¹⁷ were kept in clay pots. Every year just before the planting season, young girls, with the chief's command, had to fill the pots with water and the contents from the pots were sprinkled in the fields (Schapera 1984:60). This practice was done to call for rain, but if it failed to bring rain they resorted to other practices (e.g. married women would go to the graves of the chief's ancestors to pour water and beer on them). The ceremony of *tseola* (performed by the chief) was usually practised as a last option. Most of the rain ceremonies, especially those performed by the chief, took place in secret and people were not allowed to see how he made rain. The role of the chief, therefore, exceeded beyond being just a political figure responsible for regulating trade, controlling the allocation of land and heading the council, as he was also responsible for making rain available (Schapera 1984; Comaroff & Comaroff 1991). He was seen as a direct link with his ancestors whom the people regarded as gods, because they were perceived to possess supernatural powers and as being closer to *Modimo*, the creator of everything. Therefore, the task of the chief was to appeal to his ancestors on behalf of his people and they in turn had to intercede with *Modimo*. "In this capacity the chief personifies an idea implicit in the Sesotho-Setswana cosmology that the natural order and the human social order are linked" (Murray 1980:65). When he died he was buried in the great cattle kraal near the council place close to his ancestors, because it was believed that he would join them (Schapera 1984).

The other popular rituals included "pegging the land" (*go bapola lefatshe*) and *lesokoane*. Schapera (1971) mentions that the ritual of "pegging the land" among the Nguni was performed in order to ask for rain and protection from diseases. Wooden pegs smeared with traditional medicines were placed on the roads close to where people walked in order to prevent evil spells that could be brought along by outsiders. The wooden pegs with traditional medicine were also used for protection in the yard, house or kraal. Most of the practices, including the rain ceremonies, had been discontinued by the early twentieth century due to

¹⁷ Rain medicines were mostly made of plants and animals that are supposedly connected with rainfall such as guinea fowl and certain species of bucks (Schapera 1956).

missionary influence. The *lesokoane*¹⁸ ceremony, however, was still popular in Lesotho and the Free State province, including Thaba Nchu. *Lesokoane* is a playful ceremony, usually performed to call for rain, in which maidens and women from one village raid another in order to capture the *lesokoane* and those from the raided village have to attempt to steal it back. In the western world, it can be related to relay, because once the spoon has been captured, it is tossed to other women who are waiting outside the raided village along the way back to their village. The women from Potsane and Rietfontein mentioned that before reaching their village, the spoon is usually taken to a place with water (e.g. a natural spring or any reservoir) and there it is smeared with mud. When they reach their village the spoon is taken to the place of the chief or headman where it is kept inside the house or kraal and according to informants, soon after this the much-needed rain would fall. Then once the spoon had served its purpose the women from the raided village would attempt to steal it back or request it from the chief or headman, but the women from that village would still defend it. Based on the stories of informants it became evident that there are various versions of *lesokoane*, but one of the popular songs sung was:

Pula

Pula ko thabeng (both verses sung twice),

Re batla pula

Re batla pula ko thabeng (both verses sung twice).

(Tswana version)

Rain

Rain at the mountain (both verses sung twice),

We want rain

We want rain from the mountain (both verses sung twice)

(English translation)

¹⁸ The term *lesokoane* directly refers to a wooden stick or spoon used for stirring maize porridge as well as a game or ceremony performed to call for rain.

At Rietfontein, they also combine this ceremony with prayers. The events do not take place on the same day, but the prayer meeting takes place on a special day at a nearby koppie (hill) in the veld. The prayer meetings are organised annually by a woman named Maria Senoge. She takes a group of boys and girls under the ages of ten to a nearby koppie (hill) to pray for rain. On the way, they each take a branch from the blue gum trees in the village, which are then placed in the kraal of the organiser upon their return and she burns them after the event had ended. The branches are taken to symbolise the time when Jesus and his disciples arrived in Jerusalem and the people welcoming them spread the leafy branches on the road. However, she also combines it with the *lesokoane* tradition of placing the spoon in the kraal of the chief. The prayers for rain are held at hills or mountains, because people believe that they have to be at a high point (possibly to be closer to heaven and the skies) when they pray for rain. These prayer services were mostly introduced by missionaries as a way to replace the much older practices that involved ancestral worship. Some of the Setswana and Sesotho church hymns also indicate the importance of rain, for example, “Pula tsa lehlohonolo, ha di na ka medupe” (rain¹⁹ of blessings, when they fall gently); and “Morena ba mpoletse fa o nesa dipula, dipula tsa tshegofatso, a di wele mo go nna” (Lord, they told me that you bring rain; rain of blessings, may they fall on me).

4.2.2 Types of rain and its significance

The terms *tsheola* (*tseola*) and *sephai* not only refer to rainmaking ceremonies, but are also used to refer to different types of rain in Setswana. Both Tswana and Sotho distinguish between the different rains depending on the time they fall and their intensity. *Sephai*²⁰ is the first rain that falls during spring, while *tsheola* is the rain that falls during summer months. In addition, Tswana people speak of *kgogolammoko* and *mookodi*. *Kgogolammoko* is rain that comes in autumn after harvesting time and *mookodi*, which refers to rainbow in Sesotho, describes rain that comes from a single cloud and only falls on a small piece of land covered by the cloud (Mogapi 1992). The other types of rain or precipitation are *medupe* and

¹⁹ Rain in both songs is referred to in plural.

²⁰ Information about rain is found in Mogapi (1992:188) and informants.

matlakadibe, which can be taken to explain the intensity of rain, because they fall anytime. *Medupe* is the gentle rain and *matlakadibe* (which directly translates to one that brings evil) is associated with strong winds, thunderstorms and/or hailstorms (hail is *sefako* in Sotho and *sehako* in Tswana). The latter is less favoured, because it is destructive, while the former is believed to be good for growing crops. The hailstorms and thunderstorms or lightning associated with *matlakadibe* rain were usually frowned upon by the people and there are several superstitions or beliefs relating to such weather conditions, which were believed to be retributions from God (*Modimo*) or the ancestors (*badimo*). To prevent the conditions, several taboos were observed before and during planting season, which are symbolised by the participation of maidens and young boys in the first ceremonies.

Rain is still perceived as a good omen or blessing, especially if it falls on special occasions. The majority of villagers at Potsane and Rietfontein said they preferred rainwater to tap water for their crops. They believe rainwater has nutrients that are essential for their plants. The significance of rain among the Tswana and Sotho is also reflected in the naming of, for example, the currency of Botswana, the *Pula* (rain); the national motto of Bophuthatswana “tshwaraganang lo dire pula e ne” (if we stand together and work hard we will be blessed with rain); and the surname of the chieftaincy of Barolong boo Seleka, Moroka, meaning rainmaker (*moroka wa pula*). The National Crest of Lesotho is *Khotso! Pula! Nala* (peace, rain, plenty). *Pula, Nala* is a common phrase used by both groups and often the chief would greet people with the same words at public gatherings.

4.2.3 The naming of Months and Seasons

The names given to months and seasons in Setswana and Sesotho are indicative of the relationship people had with their environment and the natural events that happened during particular periods. Like the Gregorian calendar, both the Sesotho and Setswana calendars comprise twelve months, but there are differences with regard to when the year begins. Both calendars also recognise four seasons, which are explained according to the lifecycle of plants and weather pattern, particularly the cycle of the moon (Futhwa 2011: 69). The names for the months and seasons are not exactly the same in the two languages, but have similarities. Table 4.1 shows the names of the twelve months in English, Setswana and Sesotho.

Table 4.1: Months in English, Setswana and Sesotho

ENGLISH	SETSWANA	SESOTHO
January	Ferikgong	Pherekgong
February	Tlhakole	Hlakola
March	Mopitlwe	Hlakubele
April	Moranang	Mmesa
May	Motsheganong	Motsheanong
June	Seetebosigo	Phupjane
July	Phukwi	Phupu
August	Phatwe	Phato
September	Lwetse	Loetse
October	Diphalane	Mphalane
November	Ngwanatsele	Pudungwana
December	Sedimonthole	Tshitwe

The table below (Table 4.2) shows the four seasons in the three languages (English, Setswana and Sesotho).

Table 4.2 Seasons in English, Setswana and Sesotho

ENGLISH	SETSWANA	SESOTHO
Summer	Selemo	Lehlabula
Autumn	Gwetla (Letlhafula)	Lehwetla (Hwetla)
Winter	Mariga	Mariha
Spring	Dikgakologo	Selemo

The year (*selemo* in Sesotho and *ngwaga* in Setswana) is believed to begin around the month of August (*Phato/Phatwe*) or September (*Loetse/Lwetse*), which is the end of winter and beginning of spring. It is marked by the arrival of winds (dust) as the first rain falls during this season and agricultural activities begin. The Setswana word for spring (*dikgakologo*; meaning defrosting/melting) is indicative of this transition, which symbolises rebirth. The Sesotho word *Selemo* (derived from *lema*, meaning plant), which also means a year, refers to the time for planting crops. The name *Phatwe* (September) describes the ploughing of fields

in preparation for planting and *Phato* refers to the breaking of trees due to the strong winds. *Loetse* (Sesotho word for September) is taken from the expression “*lebese le wetse* (milk has spilled), because it was believed that there will be plenty of grass. *Lwetse* (September in Setswana) describes the prevalence of clouds that signify the coming rains. *Mphalane/Diphlane* (October) is the time when impalas give birth; therefore, the names refer to the word *phala*, meaning a small impala (Mogapi 1992).

Although there are many similarities with regard to the naming and meanings given to months in Setswana and Sesotho, there are also differences as with the names for November and December. The name *Pudungwana* refers to the period when *pudumo* (wildebeest) deliver their young (*ngwana*) and *Ngwanatsele*, which is taken from the phrase “*ngwana-itseele-thelwa*” (child take some grapes) refers to the period when grapes have reached maturity and people are getting ready to harvest them (Mogapi 1992). However, according to Futhwa (2011: 70) “*pudu* is an expression that describes a particular state of child (*ngwana*) dirtiness from play” and thus the name implies that during this month children play until they are dirty as it is warm. A more direct translation for *Ngwanatsele* is “suckling child or young”, because at the time most animals have given birth and thus the young are breastfeeding. December in Sesotho is named after grasshoppers (*tshitwe*) that normally appeared during the time and the Setswana word *Sedimonthole* comes from “*Sedimo (selo sa Modimo) ntlhola morula ke o!*” (God’s creation please help with this load/ burden), a saying popular with people returning from harvesting squash, which they would hide under the morula,²¹ because they were not allowed to harvest anything before the Chief had tasted their produce and when they arrived home they would ask people to help them with the load. The word ‘*sedimo*’ in Sesotho is also used in some prayers offered to the ancestors. January is *Ferikgong* in Setswana and *Pherekgong* in Sesotho. The names are written differently, but have the same meaning as they describe the event when wood/ branches of certain trees are broken and farmers set up rafters made from the wood to scare birds from feeding on their growing crops. The words come from *fera ka kgong*, which means to build with wood or describes the process of setting up the rafters. *Tlhakole/Hlakola* (March) means to clean and

²¹ Morula actually grows in the northern parts of Botswana and Limpopo in South Africa. Other parts of the country do not have the fruit, therefore it is evident that the saying was commonly used in these areas where the fruit grows.

is the month of hoeing after the summer rains (Futhwa 2011). During this time, sorghum plants release a white substance and the ears of maize (corn) start to come out. By the month of March, the grains of the sorghum become more visible and attract birds. The Sesotho word *Hlakubele* comes from *tlhaku tsa mabele* (grains of sorghum) and *Mopitlwe* is taken from a saying “*mabele a pita dikgala*” (when the leaves of the sorghum are growing and start pressing against each other). During April, maize is ready for harvesting and roasting; thus, the Sesotho word *Mmesa* (derived from *mmesa* the roaster). *Moranang* refers to beans with a similar name that harden or reach maturity at the time.

The month of May is *Motsheanong* in Sesotho and *Motsheganong* in Setswana. During this time, the grains of sorghum have hardened and the birds are not able to eat them. Therefore, *motsheha dinong* (the one who laughs at birds) or “*mabele a tshaga dinonyane*” (sorghum laughs at birds). *Phupjane* (June in Sesotho) means holding back a little, because it is the start of winter and things are dying (animals and plants). Thus, it is said that nature is starting to hold back and the term is a diminutive of the name of the following month (July). *Phupu* (July in Sesotho) means to hold back completely as the temperatures have dropped and winter reaches its peak. The Setswana term for June (*Seetebosigo*) directly translates to “do not visit at night” and it is a name given to show that it is not ideal to visit, as it is cold outside. *Phukwi* (July in Setswana) describes the time when the leaves of certain trees dry out and fall. The meanings for the seasons are in Table 4.3.

Table 4.3 Meaning of Seasons in Setswana and Sesotho

Setswana	Sesotho
Selemo: Is the warm summer months when crops are planted and growing. It is derived from <i>lema</i> (plant).	Lehlabula: The term refers to a warm period and is often used for both the spring and summer months.
Gwetla (Letlhafula): The period when most crops are ready to be harvested.	Hwetla: The period when most crops are ready to be harvested. The term <i>lehwetla</i> refers to produce that is harvested at the time.
Mariga: Like summer, the Setswana term for winter also refers to a cold period. It is exactly the same as the Sesotho word, but the differences	Mariha: Like summer, the Sesotho term for winter also refers to a cold period. It is exactly the same as the Setswana word, but the

are in the spelling and pronunciation.	differences are in the spelling and pronunciation.
Dikgakologo: The word means <i>defrosting</i> or <i>melting</i> . It describes events that take place after winter, as things defrost from the cold and life starts because of the warm period.	Selemo: This term is used for spring, instead of summer as it is used in Setswana. It is derived from the verb <i>lema</i> (plant), because crops are planted during this period. The word is also commonly used to refer to <i>year</i> .

Resource management, according to Granfelt (1999), should be understood as a socio-cultural concept. Cultural norms and beliefs influence the perceptions people have about their environment and how they relate to it. Berkes and Turner (2006) also mention that knowledge about resource management develops when people learn that resources are depletable. Rainwater harvesting techniques are examples of knowledge that develops from the realisation that resources are depletable. People in water-scarce regions use these techniques to conserve the little water they have for domestic purposes and other livelihood strategies, particularly crop production. Techniques that are common in rural Thaba Nchu, including Potsane and Rietfontein, are rooftop, pit (road water harvesting), trenches and the new IRWH that was introduced by ARC-ISCW. Rooftop rainwater harvesting technique or systems refer to water (rainwater) collected from the roofs of houses or other buildings and stored in tanks or any container. This system of collecting rainwater is widely practised in South Africa and the water is often used for domestic purposes.

The other technique known as pit or road water harvesting “improves the availability of water for crop production as runoff is collected in pits or underground tanks and it can be used at a later stage to provide crops with supplementary irrigation” (Viljoen *et al.* 2012:42). At Thaba Nchu, water collected in these pits was often left unused. As a result, the pits filled with sediments. The pit system had to be discontinued as it posed a hazard for young children (see Photo 4.1). “Agricultural specialists agree that the use of appropriate production techniques, especially those that encourage conservation of water and soil resources, will result in the increase of agricultural output in semi-arid areas” (Kundhlande *et al.* 2004:70).

Besides the rainwater harvesting techniques, no other conservation methods were observed in the villages of Potsane and Rietfontein, but people respect their natural environment and use

their resources sustainably. However, the decisions people make with regard to the use of certain resources are greatly influenced by social norms, particularly social and moral obligations. For example, at Rietfontein, several participants reported that they did not water their gardens with the water from the communal taps, because they had big gardens in their yards and need lots of water, which sometimes required the use of a hose, and this could cause conflict with the other users. Therefore, they rather use a container (e.g. 20l plastic bucket or 25l plastic drum/bottle) to collect sufficient water for small vegetable gardens or wait for the rainy seasons before they start planting. Obligation (social or moral) in this case takes precedence over the right to use the resource. The social relationships with other members of the community are very important and people do not want to jeopardise them by causing conflict.



Photo 4.1 Pit filled with sediments (Source: ARC-ISCW of South Africa)

To preserve soil fertility before planting, the soil is usually ploughed and mixed with natural fertilisers such as cow dung. The majority of the traditional practices such as the cleansing and blessing rituals for the household or gardens are no longer practised on a wider/broader scale. Few people still consult healers for this purpose, but often do so in secrecy. The impact of the missionary influence is evident in these areas, because the majority of people

mentioned that they preferred praying for blessings instead of consulting a traditional healer. Traditional healers are mostly consulted for personal issues (e.g. spiritual guidance and healing). Regarding the inquiries about pest control, the majority mentioned that they could not afford pest control, but did sometimes buy pesticides or rat poison when they had a serious problem with insects or rats (common pests in the area). Birds are also a major problem, especially with crops, as they eat the seeds and crops. Various methods are used for scaring the birds. The most common is to cover crops with plastic nets, but most people do not have nets so they have to chase the birds away.

Beliefs about creatures such as water snakes, which have helped with the conservation of water resources, are still largely present in most villages. Natural springs and lakes are often avoided, because of fear of the mystical creatures that are known to dwell in the waters. At Potsane and Rietfontein there are not a lot of water features, but several small (some possibly man-made) reservoirs are present nearby. These are not utilised by the people, but animals drink from them.

4.3 SOCIAL RELATIONSHIPS AND SUPPORT WITHIN THE VILLAGES

According to the SLF, livelihoods are determined by a range of assets/capital available to the household. The assets include financial, human, natural, physical and social assets. All the assets are linked to one another in one way or another and a household needs access to an array of the assets to sustain their livelihoods. Mubangizi (2003:141) mentions, “supportive policies, institutions and processes also need to be in place to enable the transformation of these assets into sustainable livelihood outcomes”. In rural areas, however, households are often faced with a shortage of resources, particularly natural (water), financial and physical (infrastructure and services). The most accessible resource for them is social capital, which refers to “social resources upon which people draw in pursuit of their livelihood objectives” (SL Guidance Sheets 2000). The resources in social capital include social network and connectedness, membership of formalised groups and relationships of trust, reciprocity and exchanges. Household members have to become involved in these groups and relationships in order to benefit from them.

For this research, the focus was on social networks as a form of support (emotional and financial). The theory of social networks states that each individual is surrounded by a network of social relationships that link them with kin, friends and acquaintances (Preston-Whyte 1969). Through the links, the individuals are also connected to other members and the community at large. These webs of relationships enable the exchange of certain goods and services, particularly knowledge and information. The individual will have direct contact with some of the members of the networks who are his/her close relations and others they will know through people in their networks. Trust and reciprocity are therefore used to analyse the types of relations, as it is high in close relations.

At Thaba Nchu, which comprises 42 villages scattered north and south of the business district, a lot of interaction takes place between the people from the different villages. The people are mostly linked to one another through blood (kin), marriage, friendship and neighbourship. The sense of *ubuntu* is still present in most of the rural areas, as people still understand the importance of being good neighbours and helping one another in times of need. The present study was conducted from 2009 to 2013 and focused on social networks in the villages of Potsane and Rietfontein. To determine the strength and characteristics of social networks within the villages of Potsane and Rietfontein, inquiries were made about the number of connections of a member of a household, the frequency of contact, scope of networks and reasons for the connections. The ego-centred model was used to provide information about individuals and people in their networks.

A total of 20 people from Potsane and 18 from Rietfontein participated in the research. The majority of the participants were members of the Rainwater Harvesting project. Seventy one percent of the participants were female and the remaining 29% were male, which is common in the villages, as the female population outnumbers the male population. The high female participation in the project is also indicative of traditional division of labour where women are the agriculturalists. Most households are dependent on social grants, particularly old age, care dependency and disability. Livelihoods are also supplemented through crop production, animal husbandry, part-time employment and support from social networks (relatives, friends, neighbours and other acquaintances). Support from relatives, friends and neighbours is very important for many people. The relationships are characterised by mutual trust, cooperation and reciprocity that enable collective action.

Internal support was provided (or supposed to be) by the associations (*Matangwana* or CB:WHIGs). According to Botha *et al.* (2007:96), the activities of the associations were “arranging of collective labour utilization, the collection of subscription fees, mobilizing members to assist one another in preparing the basins, and collectively performing activities like planting, weed and pest control”. The associations, which were mostly made up of women, functioned well at first, as shown in photo 4.3. However, over time they proved to be dysfunctional in most villages and have thus been identified as being one of the demotivators for participation in the project. The factors that affected the associations include lack of trust and respect among members, dependency on others and a shortage of resources (water, tools and fertilisers). Most of these factors have social implications. The members of the executive committees in the associations also mentioned that their main challenge is lack of skills training, because they do not really know what they are expected to do, as they do not have job descriptions. Training in administrative duties and conflict management were some of the skills they mentioned they needed training in. Thus, it was evident that the formal structuring of the project and associations might have affected participation and sustainability of the techniques. The failure of Community Based Water Harvesting Interest Groups (CB:WHIGs) also affected the Municipal Based Water Harvesting Interest Groups (MB:WHIGs), which are an integrated authority in the hierarchy of the organisation of community-driven units. Deeper analysis into the origins of the associations can also shed light on many issues. For example, the names of the Potsane association (*Ikemeleng*) and Rietfontein (*Fadimehang*) do not so much refer to collectivism or even encourage it. *Ikemeleng* literally means “stand-up for yourselves or do for yourselves” and *Fadimehang* means, “to become wiser”. Both names, somehow, encourage individualism, not collectivism, as was intended with the project. The idea was to empower the people, but it has become evident that there is a need for continuous monitoring and support.

Forms of external support provided included numerous capacity-building actions that were conducted with extension officers, training courses and workshops for the youth and households involved in the project (Backenberg 2009). Participants also received training for activities like the application of the *IRWH* technique, planting of various crops, fertilization, weeding, insect and pest control, harvesting and maintenance. Implements such as spades, wheelbarrows, forks and seeds were also given to associations at the beginning. The former Minister of the Department of Water Affairs, Buyelwa Patience Sonjica, promised to provide

participants in the villages with 1000l water tanks so they could continue with the project. The tanks were eventually delivered, but they were not distributed evenly, as some participating households did not receive them. The people that did not receive tanks were disgruntled and questioned the selection criteria, which they said was unfair. There is still a great need for continued external support in the villages, because most of the people live in poor conditions and cannot afford the resources required. In the report it was even mentioned that “households need support with finance, markets and a more secure land tenure system to stimulate land transfer in Thaba Nchu” (Viljoen *et al.* 2012:ix).



Photo 4.2 Women working together to construct the IRWH crop bed (Source: ARC-ISWC)

4.4.1 Characteristics of social networks

The structural analysis of the networks focuses on the number and types of connections (e.g. kinship, friendship), strength of relationship (using frequency of contact as an indicator), and nature of support (e.g. emotional or economical/convenience) of 38 participants from the two villages (Potsane and Rietfontein).

4.4.1.1 Number of connections and location of members

The research showed that networks with relatives, friends and neighbours play an important role among both male and female participants and are a crucial component in the livelihood strategies of the households at Thaba Nchu. At both Potsane and Rietfontein, it was established that the majority of people in the networks are staying in the same village as ego or nearby (i.e. in Thaba Nchu or neighbouring towns).

Table 4.4 Number of connections and location of members

Number of connections			Location of network members			Total
Nature of the relationship			Same village	Within Thaba Nchu area	Outside Thaba Nchu area	
Relatives (blood and marriage)	Friendship	Other relationships (e.g. neighbours or other acquaintances)				
102	38	94	159	51	24	Female = 234
46	21	31	64	23	11	Male = 98

4.4.1.2 Strength of relationship

The immediate group of supporters inside the village are dominant in numbers and frequency of contact in both villages. The high number of strong relationships of female participants is indicative of the relationships they have with family and friends. Females also had more relations than the males. However, the strength of relationships, especially those with close family (e.g. mother, father, sister, brother or child) is not necessarily affected by a lower frequency of contact or geographical distance, as many of the people who had named a family member outside the village mentioned that they were very important to them. However, distance does play a role with other relationships, because of convenience. The dependence on the relationships and informal institutions is often influenced by educational standards, access (because they are located far from financial institutions) and trust.

Table 4.5 Strength of relationships

		Frequency of contact		Strength		
	Daily/ Weekly	Monthly	Yearly	Strong	Medium	Weak
Female	178	44	12	88	61	26
Male	79	14	5	25	38	21

4.4.1.3 Nature of support

The reasons people gave for their connections were quite extensive, but financial and emotional support were mentioned the most. Esterhuyse (in Viljoen *et al.* 2012) mentions that although the reasons may give the impression that there is a strong dependency on networks for financial support, the networks are actually a safety net that people draw from in times of need, because most of the time they rely on themselves to provide for their daily needs. The reasons participants gave were divided into the following categories:

- Matters concerning the extended family and household

“When I have to organise a ceremony, he will always assist me”, “my wife is the first person I talk to when I have problems”.

- Topics that relate to more personal issues that friends share

“My friends advise me on relationship matters”, “we advise each other on life matters”, “he motivates me spiritually”.

- Help and advice that pertains to specific health, gardening and economic problems.

“He ploughs and weeds my garden”, “she advises me on how to save money”, “I go to her because she knows herbs”.

The exchanges or transactions within the relationships and networks are governed by the norms of trust and reciprocity, which are not solely understood from an economic perspective. According to Nyoni (2012), the concepts are usually applied in contexts involving various forms of transactions. In this study, the forms of transactions or support (term used in study) were classified as financial and emotional. Financial support refers to the exchanges involving material or tangible goods such as food, clothing and tools that can be secured financially. Emotional support refers to the more personal and internal issues that are not tangible (e.g. he advises me, we talk about spirituality and she consoles me when I'm not well). Relatives, friends and neighbours provide both forms of support. These relationships (relatives, friends and neighbours) are regarded as the most important in the hierarchy of social relationships, but they are not on the same level, as relatives are at the top, often followed by friendship and then neighbourship. The term ‘friend’ is respected and is not used with reference to anyone as the Bangladeshi and Indian shop owners use it, but to the people one shares a strong bond with and trusts. Most of the participants in the study will rather refer to other people in their networks, particularly those from the same area, as neighbours, even if the relationship has the characteristics of a friendship. Therefore, friendship, like kinship, is strongly based on various things, including mutual trust and reciprocity. In general, social relationships are very important for most people in rural areas, because they tend to be historical and inter-generational. Trust in these relationships is often enhanced by long-term contact and positively repeated reciprocity.

The general expectation, in trust relations, is that people involved will reciprocate, although they are not tied by any legal agreement, but by social norms of conformity. McAllister and Ring (in Molm 2009:7) mention there are certain expectations regarding reliability and

obligation in trust relationships. According to one participant in the study, “having trust in someone or something is to believe they are honest, sincere and will not cause you any deliberate harm”. From a cultural perspective, trust and reciprocity are entrenched in the principles of *ubuntu* or *botho*, which are based on the philosophy that *motho ke motho ka batho* (we are, because of others) and that man cannot survive alone, but need others. Therefore, the mutual trust, cooperation and reciprocity found in social relationships and by implication in networks are important, because they enable collective action and survival. Social relationships and networks can help to enhance livelihood objectives and outcomes. This is also seen in the way people offer support during times of bereavement and when a member of the community is sick. “Sustenance of trust relations is done through moral obligation that may in the future bring economic returns as well as broaden networks” (Nyoni 2012:8).

Trust, however, does not develop automatically even if people come from the same geographic location, speak the same language or have similar cultural practices (Nyoni 2012). It is earned and that is why it is often regarded as a value. This is evident with the failure of the associations, because although the members are from the same village, they are unable to cooperate with one another. The issues of trust and reciprocity were discussed at a focus group meeting with 16 members of the traditional council of the Barolong boo Seleka (headmen and headwomen) from various villages at Thaba Nchu. The discussion also focused on their understanding of the terms, the significance of the terms in building relationships and helping to sustain livelihoods as well as whether they thought there was still social cohesion in the villages. The majority of the leaders mentioned that there had been many changes in rural areas and that people are no longer cooperative. They said the lack of cooperation was a major factor for the failure of development projects in most villages. They could not identify reasons or factors that could have influenced the changes. However, one mentioned that cooperation is directly linked to reciprocity and trust. He said people trusted and reciprocated when it was mutual. In their case, as leaders, there were more expectations, as they had been elected by the people to be their representatives. There were also indications that membership to networks and the community at large was, in many cases, a burden in the sense that the individual did not have a free choice and became increasingly dependent on the network to survive. Group decisions also influenced the decisions of individual households.

Thus, it is not correct to assume that rural areas are relatively stable and homogenous, just because the people got along and attach value to social relationships.

4.5 CASE STUDIES

Like other livelihoods, rural livelihoods experience various changes over time. To understand these changes, Collin Murray used case studies. The research incorporates two of the three approaches that he mentioned, namely circumspective (look around at a moment in time) and retrospective (changes over time) approaches. Seven people (five from Rietfontein and four from Potsane) participated in the study and the participants were mostly elderly women. The criteria of selection focused mainly on people that had lived in rural areas most of their lives and had been able to survive by applying different or multiple livelihood strategies. Some of the people can be described as ‘success stories’, because amidst the challenges they always face, like other villagers, they have always been able to survive and sustain their livelihoods. Majority have not been formally employed, trained or reached secondary school level, but participated in the Rainwater Harvesting project and were members of the associations. Attention was also placed on social networks as part of their livelihood strategies.

RIETFONTEIN Case studies

Case study 1: Meke Morata, Headman of Rietfontein

Meke Samuel Morata was born on 20 December 1939 on a farm he refers to as Rietfontein No.1 and his family moved to the current location, Rietfontein Trust, in the 1940s after it had been established. His parents (Madihlhare Louisa Morata and Abraham Mahabutsi) had him when they were very young, so he was raised by his maternal grandmother (Maselelo Morata) and uncles. The male figures in his life were his uncles, because his grandfather (Mokgobo) passed away before he was born. He had five siblings, all male. Four have passed away and his surviving sibling is Kganyapa, who now lives in Botshabelo with his wife and two kids. Growing up he worked a lot in his family’s croplands, he also herded cattle and did other chores. After completing Standard 2 (Grade 4), he ran away from home and went to live at another farm where he worked for a white farmer. He stayed at the farm for many years and only returned home in the late 1950s. Upon his return, he was encouraged to find employment, because he was old enough. He went to work at the coalmines from 1959 to

1963. During the period of the great blizzard (not sure if it was in 1963 or 1964), he returned home. In 1965, he went to work at the railway station in Thaba Nchu and married Mamakgowa Agnes Shumaele in 1968. Their first son, Itumeleng, was born on 4 July 1968. Their second son, Gaotlholwe, was born in 1971, the year he left his work at the railway station. On 9 March 1975, they were blessed with their third child, Masello Hilda Morata, Mokgethi was born in 1977 and the last child, Selaotswe, was born in 1981. The children were all raised at Rietfontein, but Itumeleng and Masello have sadly passed away. Selaotswe still lives with his parents, but Gaotlholwe lives in Bloemfontein and Mokgethi lives in Vereeniging. Gaotlholwe and Mokgethi have children, but are not married. Mr Morata and his wife are now raising Boipelo and Katlego, the children of their late daughter Masello.

Mr Morata identifies crop production and livestock farming as important livelihood strategies. His interest and involvement in both activities prompted him to take part in the Rainwater Harvesting project and to adopt the technique. He still utilises the technique, but sometimes he is not able to plant, because cattle from the neighbourhood often destroy his crops and the cattle also go into his hydroponic (tunnel). As the headman, he is well known in the village and has good relationships with some of the people, most are also part of his network. His network consists of neighbours and relatives as they provide him with financial and emotional support. For example, when he needs money he goes to some people in his network to make a loan. Since it is a loan, the expectation is that he will return it after some time. The same applies with things such as tools or farming equipment that he borrows and then has to return. The other things that are exchanged in his networks include food, clothing, information and advice. However, with these, there is no expectation for return of goods, but he is expected to reciprocate when others are in need. Mr Morata mentioned that mutuality is important.

Since most of the people in his network stay in his village, he is able to maintain frequent contact as they meet several times daily or weekly. He also maintains contact telephonically with those living outside his village, especially relatives. The furthest the people in his network live is at Botshabelo, which is about 15 km west of Thaba Nchu. Therefore, he is able to visit them several times in a year. The strength of the relationship is enhanced by frequent contact, but with relatives, it is based on the 'blood' relation itself.

Case study 2: Sana (Franscina) Rasemetse, Resident of Rietfontein and member of Matangwana

Sana was born at Naauwpoort farm in 1968 and had six siblings, two of whom have passed away. She attended school at Masisi Primary until 1981 when she completed Standard 5 (Grade 7). She could not continue with schooling the following year due to lack of funds. Her father became ill and had to go live with his relatives, so he could no longer provide for the family. She resumed her studies in 1983 and completed her Standard 6 (Grade 8). In 1986, she had a baby and had to stop studying again. After the birth of her daughter, she became ill. The family eventually moved to Rietfontein in 1989 and in 1992, after being 'born again', her condition improved. She then went to work in factories at Selosesha and in 1994 she was transferred to the factories in Botshabelo. She left the factories the same year and started work at a crèche (also in Botshabelo) where she stayed for two years. While working at the crèche she met Maipato Rasemetse and they got married. In 1997 she went back to work at the factories and also did a security training course, which she completed in 1999. Unfortunately, she could not find employment as a security guard, because she believes preference was given to male applicants at the time. However, she did get part-time employment doing administrative duties at a security company. In 2001, her marriage to Maipato Rasemetse ended and she returned to Rietfontein in 2002.

She learned about *Matangwana* in 2003 while attending an agricultural show at Yoxford. She introduced the technique to the people at Rietfontein and was elected to be chairperson, when the chairperson of the association stepped down in 2005. She stills holds the position, because a new committee was never elected and now the association is dysfunctional. However, Sana and her mom are still utilise the technique when they plant crops. They have now become part of the *Itireleng Community Project*, where they plant crops that are sold to feeding schemes within schools. The *Itireleng Community Project* in Rietfontein is part of a larger project that runs in other villages with a similar name. Apart from this project, Sana also works at the school where she cooks food for the children and teachers. She is not paid a lot and her livelihood is supplemented by other livelihood strategies such as planting crops and part-time employment. In 2013, she was part of a team that was hired to do upgrades at the Maria Moroka Game Reserve. Her twelve-month-old grandson currently lives with her, because the mother of the child is epileptic. She suffered an epileptic attack when the child

was about four months old. The mother (her daughter) is staying in the same village with her husband and they receive social grants. Sana's mother also receives old-age grants, but has three dependants (her son, grandson and great grandchild). Sana helps both her mom and daughter with their finances, as both are still dependent on her. Apart from her immediate family, she also has other relatives in the village whom she also helps in times of need. She makes money by selling ice-lollies to children in her village.

Sana has a diverse network that consists of relatives, friends, neighbours and the pastor. The majority of the people in her network live in Thaba Nchu, but in different parts of the town. Relatives, friends and neighbours provide financial and emotional support, but friends from church and the pastor provide her with spiritual guidance. Most of the people she has in her network have been in her life for some time and thus, she was able to build trust relationships and sustain them.

Case study 3: Selina Bopalamo, Resident of Rietfontein and her husband is a member of Matangwana.

Selina Bopalamo was born Selina Molatodi at Rietfontein Trust in 1948. She had three siblings (two sisters and a brother) who have all passed away. Her mother passed away in 1964 and she was raised by her maternal grandmother. She went to the Nkhabele Primary School at Rietfontein, but had to drop out before she completed Standard 1 (Grade 3) because of poor eyesight. She then started working full-time in the family's crop fields and that is where she met her husband, Mr Peter Bopalamo. They got married on 26 April 1970. In 1971 she suffered a miscarriage, followed by a stillbirth in 1972 and in 1973 their son ²²*Sam was born. Two years later, in 1975, their daughter *Tumi was born and in 1977 another daughter *Lesego was born. *Moipone, who died when she was five months, was born in 1980 and in 1982 they had *Mpho, another daughter. Her husband, Peter Bopalamo, worked for the Bloemfontein Municipality, but she was not employed formally and worked in the fields for most of her life while raising her children. Each household in the village had access to a portion of land in the communal crop fields and they planted their own crops. Selina used to plant maize, wheat, spinach, pumpkin, beans, watermelon and sorghum. She sold wheat,

²² This sign * indicates the use of a pseudonym to conceal the identity of a person.

maize and sorghum at the markets at Thaba Nchu Station and in town. Her husband was a member of the Rainwater Harvesting project and they still utilise the IRWH technique.

One of their children, *Sam, is staying with them with his three children. He is unemployed and sickly, so Selina and her husband help to raise his children. They also support him. Apart from supporting her immediate family financially and emotionally, she also helps relatives that are in the village, many of whom are related to her husband. She believes that there is good understanding and cooperation between the different members of the community, because they help one another in times of need. She is a member of the tribal committee of the headman and is in the committee of the crèche. Her network consists of neighbours and relatives. The relationship she has with the neighbours is enhanced by frequent contact and mutual exchanges. She mentioned that they help each other with food, money, caring for the sick and other things. However, helping each other with agricultural work is no longer common. By relatives, she mostly refers to her children some of them stay outside the village, but provide her with support as she is helping them with raising their children.

Case study 4: Thelma Moshoeu, Resident of Rietfontein and member of Matangwana

Thelma Thandeka Moshoeu (maiden name Mabohlo) was born in Qoqobo at Ngqumeya village in the Ciskei in 1957. She is one of six children (four girls and two boys) born to Wilson Dopollo and Alma Lindiwe Mabohlo. Two of her sisters have passed away. She started schooling at Ngqumelo Primary, then went to Gapuhubula Secondary after completing Standard 5 (Grade 7) and stayed there until she completed Standard 8 (Grade 10). She then went to do a knitting course in Port Elizabeth with some of her siblings and after completing the course, she moved to Thaba Nchu to stay with her sister who was working as a nurse at Moroka Hospital. Thelma's sister lived at the Eureka Rehabilitation Centre with her husband, a farmer. Her sister bought her a sewing machine and with it, Thelma started a small business making uniforms for schoolchildren at the Keikelame Secondary School and nurses at Moroka Hospital as well as those from a hospital in Kuruman. She met her husband at Eureka and they started dating in 1978. They got married during Easter in 1980. They have three children Tsholofelo, Lorato and Olebogeng. Thelma has never been formally employed, but her husband, who passed away in 2012, was a teacher. She did odd jobs such as helping at the

crèche and did home-based training at Barend ²³ (former Social Development offices in Thaba Nchu), where they worked with disabled kids and orphans.

Although she grew up in a village, her involvement in agricultural activities only began when she arrived at Rietfontein. She was a member of *Matangwana* as well as the Community Workers Program (CWP), which helps poor community members with basic needs such as food. Their tasks include planting crops that are given to the poor, cleaning yards of people that are unable to do it themselves and visiting sick people. Thelma is also a member of a group that helps children who play netball. She has a great relationship with her relatives, friends and neighbours; they help one another during times of need. Most of her blood relatives do not reside at Thaba Nchu. Her brother Ntobeko stays at their birthplace in the Eastern Cape with his wife and kids; Gcotyelwa lives in Mothibistad with his family and Khayalethu is in Kuruman, he works in Cathu as security guard. However, most of her late husband's relatives are in Thaba Nchu.

Up to 90% of her network consists of relatives (children, siblings, nieces and nephews) and the remaining percentage is friends. Her immediate source of support is her daughter, Lorato, who stays with her and works at Nkhabele Primary in Rietfontein. Her son, Olebogeng, stays in Ratau location (Thaba Nchu) where he works as a teacher and her other daughter, Tsholofelo, lives in Bloemfontein. Olebogeng and Tsholofelo also support her financially and emotionally. The majority of the people in her network stay outside of her village and town. This includes her siblings, nieces and nephews that provide her with financial support. They stay at Kuruman, Pretoria, Bloemfontein, Selosesha (Thaba Nchu) and the majority are in the Eastern Cape, her home province. Her close friend stays in Tweefontein (about 7.9 km from Rietfontein). The friend supports her a lot, for example, when she does not have money or needs food.

²³ Barend van Rensburg was the name of the complex/building that used to be an orphanage and later became Social Development offices, which has now relocated to Ratlou Complex.

Case study 5: Sandra Rasiile, resident of Rietfontein and member of Matangwana

Sandra Dineo Rasiile (37) was born at Rietfontein. She is the first child of Mme Mahadi Neria Sesing and has a half-sister named Mathapelo Ellen Sesing. In 1986, her mother was killed by her stepfather Herbert Sesing (Mathapelo's father). At the time, Mathapelo was just one year old and Sandra was nine years old. Both were then raised by their maternal grandmother at Rietfontein. Sandra started school at Nkhabele Primary School and after completing Standard 4 (Grade 6), she went to Keikelame School to do Standard 5 to 7 and matriculated at Albert Moroka High School. In 2004, she began working at Boiteko Preschool in Rietfontein and while working there she was able to complete Level 1 and 2 of the Early Childhood Development (ECD) programme. Then she went to Noordhoek to complete Level 4 of the Micro MBA Business Diploma and Level 5, which she completed in July 2013. She mentions that the love she received from both her mother and grandmother made her passionate about working with children.

She has two daughters, 19-year-old Esther and 12-year-old Botshelo. Both live in Bloemfontein with her sister (Mathapelo), who also has one child named Warona. Sandra and her sister have a great relationship and support each other with many things. The losses they suffered have drawn them closer. First, their mother was brutally murdered by the man they regarded as a father in 1986, then in 2000, her killer (Herbert) died tragically when he was run over by a truck. Their grandmother passed away in 2008. Sandra has a good relationship with many of her neighbours at Rietfontein and is involved in several organisations. She is the secretary of the headman's committee, chairperson of the Nkhabele Primary school board and is a very active member at church (Fire Explosion Ministry). Some of the church services take place in her house. She runs a spaza shop in her yard and, apart from her job at the preschool or the spaza shop she plants crops. Her introduction to agriculture began at primary school and from Standard 6 to 10 (Grade 8 to 10) Agriculture was one of her school subjects. She continued planting vegetables at home until she joined *Matangwana*.

Sandra's network consists mainly of neighbours from her village and the majority of them are elderly women. The network provides her with basic needs such as money, food as well as care, especially when she is sick. Another important source of support is her sister, Mathapelo, who stays in Bloemfontein and currently helping Sandra with raising her two

children. The men in Sandra's network mostly assist with work that she cannot do, such as maintenance work in her household, as she is a single mother. She included her uncle, boyfriend, male neighbours as well as her shepherd in the list. Even though she pays the shepherd for his service, she mentioned that he is reliable and has worked for her for many years.

POTSANE Case studies

Case study 1: Selina Mokgothu, resident of Potsane and member of Matangwana

Selina Mokgothu was born at the Rietfontein farm on 16 January 1945 and is the 12th child of William and Maria Mokatsa. She had fifteen siblings, but only remembers six, of which only one is still alive. She started school at Nkhabele Primary at Rietfontein and only studied until Standard 4 (Grade 6). After leaving school, she worked full-time in her family's crop fields. In 1960, her family relocated to Morolong Location in Thaba Nchu where her father passed away the following year. At the age of 16, she went to work as a domestic worker at Bloemfontein and had her first child, Elizabeth, in 1967. The following year (1968) her mother suffered a stroke and she had to stop working, so she could take care of her sick mother. In 1969, her sister Evodia passed away and in 1970, she got married to David Mokgothu, the father of the child. They stayed with David's family in Middeldeel for a short period until they moved to Ramagari in the same year. In 1972, Susan was born and Alice, the last child, was born in 1975. Selina and her family then moved to Potsane in 1976. Sadly, two-year-old Alice passed away in 1977. During these years, Selina was not employed, but her husband worked at the Platinum mines in Rustenburg. She made an income through the crops that she planted and sold.

In 1988, her brother Hosea passed away and her mother followed in 1989. She went to work at the factories in Botshabelo in 1997 and was there for a year. In 1998 her sister Agnes passed away and four years later her other sister Sophia passed away. Her daughter Elizabeth also passed away in 2003 and the following year, in 2004, her husband, David, followed. Elizabeth left behind her son Evidence, who now lives with Selina. The family survives on her monthly pension and the crops she plants. She is very successful in agriculture and has been utilising the Infield Rain Water Harvesting technique since 2003. She attributes her success to the technique, which she says increases her yields and is better than the

conventional method that she had used for years before hearing about IRWH. She still sells some of her produce to her neighbours, but does this on a small scale. Apart from the crop production, she is involved in a chicken breeding project, where they breed chickens for eggs and meat. She also started Reikemetse (meaning, “we stand on our own” in Sesotho) Cooperative, a fruits and vegetable bottling business. In 2010, the Cooperative received funding from Old Mutual that enabled them to build a three-room brick house or factory for the storage and making of their products. Most of the projects in the village are run by females and they support each other a lot during times of need. Her daughter, Susan, also stays in the same village, but she has her own place where she lives with her three children. She has a strong relationship with her mom and they help each other a lot. The other person that helps her in times of need is her sister Anna, who stays in Botshabelo. The loss of many family members has affected her as she now has few people that belong to her social network.

Case study 2: Mary Magauta Nambane, resident of Potsane and member of Matangwana

Mary Magauta Nambane was born at Tiger River, another village in the Thaba Nchu area, in 1946. She is the daughter of Samuel and Letti Malao. She is the sixth of eight children (five boys and three girls). Four of her brothers as well as her mom and dad have passed away. Mary started school late at Tiger River (also known as Mokoto), and only studied up to Standard 4 (Grade 6), because she had to help her father in the fields. Soon after leaving school, she got married, at the age of 16. Their first child, Emma, was born in 1965, Mildred was born in 1968, Esther in 1970 and Shadrack in 1974. Webster was born a few years later. Mary was a homemaker who worked in the garden with her mother-in-law. In 1980, they relocated from Tiger River to Potsane. When she arrived at Potsane, she already had a driver’s license and she joined her husband in the taxi business, becoming a taxi driver. She was a taxi driver for 15 years, driving one of the taxis they owned. She was forced to take a break from driving taxis due to ill health and did not drive at all during the time. She started driving again after five years, but did not return to the taxi business as she only drove herself around. Her tuck-shop was already established and she was able to go buy the stock herself. The shop does not bring in a lot of money anymore and when she is not at the shop, she cares

for her chickens and pigs. The taxi business is managed by her husband and is still doing well.

Apart from the chicken she breeds in her yard, she is also part of a chicken breeding community project. She was part of a team that initiated the project and now about 15 cooperatives from Thaba Nchu and Botshabelo participate in the project. Fifteen chicken coops have been built outside the village with funding from SEDA (Small Enterprise Development Agency) and these will accommodate about 20000 chickens. However, funds have run out and they still need an abattoir, offices and staff to keep the place clean. Another need identified by Mary is security; there are no fences or electricity and water at the place, which they were promised. The women from the different cooperatives currently work different shifts daily, watching over the place. This is not safe for them. Another major concern is that they are not able to spend time with their families, as they always have to work at the stations without any benefit (payment). However, Mary mentioned that not everybody from her village is interested in taking part in the new project.

She has a garden in her shop yard, which is part of a project she was involved in with ten other people. The aim of the project is to feed children from poor families. The team used their own money to buy the nets and other things needed for the garden. However, like the other projects in the village, this one also failed, because of internal squabbles. She is now the only person taking part and still plants crops in the space at the back of her shop. She gives the crops to the primary school as well as needy people in the village, particularly elderly people. She often utilises the IRWH technique, but sometimes combines it with the conventional method.

Case study 3: Vuyelwa Manyashe, Headwoman of Potsane and member of Matangwana

Vuyelwa was born on 17 November 1977 at Moroka Hospital in Thaba Nchu. She is the eldest child of Magdeline and Zthembile Manyashe, who have both passed away. Her siblings, Thozamile and Nomvula, also live at Potsane. She started school at Nyakantsi Primary School in Feloane where she completed Grade 1 to 6, then went to Gaongalelwe Secondary School to do Grade 7 to 8 and completed Grade 9 to 12 at Goronyane High School. After matric, she went to the Academy of Learning in Bloemfontein to do a two-year computer course. She lived in Bloemfontein while studying and returned to Potsane when she

completed her course. Upon her return, she joined World Vision where she did training courses in leadership skills, home-based care, conflict and financial management. She acquired childcare skills and was elected to become the secretary of the clinic committee. In 2008, she became the headwoman of Potsane, a position she still holds today. She believes most people have stopped utilising the IRWH technique, because it is “complicated”. Many find having to measure the crop beds time consuming. However, there are people in the village who still utilise the technique, but many apply the conventional method.

Her network consists mostly of relatives, friends and acquaintances from the different associations she is involved in (e.g. the tribal council of Barolong boo Seleka and World Vision). These are people that she works with and exchanges information with regarding work-related matters. In her list, she also mentioned the deputy headman of Potsane who has to stand in for her when she is not available, the councillor of ward 43 and a teacher from the school her child attends. The most important people in her network are indeed her family and friends and she maintains frequent contact with them. She mentioned that they support one another a lot financially and emotionally.

Case study 4: Mmateboho Sara Mokoloko, resident of Potsane and member of Matangwana

Mmateboho was born at Blesbokfontein farm near Bultfontein in the Free State on 16 August 1967. She is the third of eight children (four males and four females). They were raised by a single mother and grandparents. Only one sibling has died. The rest of them and her mother live at Bultfontein. She completed Grade 1 to Grade 7 at a school at Kareepoort farm and Grade 8 at Repholositswe. After completing Grade 8, she got married to Pule Mokoloko from Botshabelo. She went to stay with him and his family in Botshabelo where she worked at the factories from 1990 to 1995. She then migrated with her husband to Potsane, because they wanted to practise crop production and breed livestock. They are both currently unemployed and generate an income from selling vegetables. They also have about ten sheep, six goats and two pigs. They have no children of their own, but live with her sister’s child.

Although most of her relatives are still in Bultfontein she maintains regular contact with them over the phone about three times a week and only manages to visit about two times a year. Her affinal kin is, however, closer and helps with some of her immediate needs. The relatives

in Bultfontein often supports her with food, money and clothing. In the village, she also has relatives who live very close to her and they support one another during times of need. Her neighbours are also helpful.

The case studies show the disparities of the majority of households in rural areas and the strategies they pursue in order to survive. Social networks are indeed one of the most important assets as they provide households with the necessary financial and emotional support. The people rely on the networks they have with relatives, friends, neighbours and other acquaintances for support, particularly during times of need. Elderly women, in particular, depend on their networks not only for immediate support, but also for the exchange of information. Information about development projects and other opportunities is always transferred through the networks. In both Potsane and Rietfontein the majority of the projects involve group participation, which enables the exchange of knowledge as well as the reduction of economic transactional costs. Networks also play an important role as they provide care and support for sick members or bereaved families. The strength of the networks is often enhanced by the frequency of contact and that is why most of the members of the networks are within the same geographical area. It becomes easy for members to access each other, particularly in times of difficulty. However, this is different with relatives, because regardless of whether they are far or near, people feel their relatives are the most important relationships they have. Loss of relatives or family members as evident in the case studies, therefore, renders a person vulnerable, as they do not have the immediate connection or support (e.g. the case study 2 of Selina Mokgothu). The bonds or connections with relatives, friends and neighbours are usually enhanced by long-term contact. In most cases, the relationships are generational and have been built over time. These relationships are usually solidified by trust and reciprocity.

The research also showed that sometimes the networks can become a burden, especially if there is no mutuality and one person keeps giving without receiving. This was also evident with some of the development projects where some members were always doing the work, but others only came when there was a reward or some incentive. The level of trust in such networks was broken and this influenced the ability of the people to cooperate with each other.

CHAPTER 5: CONCLUSION

The study investigated the socio-cultural dynamics and livelihoods in selected villages (Potsane and Rietfontein, Thaba Nchu) in order to gain an insight into the impact of the rainwater harvesting and conservation techniques (RWH&C) on sustainability and food security. The IRWH technique was introduced through the Rainwater Harvesting and Conservation project that began in 2003 and ended in 2011. The aim of the project was to enable households in the semi-arid town of Thaba Nchu (rainfall of about 500 mm per annum) to strengthen food security by producing sufficient food for own consumption and possibly for selling. Tests done over a period of 15 years showed a significant increase in yields with the use of the rainwater harvesting techniques, which led to numerous intervention projects making use of the technique²⁴.

The Thaba Nchu area comprises 42 villages that spread north and south of the business district. Municipal water is supplied to the rural villages with the purpose of only providing in the needs of the household and therefore most of the households are not able to utilise it for crop production. This lack of sufficient water for agricultural purposes is a central feature of poverty and it affects many of the livelihood strategies practiced in the rural areas that are dependent on water availability. The rate of employment in the area is low and thus, the majority of the households rely on social grants as the main source of income. Livelihoods are also supplemented through part-time employment and support from social networks (relatives, friends, neighbours and other acquaintances). The households, like many across the country, engage in multiple or diverse livelihood strategies for survival. Access to land for crop production and livestock breeding, however, is not a problem as the land is communal and divided to three categories of use residential, crop and grazing. The land in the rural areas of Thaba Nchu is under traditional jurisdiction, which is responsible for land use allocation and matters relating to land disputes. The traditional council, Barolong boo Seleka, under the leadership of the Moroka dynasty, consists of the chief, his advisors and 42 headmen (including a headwoman) responsible for the tribal affairs of the 42 villages they

²⁴ This masters study formed part of this extensive project funded by the Water Research Commission of South Africa.

represent. The villages also fall within the boundaries of the Mangaung municipal wards with a councillor and an executive committee. The two authorities do not necessarily work together, because traditional leaders have little authority in the municipality.

The study areas of Potsane and Rietfontein cover a total area of 970 hectares (30 ha for residential purposes, 110 ha for crop production and 830 ha for grazing) and 2 020 hectares (66 ha for residential use, 231 ha for crop production and 1 723 ha for grazing), respectively (Kundhlande *et al.* 2004). The human population in both villages is represented by about 167 households in Potsane and 150 in Rietfontein with an average of 4 people per household. The croplands in both villages have not been utilised for over 25 years and people prefer to plant in their backyards. Research from the Rainwater Harvesting and Conservation project has shown that households could upscale from the backyards to the croplands, because in some areas the soil is fertile and suitable for crop production. However, people in the villages have not moved back to the croplands as they lack other resources such as vehicles, fertilisers and most importantly, water. Water shortage is indeed a major challenge, particularly as much of the agriculture is rain fed.

In the analysis of livelihoods, Scoones (1998:3) mentions several important questions, for example, given a particular context such as that of Thaba Nchu (semi-arid area with a high population of rural inhabitants who are unemployed, have low levels of education and are mostly dependent on social grants),

what combination of livelihood resources (human, social, physical, financial and natural) result in the ability to follow what combination of livelihood strategies (agricultural intensification/extensification, livelihood diversification and migration) with what outcomes?.

To understand the livelihoods of the households and factors that affect them the research employed the sustainable livelihoods (SL) approach. The SL approach is holistic and identifies five livelihood assets (social, physical, natural, financial and human) that households need in order to secure and enhance their livelihoods. Rural areas are the major focus of sustainable livelihoods research and as such, the framework gives specific attention to the relationship between rural livelihoods strategies and the natural resource base, but does acknowledge that sustainability of livelihood strategies is dependent on access, use and

development of the five livelihood assets. The approach also recognises the need of putting people at the centre of development and instead of just focusing on the needs, the approach emphasises on building people's strengths. The aim of the overall Rainwater Harvesting project was to empower people with a new skill that in the long term will enable them to secure food security and sustain livelihoods. However, the socio-cultural dynamics within the villages had an influence on the sustainability of the project and practice of the rainwater harvesting techniques. The study focused only on two of the five assets, namely natural and social capital. Natural capital refers to resources that are provided by nature such as water, air and land while social capital is the social resources upon which people draw in pursuit of their livelihood objectives such as networks, membership to formalized groups and connectedness within. It is the most accessible asset for the poor and can be relied upon to mobilise the other assets.

The empirical research was mainly based on three objectives. The first was to describe the nature of local customs, norms, beliefs and knowledge involved in the use and conservation of natural resources. Secondly, to analyse how the innovations regarding RWH&C techniques have influenced the social relationships within the villages with specific attention to the nature and strength of social networks. The third objective was to determine whether households involved in the RWH&C project in the selected villages have the ability to sustain food security and alleviate poverty. With regard to the first mentioned, it was found that nature is very important and respected by the people of Potsane and Rietfontein as it provides households with the resources they need such as soil, sunshine, wind and water, particularly rainwater. Given that people relied heavily on rainwater, they had traditionally created various rituals and ceremonies related to water and rain to ensure supernatural blessing and sufficient food. Most of these practices were organised by the chief with the help of the rainmaker. Prayers and sacrifices were offered to the ancestors of the chief on behalf of his people. The people of Potsane and Rietfontein knew about some of these traditional practices, but do not actively practise many of the seasonal rituals any more. The reasons for abandoning and modifying these customs and beliefs are twofold: on the one hand, the Thaba Nchu area was under missionary influence for the past almost two centuries and on the other hand political change and migration has led to cultural transformation. The ceremony of *lesokoane* is one of the few customs regarding rain that is still practised in the Thaba Nchu area.

To conserve water, especially rainwater, people employ rainwater-harvesting techniques such as the collection of water from rooftops and road water harvesting by channelling rainwater into manmade pits. However, the pit system was discontinued in most villages as it posed a health hazard. To preserve soil fertility before planting, the soil is usually ploughed and mixed with natural fertilisers such as cow dung. These practices existed for many decades, but one cannot state with certainty whether they were introduced through diffusion or have been part of the original culture. Nonetheless, the communities are aware that resources are minimal and therefore they try to use them sustainably. The research also gives attention to whether the norms, customs and beliefs embedded in culture could have the potential to restrain or stimulate the decisions that people make about the use of certain natural resources or even participation in projects. It became evident that indigenous beliefs did not have any direct influence on participation in projects, because people are always looking for new ways of improving their livelihoods. Viljoen *et al.* (2012:62) conclude that, “communities are in such a need for new opportunities to improve their economic existence that they have no difficulty in integrating unfamiliar practices and in the process suppressing fears regarding clashing ideas”. This was certainly applicable to the people of Potsane and Rietfontein.

Using the ego-centred model, the empirical research focused secondly on the nature of social support as well as the strength and scope of the social networks. Within the project, some form of internal and external support was also provided through the Community Based Water Harvesting Interest Group, Municipal Based Water Harvesting Interest Group and extension officers. However, the CB:WHIGs, which were supposed to provide internal or micro-level support, were in fact inadequate and dysfunctional. Many of the associations were inactive and have been acting as a de-motivator when village members have to decide on participating in a project. Lack of skills training regarding the management of the association was another problem. Members of the executive boards (chairperson, deputy chairperson, secretary and treasurer) within the associations complained that they did not know exactly what was expected of them, as they did not have any job descriptions. Some of the people who had cancelled their membership also mentioned that constructing the crop beds using the IRWH technique was time consuming and difficult as it requires precision and long hours of work. It became evident that networks are important cultural mechanisms of support and connection. They are an accessible and inexpensive resource for the people at Potsane and Rietfontein, who depend on them for financial and emotional support in particular. However, they do not

rely on the networks in their everyday existence. Relationships with relatives, friends and neighbours are the most important.

The lack of trust, respect, cooperation and dependency on other members were identified as the main reasons for the failure of the associations. The challenges were not only limited to members within associations, but the leadership as well. Community members have lost faith in the leadership that they have elected and claim that their leaders do not have the interests of the community at heart. The traditional leadership in the villages, for example, knows about the project, as some of them were also members, but do not offer support to encourage members. The leaders acknowledged the lack of cooperation, but did not mention how cooperation could be enhanced. They identified this as one of the reasons preventing the success of development projects aimed at improving and sustaining livelihoods in the villages. When the project began, external support was provided, which included numerous capacity-building actions conducted with extension officers, training courses and workshops for the youth and households involved in the project (Backenberg 2009). Participants also received training for activities like the application of the IRWH technique, planting of various crops, fertilization, weeding, insect and pest control, harvesting and maintenance and they received implements (spades, wheelbarrows, forks and seeds) as well.

Households in both villages are able to sustain food security. Social networks are one of the strategies that they use to survive. The case studies not only showed how people depend on their social networks with relatives, friends, neighbours and other acquaintances for immediate needs such as food, money and clothing, but also for the exchange of information. Networks provide information about development projects and other activities that take place within the villages. In Potsane and Rietfontein examples include the chicken-breeding project, food bottling or *Reikemetse* (meaning, “we stand on our own” in Sesotho) Cooperative, *Itireleng* (“do for yourselves” in Setswana) project and Community Workers Programme (CWP). The projects are mostly funded externally and the majority are not only based in one village, but are regional. The chicken-breeding project (situated on the outskirts of Potsane, Bultfontein 1 and Thubisi), for example, was initiated by some of the members from Potsane. Currently, 15 cooperatives from different villages in Thaba Nchu and Botshabelo are involved. Each cooperative has its own station (coops) at the communal site, which are going to house 20 000 chickens in total. The members, who are mostly women,

have to work different shifts (day and night), because they do not have security guards. Most of them have complained that it is affecting family life, because they spend little time with their children and husbands. However, they are excited about the future (i.e. when they have enough chickens and eggs for selling). The projects contribute towards job creation and empowerment for the women. Food insecurity remains a critical problem in South Africa and the government recognises the importance of enabling people to feed themselves. However, many people are still unable to produce enough food for their households due to poverty. This research plays an important role across various disciplines. First, it provides micro-level information that can help policy makers formulate policies that will help to alleviate poverty and social development problems. It will also provide crucial knowledge that the Agricultural Research Council (ARC) and Water Research Commission (WRC) need in order to undertake future projects regarding food and water security. Only a few studies have been conducted using the SL approach in South African anthropology. Therefore, this study could be a valuable contribution within development studies. In anthropology, it is valuable as it focuses on a small local unit, namely the two villages of Potsane and Rietfontein at Thaba Nchu.

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