

UNIVERSITY OF THE FREE STATE

**FACULTY OF HUMANITIES
CENTRE FOR AFRICA STUDIES**

M.A. DISSERTATION

***THE INCORPORATION OF INDIGENOUS KNOWLEDGE IN LAND
REFORM PROJECTS: THE BASOTHO LETJHABILE AND MAOLOSI
TRUST AGRICULTURAL PROJECTS***



A research dissertation submitted in fulfilment of the requirements for a Masters Degree in Africa Studies with the Centre for Africa Studies, Faculty of Humanities at the University of the Free State.

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DEDICATION

This book is dedicated to the Akenji family for their moral, emotional and financial support throughout this study. To the Basotho Letjhabile and Maolosi Trust project members for their cooperation and support for the success of this research project. Their wonderful participation is making the struggle for the acknowledgement of their role in agriculture possible.

DECLARATION

I declare that **the Incorporation of Indigenous Knowledge in Land Reform Projects: the Basotho Letjhabile and Maolosi Trust agricultural Projects** is my own work submitted for the awarding of an MA Degree and has not previously been submitted by me at another university/faculty. I further cede copyright of the dissertation in favour of the University of the Free State.

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LIST OF ACRONYMS

CBO: Community-Based Organisation

DLA: Department of Land Reform

DME: Department of Minerals and Energy.

DOA: Department of Agriculture

IIRR: International Institute for Rural Reconstruction

IK: Indigenous Knowledge

IKS: Indigenous Knowledge Systems

LRAD: Land Redistribution for Agricultural Development

NGO: Non-Governmental Organisation.

NRF: National Research Foundation

NUFFIC: The Netherlands Organisation for International Cooperation in
Higher Education

PGC: Provincial Grants Committee

SADC: Southern African Development Community

UN: United Nations

USAID: United Nations Agency for International Development

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ABSTRACT

Indigenous peoples around the world have sought knowledge of physical reality throughout the ages. Their understanding of the physical universe is codified in their knowledge systems. However, often the content of agricultural information in less developed countries is devoid of inputs from the indigenous people. It is based on the need to modernise agriculture without consideration of the goals and strategies of indigenous people. Indigenous agriculture, however, as it was originally applied prior to colonisation and apartheid, as is the case with South Africa, can neither be fully resumed nor would it satisfy the world food needs and recession crisis of the ever-increasing world population. It will, however, if taken on a solemn note, have a significant impact on the world food production (World Bank 2005).

Despite the enormous value of IKS in the sustainable management of natural resources, the world has suffered and continues to suffer from a profound loss of indigenous peoples, rural groups, and their knowledge about the natural world, which has been constructed from their intimate ties to land and place. This loss has been accompanied by neglect and the marginalisation of their practices and beliefs often figured as inferior forms of knowing that should be replaced by universalised knowledge derived from the western scientific traditions (Hardison 2005).

This study is an exploration of how indigenous knowledge, which has been marginalised over the years, is incorporated in Land Reform Projects of agricultural development. It is an attempt to help indigenous people regain the value of their knowledge. Employing a multidisciplinary method, the work presents an analysis of indigenous knowledge practices in agricultural land reform projects (Basotho Letjhabile and Maolosi Trust), and how indigenous knowledge contributes to sustainability and transformation with these two community projects.

CHAPTER 1: SETTING THE SCENE

1. INTRODUCTION

Indigenous knowledge (IK) refers to intricate knowledge systems acquired over generations by communities as they interact with the environment. IK is the basis of local decision-making in agriculture, health, natural resource management and other activities. IK is embedded in community practices, institutions, relationships and rituals. It refers to a body of empirical knowledge and beliefs handed down through generations of long-time inhabitants of a specific locale, by cultural transmission, about the relationship of living beings with one another and their environments (Warren 1991). This study investigates how IK is incorporated or can be incorporated as the basis for decision-making in agriculture within the agricultural land reform projects of the Basotho Letjhabile and Maolosi Trust (Warren 1991), to ensure that the needs of the present generation are met without compromising the ability of the future generation to meet theirs (Brundtland 1987). The study rests on the belief that the way indigenous communities understand the physical universe is codified in their knowledge system and indigenous knowledge is an aspect of this knowledge system (IKS).

This chapter highlights what the study entails by stating the research problem; the purpose of the study; a working definition for the terms used within the study; an analysis of the problem from an international context and within a South African context; a brief description of both cases (Basotho Letjhabile and Maolosi Trust); the benefit of this study; and it also presents an outline of the dissertation.

1.1. Topic

The incorporation of indigenous knowledge in land reform projects (LRPs) regarding agriculture.

1.2. Research Problem

The research problem is to explore and describe the level and role of IK incorporation in the land reform projects (LRPs) of the Basotho Letjhabile and Maolosi Trust agricultural projects by means of comparative case study research.

1.3. Research Objectives

- Describe the level of success of the two selected land reform projects.
- Find out to what degree indigenous knowledge is incorporated in the selected case studies.
- Determine the role played by indigenous knowledge in the two selected case studies.

After looking at what this study entails, and what the study aims at exploring, it is essential to understand what defines the study. This study is within the context of indigenous knowledge and how it is perceived within two agricultural land reform projects. An understanding of how the term 'indigenous knowledge' is used within the context of this study is essential for a better grasp of the study.

1.4. WORKING DEFINITION OF INDIGENOUS KNOWLEDGE

According to NUFFIC and UNESCO/MOST (2001), the definition of IK differs depending on the case at hand and even on the specific aspect that the author would like to emphasise. Warren (1991) describes indigenous Knowledge (IK) as local knowledge that is unique to a particular culture or society. This indigenous knowledge is juxtaposed with the knowledge systems as generated by universities, research institutions and private firms. IK forms the foundation for decision-making in agriculture, health care, food preparation, education, natural-resource management, and an array of other activities of rural communities. Indigenous knowledge plays a crucial role in forging a sense of togetherness and interdependence among community

members. Indigenous knowledge and its systems, put together, can be of great significance to the social capital of a community if it is sustainable.

The World Bank (1998) views IK as a key element of the social capital of the poor, their main asset to invest in the struggle for survival to produce food, to provide for shelter or to achieve control of their own lives. Social capital in this case is referred to as features of social life-networks, norms and trust that enable community members to act together more effectively to pursue shared objectives (Baron *et al.* 2001). Knowledge refers to what one knows and understands. The basic component of the knowledge system for indigenous people is their indigenous knowledge. IK is knowledge that grows within social groups (such as the Basotho Letjhabile and Maolosi Trust), incorporating learning from own experience over generations and also knowledge gained from other sources and fully internalised within indigenous ways of thinking or doing (World Bank 2005, Warren 1991).

The current concern regarding indigenous knowledge may seem as though there is a problem, but is it that these systems have been lost or partly forgotten and special effort is needed to retrieve them? The answer is no, they have not been lost, for example, in agriculture where agricultural practices heavily rely on indigenous knowledge, sometimes proving to be more productive than imported techniques. IK has therefore not been forgotten; it is widespread, though probably less so than it was in pre-colonial times (Hountondji 2002).

In post-apartheid South Africa there are various forms of cultural heritage with different purposes stemming from a multitude of cultural grounds (Dondolo 2005). The apartheid era in South Africa saw the movement of people from one region to the next. These movements were associated with the search for jobs as labourers on farms or as mineworkers. There were also forced movements and the alienation of indigenous communities from their land for the creation of land that served commercial agrarian production (Chigara 2004). Indigenous knowledge in this study is therefore not regarded

as static and not confined to the “original” inhabitants of an area. IK is based on the following characteristics:

- It is locally developed and is developing;
- It is based on experience;
- It involves trial and error knowledge that is passed along generational lines;
- It constitutes part of local culture;
- It is transferred orally; and
- It is dynamic changing with the times.

Indigenous knowledge is a key element of the social capital of indigenous communities. It is therefore essential to engage with these communities on their indigenous knowledge systems (IKS). This is done by helping them identify their indigenous knowledge used within both projects.

As a working definition for this study, indigenous knowledge is regarded as knowledge unique to a particular culture or society. IK is the foundation for local decision-making in agriculture, health, natural resource management and other activities. IK is embedded in community practices, institutions, relationships and rituals and provides the basis for problem-solving. It is orally transmitted, based on experience, learned through repetition, constantly changing, and passed down from one generation to the next. Local knowledge is considered part of indigenous knowledge.

1.5. INTERNATIONAL CONTEXT ON LAND REFORM

For a better understanding of the issue of land reform in South Africa, it is essential to understand the different land reform efforts around the world. For vastly different reasons, numerous states in Asia, Africa, and Latin America pursued land reform programmes in the developmental moment between 1950 and 1970 (Bernstein 2002). Land reform and agrarian reform are often used interchangeably. Agrarian reform is a construct of the Cold War to

counter 'communist' land reform and it embraces improvements in both land tenure and agricultural organisation (Hayami *et al.* 1992).

In the modern world and the aftermath of colonialism and the Industrial Revolution, land reform took place around the world: from the Mexican Revolution (1917; the revolution began in 1910), Communist China, Bolivia (1952, 2006) to Zimbabwe and Namibia. Land reform has been especially popular as part of decolonisation struggles in Africa and the Arab world, where it was part of the programme for African and Arab socialism (Bernstein 2002). Looking at land reform in different parts of the world will provide valuable insight into the different causes of this reform. This study looks at land reform from the point of **decolonisation, communism, and political regime change, and class and tax injustice**. Only specific countries with the most significant land reform cases will be mentioned.

1.5.1. Decolonisation

Since independence, landholdings in Southern Africa have remained highly unequally divided between the rich and poor, reflecting the land and agricultural policies adopted during colonial times and after independence (Fortin 2005). In Namibia, a land crisis originated in the early colonial period when German administration assumed control of virtually all the arable and grazing land on the southern plateau and created 'native reserves' for Blacks. The apartheid government of South Africa then assumed control of Namibia in 1915 and ruled the country until independence in March 1990. Namibia, like South Africa four years after its independence, carried out limited land reform as a hallmark of the regime of Sam Nujoma. Land reform legislation was passed in September 1994 based on a compulsory compensated approach (Forrest 2000).

In Kenya, a former British colony, land reform took another form than that carried out by former British colonies in the SADC region. In the 1960s, Kenyatta launched a 'willing buyer-willing seller' based land reform programme funded by Britain, the former colonial power (Bloom 1985). On the other hand, Zimbabwe, another British colony, moved from the 'willing seller-

willing buyer' approach to the 'fast track' land reform programme in the 1990s under Robert Mugabe after 15 years of independence. This was accelerated by 'popular seizure' led by machete gangs of 'war veterans' associated with the ruling party. The several forms of forcible change in management caused a severe drop in production and other economic disruptions. This is even evident today, given the serious economic crisis in Zimbabwe. Land reform in Zimbabwe is an example of a negative impact of land reform (Chigara 2004; Nmoma 2008).

In Latin America, unlike Europe and Asia, where there has been a broad tradition of small-farm ownership, the monopoly of land ownership stemmed from colonial rule, either from the subjection of the indigenous population, or the use of imported slaves on plantations (De Janvry and Ground 1978; Ondetti 2007). From 1910–1990, Latin American countries attempted an enormous variety of land reforms. The United States backed the Alliance for Progress land reform in Latin America as a way to stamp out the threat of communism (Davis and Wali 1994). Latin America and South Africa are considered to be strikingly similar, for example, as they contain highly unequal societies, have achieved middle-income development status and are highly urbanised (Gilbert and Crankshaw 1999).

1.5.2. Communism

To prevent the advance of communist revolution and to break up feudal estates after World War II, land reform was carried out in Asia. The ascendancy of communism has been accompanied by a series of land reforms in China. In the 1940s, the Sino-American Joint Commission on Rural Reconstruction, funded with American money, with the support of the national government, carried out land reform and community action programmes in several provinces. In the mid-1950s, a second land reform during the *Great Leap Forward* of 1958 as Mao's attempt to modernise China (Shih 1994: 273) compelled individual farmers to join collectives, which, in turn, were grouped into People's Communes with centrally controlled property rights and an egalitarian principle of distribution. This policy was a failure in terms of production. A third round of land reforms began in the late 1970s and re-

introduced the family-based contract system called the Household Responsibility System, which had enormous initial success, followed by a period of relative stagnation (Zhang and Pearlman 2004; Stavits 1978).

1.5.3. Political Regime Change

As mentioned earlier, a change in the apartheid political regime in Namibia in the 1990s resulted in land reform in 1994 with Sam Nujoma as President (Forrest 2000). Regime change is significant in land reform for most Latin American countries. In Bolivia, the revolution of 1952 was followed by a land reform law, but in 1970 only 45% of peasant families had received title to land, and more land reform projects continued in the 1970s and 1980s. When Evo Morales took office as President in 2006, he instituted another agenda of land reform. A bill was passed authorising the government redistribution of land among the nation's mostly indigenous poor (Ondetti 2007). In Chile, attempts at land reform began under the government of Jorge Alessandri in 1960, and were accelerated during the government of Eduardo Frei Montalva (1964–1970), and reached its climax during the 1970–1973 presidency of Salvador Allende (Bossert 1980).

In early 1956, Syria joined Egypt in forming the United Arab Republic under the leadership of President Nasser. One of the major consequences of this land reform was the introduction of a land reform programme in 1958. Following Syria's break away from the United Arab Republic in 1961, the conservative government of Marouf took over and revised the land reform law to correct several inequalities perceived in the 1958 law. Land reforms in Syria led to increased agricultural output (Keilany 1980; Jreisat 2006). Political regime change has also influenced agricultural land reform in South Africa. After the end of apartheid in 1994, a new democratic government formed under the ANC with Nelson Mandela as President, and land reform was introduced as a means to redistribute land to the landless black majority (Bernstein 2005).

1.5.4 Class and Tax Prejudice

The history of all hitherto existing society is the history of class struggle.

Karl Marx and Friedrich Engels (1998: 8)

Historically important sources of pressure for land reform have been the accumulation of significant properties by tax-exempt individuals or entities. In ancient Egypt, the tax exemption for temple lands eventually drove almost all the good land into the hands of the priestly class, making them immensely rich, but starving the government of revenue (Margold 1954). In Rome, the land tax exemption for the noble senatorial families had a similar effect, leading to Pliny's famous observation that the *latifundia* (vast landed estates) had ruined Rome, and would likewise ruin the provinces. This has frequently been true of churches and monasteries in the Christian world, a major reason why many of the French revolutionaries saw the Catholic Church as an accomplice to the landed bourgeois (D'Aragona 1954).

In the Muslim world, land reforms such as that organised in Spain by al-Hurr in 1718 transferred property from Muslims to Christians, who were taxable by much higher rates (Hajrah 1982). Lithuania also carried out a class redistributive land reform. Land reform was initiated in 1919 and was fully launched in 1922. Excess land was taken from the major landowners, mostly aristocracy, and redistributed among new landowners, primarily soldiers or small landowners (Senn 1958). In Scotland, the *Land Reform (Scotland) Act* of 2003 ended the historic legacy of feudal law and created a framework for rural or croft communities to be able to buy land in their area (Brown 2008). Historically, race as a class distinction has also influenced land reform, for example, in Latin America and most countries in the SADC region, with South Africa as a major example with land reform involving the transfer of land from minority white farmers to blacks (Beinert 1994, Chigara 2004, Bernstein 2002, De Janvry and Ground 1978).

To sceptics, these 'reforms' merely served to modernise labour contracts, rather than redistribute land. On the other hand, detailed production data collected in Chile, in the period 1965–1970, regarding land reform settlements

on expropriated land as well as on portions retained by landowners, showed significant increases in output per hectare (Thiesenhusen 1974). While most agendas of land reform are concerned with restoring some level of autonomy and cultural identity to indigenous people, the 'revolution' in South Africa is significantly aimed at overturning 300 years of dispossession and suppression by a white minority (Chigara 2004).

Chigara (2004) argues that before colonisation, the relationship of indigenous people to their environment was summed up by the philosophy of common heritage *humwe* (literally translates to "us all" in *Shona*), where every member of a tribal group was presumed to have an inherent right not only to earn a living off the land, but also to be supported by his kinsmen in his effort to live off the land. Therefore, despite the dispossession and suppression, indigenous South Africans still have a spiritual link to the land.

1.6. SOUTH AFRICAN CONTEXT ON LAND REFORM

Chigara (2004) argues that inequitable land distribution is typical of all former British colonies in the SADC. South Africa, the SADC's wealthiest nation, famous for its exceptional natural resources and infamous for apartheid until the institution of majority rule in 1994, is no exception. South Africa has a population of approximately 47, 8 million people (Statistics South Africa 2008). 85% of South Africa's commercial farmland is still under the ownership of 60 000 white commercial farmers, indicating a current lack of black commercial farmers. Land reform therefore has yet to facilitate the entry of significant numbers of indigenous citizens into the commercial farming sector (Beinert 1994). Under the apartheid governments in South Africa, legislation was passed that ensured and consolidated social, cultural, residential, economic and political segregation of blacks from whites through the classification of the population into the racial categories of White, Black and Coloured (Chigara 2004).

Beinert and Delius (1986) write that no other country on the African continent has experienced such systematic and comprehensive displacement of the indigenous population as was the case in South Africa. In South Africa, as a result of displacement, the indigenous population was reduced to eke out a livelihood as wage labourers. Some apartheid laws prevented the indigenous population from owning land and rendered them wage earners dependent on the white farming community. In the development of colonial rule, legislation was passed that inhibited the development of an African peasantry (Chigara 2004). British Colonial Rule also introduced the idea of private land ownership, which was contrary to the traditional African notion of land ownership prevailing at the time, namely land as a communal resource (Hendricks 1989-4).

According to the *Native Service Contracts Act of 1932*, all Africans not already confined to reserves were drawn into the agricultural economy. This was done through the extension of existing labour controls, which on the one hand prohibited the growth of an African peasantry and on the other hand, fostered Africans' dependency on wage earning for the discharge of government taxes. The Act enabled the farmer to expel the entire family if any one member defaulted on his/her labour obligation, and to whip tenants as well as compel farm tenants to carry legal passes (Chigara 2004; Ramutsindela 2001).

The *Native Trust and Land Act of 1936* formalised separation of black and white rural areas. It established a South African Native Trust (SANT), which purchased all reserve land not yet owned by the State and took responsibility for administering African Reserve areas. The remainder of land under black ownership in so-called 'white' South Africa was labelled "black spots" for State takeover, and the occupants were dumped into reserved areas (Ramutsindela 2001).

Bernstein (2002), in providing a historical overview of land reform, traced the transition from the state-led development perspectives of the 1950s to contemporary land reform since 1996, and describes it as a "new wave" of agrarian reform in the age of neo-liberalism. He shows how the end of the

developmental era also marked the cessation of major redistributive land reforms. This is evident when the post-apartheid government “promised” to redistribute 30% of South Africa’s agricultural land by 1999. The South African Land Reform Programme is based on three sub-programmes: Land Redistribution, Land Restitution and Land Tenure. Each sub-programme is designed to serve different purposes with different objectives (Ramutsindela 2001) and will be discussed later in this study.

According to the White Paper on the South African Land Policy of 1997, **land redistribution** aims to provide the disadvantaged poor with access to land for residential and production purposes. Its scope includes the urban and rural poor, labour tenants, farm workers as well as new entrants into agriculture.

Land restitution covers cases of forced removals that took place after 1913. A Land Claims Court is dealing with these cases and a Commission established under the *Restitution of Land Right Act, 22 of 1994*.

Land tenure reform is addressed through a review of the present land policy, administration and legislation to improve the tenure security of all South Africans and to accommodate diverse forms of land tenure, including types of communal tenure. The agricultural projects of the Basotho Letjhabile and Maolosi Trust are projects of the Land Redistribution for Agricultural Development by the Department of Land Affairs (LRAD).

“The worldwide renaissance of indigenous knowledge coincides with the breaking of the yoke of apartheid in South Africa and the investiture of a new political indulgence.” (Payle and Lebakeng 2006: 6) With the land redistribution for agricultural development as one of the main products of induction, it is worthwhile to explore whether IK is incorporated in these programmes, and if that is the case, describe the nature of the incorporation.

Against the background of challenges facing indigenous knowledge and its application generally and in South Africa in particular, the questions that will guide the objectives of this study are:

- What is land reform?
- How is indigenous knowledge incorporated in the Land Redistribution for Agricultural Development programme (LRAD)?
- How can the incorporation of indigenous knowledge in LRAD programmes contribute to sustainable development and transformation?
- How do people identify and relate to their indigenous knowledge?

Ndhlovu (2004) argues that for meaningful development to take place in Africa, traditional social practices must become a central concern in the changes taking place, whether they originate internally or externally. Hence, to understand effective land use, views on the need and land utilisation patterns must be taken into serious consideration through a detailed understanding of the people's indigenous institutions.

1.7. INTERNATIONAL CONTEXT OF INDIGENOUS KNOWLEDGE

Grenier (1998) argues that international interest in indigenous knowledge has emerged in tandem with the politicisation of indigenous groups and indigenous-rights movements. Indigenous people worldwide are demanding the right to be heard in development decisions. The demand for rights to land and resources to be recognised and officially acknowledged are prominent. Some governments such as those of Australia, Canada, Greenland and the United States have mechanisms such as Settled Land Claims and Co-Management Resource Boards that support IK systems. Development practitioners have noticed that development efforts that ignored indigenous circumstances, indigenous technologies, and indigenous systems of knowledge have wasted enormous amounts of time and resources (Grenier 1998).

Increasingly, development practitioners argue that paying attention to indigenous knowledge can (Grenier 1998):

- Create mutual respect, encourage local participation, and build partnership for joint problem resolution;
- Facilitate the design and implementation of culturally appropriate development programmes, avoiding costly mistakes;
- Identify techniques that can be transformed to other regions;
- Help identify practices suitable for investigation, adaptation and improvement; and
- Help build a more sustainable future.

In recent times, much is being written on the uses of indigenous knowledge in development projects and its contribution to transformation in so many communities and countries world-wide. For example, after fifteen years of civil war, community leaders in Mozambique reportedly managed about 500 000 informal “land transactions” and helped in the settlement of about five million refugees and displaced persons in two years. This was achieved through the traditional authorities’ reliance on indigenous customary laws (Gorjestani 2000). Farmers in Niger have used their indigenous knowledge of the Neem powder over the years as an effective crop insecticide for grasshoppers (Warren *et al.* 1995). There has been increased international interest in the significance of IK in various fields such as agriculture, medicine and healthcare, education, social issues, politics and economics (Mosimege 2005).

1.8. THE SOUTH AFRICAN CONTEXT OF INDIGENOUS KNOWLEDGE

After 1994, IK became a critical component in the restructuring and democratisation of South African Science and Technology. The first National workshop on IK in South Africa was held in 1998 under the auspices of the Portfolio Committee on Arts, Culture, Language, Science and Technology (Nel 2005 and 2006; Masoga 2005). Dr Serote, who is regarded as the

leading spirit in the revival of IK in South Africa, provided a definition of IK by arguing that “emanating from the human spirit are life experiences organised and ordered into accumulated knowledge with the objective to utilise it to the quality of life and to create a liveable environment for both human and other forms of life” (Serote 2004: 17).

Masoga (2005: 20) provides an explanation of Serote’s definition by arguing that “this definition is useful in defining indigenous knowledge in the context of *utilitarianism* and creative force with the objective of ensuring that IK provides an all-inclusive well-being for both humans and other forms of life.” Former South African President, Thabo Mbeki (Mail and Guardian 2003: 36) also pointed out the significance of indigenous African knowledge systems in the production of knowledge by stating that “... the generation of new knowledge needs to be preceded by an opening of the African door to the world of knowledge, to elevate Africa’s place within the universe of research, the formation of new knowledge, education and information.”

After the First National Workshop on IK, various articles, research reports and journals have been written on IK in South Africa with the increased importance of the identification and preservation of IK. This study will therefore serve as a source for the identification and preservation of IK in South Africa. An example of the use of IK in South Africa is the indigenous practice of older ‘Coloureds’ in the Western Cape Province of South Africa who use indigenous plants such as the Wildeals (*Artemisia afra*) and Buchu (*Species of Agathoma*) for medicinal purposes (Normann *et al.* 1996).

1.9. CONCEPTUALISATION

In order to guide the analysis and for the purpose of clarification, a number of key concepts will be defined. The purpose of defining these concepts is to clarify the context in which these concepts are applied in the study. The conceptualisation of terms will define terms such as indigenous, knowledge, land reform projects, development, transformation, sustainability and agriculture as used within the study.

1.9.1. Indigenous

Indigenous is synonymously used with *local* in this study, produced or developed within a specific region (territorial references), in other words, not imported or exotic (Matsela 1979). The term indigenous is preferred to 'traditional' because the former includes the latter (which is limited to the reference of information passed orally or by example). Rodriguez-Navarro (2000: 456) defines the term *tradition* as a way of thinking, behaviour or practice that is followed by a group of people from one generation to the next as something they value, something that works for them or makes their life meaningful in the physical context in which they live. The National Research Foundation (NRF) refers to *indigenous* as "populations and communities indigenous to a particular geographic area" (Loubser 2005: 75).

1.9.2. Knowledge

In cultural-constructive theory, to be is to know. To know is to become mindful of something, or have a concept of it, in the mind, through seeing and hearing, and through reading in literate societies. The word 'knowledge' has various connotations such as 'facticity', certainty, and truthfulness, but what passes as knowledge may not always have all or any of these qualities. Ngulube and Lwoga (2007) argue that knowledge, which is the way people understand the world, and interpret and give meaning to their experiences, has widely been acknowledged as one of the most important factors for sustainable development.

Bhola (2003) says there will always be a dialectic between the individual construction of knowledge and the social construction of knowledge since we come into the world where knowledge of the world has already been constructed by the social organisations in which we are born: the family, the community, the ethnic group, and the larger culture. Knowledge in this study is used with reference to the social construction of knowledge, which may be embedded in the customs, habits, rituals, and social institutions of the community.

1.9.3. Land Reform

In South Africa, land reform is an attempt to change the land policies of the past, which were brought about by colonisation and apartheid. During the apartheid era in South Africa, land policies were racially based, leading to insecurity, landlessness, and poverty amongst black people. In post-apartheid South Africa, land reform policy is aimed at:

- Redressing the injustices of apartheid;
- Fostering national reconciliation and stability;
- Underpinning economic growth; and
- Improving household welfare and alleviating poverty (Chigara 2004: 18).

Land reform is thus essential for sustainable growth and development in South Africa.

1.9.4. Development

The word *development* is most commonly used to refer to economic growth in terms of the gross domestic product (GDP). However, development is more than economic growth, because it is both a physical reality and a state of mind (D'Hease and Kirsten 2006). Todaro (1997: 18) associates the following objectives with development:

- To increase the availability and widen the distribution of basic life-sustaining goods such as food, shelter, health and protection;
- To raise standards of living, including higher incomes, more jobs, better education and a greater attention to cultural and humanistic values; and
- To expand the range of economic and social choices available to individuals and nations by freeing them from servitude and dependence.

Blaser *et al.* (2004) point out the relation between indigenous knowledge and development. They say indigenous lives and projects have never been pursued in a vacuum; they can only be pursued amidst other projects. If the relations between different projects were more or less equal, the broad cultural value and the visions of both indigenous peoples and developers would each find common ground. Development within the context of this study is used to refer to both physical reality and a state of mind.

1.9.5. Transformation

Transformation is “an act, process, or instance of change in structure, appearance, or character. It is a conversion, revolution, makeover, alteration, or renovation.” (Webster 1961: 220) Transformation is used within this study as an aspect of change. It refers to the process of change in structure, lifestyle, and social and economic status and also a change in mind-set.

1.9.6. Sustainability

The term *sustainability* is referred to as “the capacity to persist and to be robust and resilient” (Huckle and Sterling 1996: 3). Atkinson *et al.* (2007: 4) stress the term *sustainability* in their explanation of sustainable development. They say the term *sustainability* is often used interchangeably with *sustainable development*. Sustainability is a participatory process that creates and pursues a vision of community that respects and makes prudent use of all its resources – natural, human, human-created, social, cultural, scientific, etc. Sustainability seeks to ensure that present generations attain democracy and popular participation in control of their communities, while maintaining the integrity of the ecological systems upon which all life and all production depends. The current generation must take responsibility for future generations so that their expectations and needs can be sustainably met with the hope that they have the wisdom and intelligence to use what is provided in an appropriate manner (Viederman 1994).

1.9.7. Agriculture

Agriculture is the science or business of raising plants and animals useful to man. It implies the cultivation of soil, the production and harvesting of crops, the care and breeding of livestock. Agriculture refers to the production of products through the growing of plants and the raising of domesticated animals.

1.9.8. Indigenous People

The World Bank (1991) views indigenous people as social groups with socio-cultural identities distinct from the dominant societies that are more vulnerable to being marginalised by the development process. Melchias (2005) argues that indigenous people are culturally distinct ethnic groups with a different identity from the national society. They draw existence from local resources and are not politically dominant. Indigenous people and their communities are historically linked to their lands through their ancestors who originally inhabited the land (Boon and Hens 2007). In this study, indigenous people are defined in terms of the knowledge they hold and their historical relationship with land, which is not necessarily based on their link with the original inhabitants of their current land.

1.10. OUTLINE OF THE DISSERTATION

Chapter One provides the background to the study from an international and South African perspective. The chapter provides an explication of pertinent terms as used in the study, a brief history of both cases (Basotho Letjhabile and Maolosi Trust) and the value of the study.

Chapter Two focuses on the review of scholarships by looking at different definitions of the term *indigenous knowledge*. It also highlights the difference between indigenous knowledge and indigenous knowledge systems and the link between IK and IKS. Scholarship on sustainable development and transformation is also discussed. Literature on the different types of agriculture practices and the different agricultural activities in South Africa is

provided to give a picture of the South African agricultural sector of which these projects form part.

Chapter Three discusses land reform in South Africa in terms of the overarching South African Land Reform Programme, its associative sub-programmes, and the process involved in the application for the grant of the Land Redistribution for Agricultural Development (LRAD). This gives us a picture of how these projects under study, i.e. the Basotho Letjhabile and Maolosi Trust, were developed.

Chapter Four explains the research design and methods of data collection; a description of the study population; data-collection techniques; data analysis; the expected outcomes, and the study assumptions. This chapter directly informs Chapter Five.

Chapter Five contains the data presentation and analysis. It provides a thematic analysis of data acquired from the cases, i.e. the Basotho Letjhabile and Maolosi Trust projects, within and across both cases. The results are further interpreted in terms of the literature discussed.

Chapter Six provides concluding comments regarding the study; proposes a way forward and discusses recommendations, limitations to the study, challenges faced when carrying out the study; and a proposed fieldwork methodology.

1.11. HISTORICAL INFORMATION

To gain a clear understanding of this study, it is necessary to acquire a brief history of the projects.

1.11.1. Basotho Letjhabile

The name Basotho Letjhabile (according to its members) comes from the Sesotho language which means 'it has dawned'. Sesotho is the language and custom of the Basotho people who live in South Africa and Lesotho.

Sesotho as a language is a member of the Bantu language group of African languages, and it is a very close relative of Setswana (spoken by the Batswana in Botswana), Sepedi (spoken by the Bapedi in Northern Transvaal, South Africa) and Lozi (spoken by the Balozis of Zambia) in terms of its linguistic forms. Although 'Sesotho' is generally used to refer to the language of the Basotho people, it also includes their general culture in its wider meaning (Lye and Murray 1980).

The **Basotho people** have lived in Southern Africa since around the fifteenth century. The name is derived from the Caledon River – the 'dark-brown river'. The Basotho nation in modern Lesotho emerged from the accomplished diplomacy of Moshoeshoe I who amalgamated disparate clans of Sotho-Tswana origin fleeing from Zulu and Ndebele raids and had dispersed across Southern Africa by the early 19th century. Today most Basotho today live in South Africa. Moshoeshoe is regarded as the father of the Basotho people (Lye and Murray 1980).

Basotho Letjhabile, 'it has dawned', as referred to by the project members, came with the dawn of the independent South Africa. The project members see themselves as part of this dawn and count themselves among those who can provide for themselves. They assume that the freedom the Basotho Nation has come. The ancestors of the project members were farmers and the project members see an interconnectedness between the activities of their ancestors and with what they do. This is manifested in their numerous indigenous practices such as the treatment of animal diseases and offering of sacrifices to their ancestors as found in this study.

Basotho Letjhabile is an agricultural project, which started in 1999 with approval of the Department of Land Affairs (DLA) in 2003. It is an agricultural project with 36 beneficiaries who, during the apartheid era in South Africa, were labourers on a white-owned farm. The previous farmer was relocating to Cape Town and wanted to settle his workers. He asked the labourers whether he should provide them with monetary compensation or help them in purchasing the farm from the government. With strong

encouragement from *Ntate* Clement, one of the project members and project leader, and in consultation with the previous owner, the project members chose to own the farm. With support from the Department of Land Affairs in 2004, they obtained a grant of R1 393 294,00 and bought the farm for R1 215 000,00.

Basotho Letjhabile is an agricultural project where the project members are engaged in mixed farming activities including crop cultivation and livestock tending. While working as labourers on the farm, the project members gained different skill sets such as using and driving tractors, cattle tending and so on. They also receive regular aid from another farm owner (Nico Marais) in the form of advice and the provision of fertiliser during periods of drought.

The project members have as their objectives to:

- Raise income from the sales of their produce such as maize, meat, milk, sunflower, etc.;
- Educate their children from the proceeds made from sales;
- Use their produce as a means of subsistence for their families; and
- Prove to the world that Black commercial farming is possible with the use of their indigenous knowledge – knowledge inherited from their ancestors.

The project benefits the community at large and the neighbouring communities who buy their produce.

1.11.2. Maolosi Trust

According to its members, the name Maolosi comes from the Setswana (Tswana) which means ‘the shepherd’. The Tswana, numbering 4,1 million, live in a grassland environment in which they raise livestock and grow corn and sorghum. They live mainly in the Northern Cape Province, North West

Province, the central and western Free State and in neighbouring Botswana (Lye and Murray 1980).

Maolosi is an agricultural project, which started in 1999 and was approved by the Department of Land Affairs (DLA) in 2003. It is made up of seven members of the same family. They are farmers and own another farm near Bultfontein in the Free State. In 2004, they obtained a grant of R319 381,00 from the Department of Land Affairs to buy their farm valued at R275 000,00. They also received limited financial aid in the form of micro loans from First National Bank (FNB), as well as advice and material aid such as fertiliser from the previous landowner.

Maolosi, as an agricultural project, involves mixed agriculture including crop and livestock farming, with the possibility of salt production. The project members do not see any link between their practices and those of their ancestors, although they use indigenous as well as local knowledge (area-specific but not necessarily indigenous) in their activities within this project, for example in the exploration of salt production, choice of livestock, weather forecasting and pest control.

The project members sell their crops such as maize and sunflower to **SENWES**. *SENWES* is a diversified agri-business that provides agricultural production inputs, market access to agricultural products and value-added services to its customers.

Their main aims of this project are to:

- Make a living out of their crops and sales; and
- Create jobs for community members.

1.12. VALUE OF THE STUDY

1.12.1. To Project Members

The ability of identifying one's potential may boost self-confidence and development. The ability to use their indigenous knowledge to achieve sustainable development and transformation will help the project members to recognise their potential and the value of their own indigenous knowledge. This study is also of great importance to the project members, since the documentation of the community's indigenous knowledge can act as a measure of protection and preservation. This study is community focused and can serve as catalyst for community empowerment/developmental initiatives towards effecting positive and sustainable change in communities.

1.12.2. To Future Researcher(s)

Bearing in mind that IK study cuts across various disciplines, be it social, human or natural sciences, there has not been a standardised methodology for IK studies and related fieldwork developed to date. The methods used in collecting evidence for the study may be useful in future for the construction of an IK methodology and standardised fieldwork manual. This study may also contribute as a source or a theoretical background for further studies in these communities or any other developing community dependent on indigenous knowledge.

1.12.3. To the Department(s) of Land Affairs and Agriculture

This study could be a source of information for the Department of Land Affairs, Agriculture, the local municipalities and other land reform projects of the significant impact that indigenous knowledge could have when taken into serious consideration in the operationalisation of land reform projects (LRPs). Therefore, it can serve as reference in the planning and decision-making of these departments.

1.13. CHAPTER SUMMARY

This chapter illustrated that the issue of land reform is not only a South African issue. Land reform has been carried out worldwide. Land reform, no matter where it is carried out, has been viewed as a measure to redress the exploitation of indigenous people. Colonisation and apartheid, in the case of South Africa, are some of the major causes of exploitation of indigenous people. It also highlights land redistribution, land restitution and land tenure, as the three main land reform efforts in South Africa. This chapter has also indicated a growing worldwide interest in the role of IK in sustainable development. In South Africa, apartheid laws of forced removal and separate development have contributed adversely by displacing communities from areas where they have, over decades, invested in developing a rich capital of indigenous knowledge (Odora Hoppers 2002).

IK is also appreciated as a critical component in the restructuring and democratisation in post-apartheid South Africa. The two cases (Basotho Letjhabile and Maolosi Trust) are presented as products of the restructuring and the democratisation of post-apartheid South Africa. The members of the two cases (Basotho Letjhabile and Maolosi Trust) are regarded as indigenous South Africans who were marginalised by the restrictive laws of the apartheid regime.

CHAPTER TWO: REVIEW OF SCHOLARSHIP

2.1. INTRODUCTION

This chapter provides a review of relevant literature from different scholars. The literature includes various definitions on IK, the importance of IK in the global context, as a national and community resource, and as an asset to the poor. This chapter also includes literature on sustainable development and transformation as well as their relationship with IK. To better understand the different types of farming practised by the projects (Basotho Letjhabile and Maolosi Trust), this chapter also provides a brief explanation of the different farming sectors in South Africa and the different types of agricultural practices in the world. This chapter also provides literature on some of the possible challenges one may encounter when working with indigenous knowledge.

2.2. TOWARDS AN UNDERSTANDING OF INDIGENOUS KNOWLEDGE

Most people assume that the terms 'indigenous' and 'traditional' denote the same concept. Sillitoe (2000) views the term 'indigenous' as synonymous with 'traditional' and 'local', differentiating this type of knowledge from that developed by formal science at institutions such as universities and government research centres. The terms 'indigenous' or 'traditional' are problematic in the African and other contexts, where attempts are made to preserve and protect indigenous resources. People find it difficult to differentiate between what is indigenous and what is traditional. This study refers to the term 'traditional' as the handing down or transfer of traditional knowledge (TK); therefore, knowledge passed on from one generation to another, usually orally (Kawooya 2006).

This point is further stressed by Sillitoe *et al.* (2005: 2) that "the term 'indigenous knowledge' (IK) is by no means clear, particularly at this time when its use is growing rapidly in development circles." There is a wide range

of alternatives used by different writers as they argue over the content of, and approaches to this field. Nonetheless, they all share a certain common semantic load and address the same broad issues. They relate to any knowledge held collectively by a population, informing their interpretation of the world. Figure one (1) below tries to bring out the differences between the semantic and conceptual definitions of indigenous knowledge.

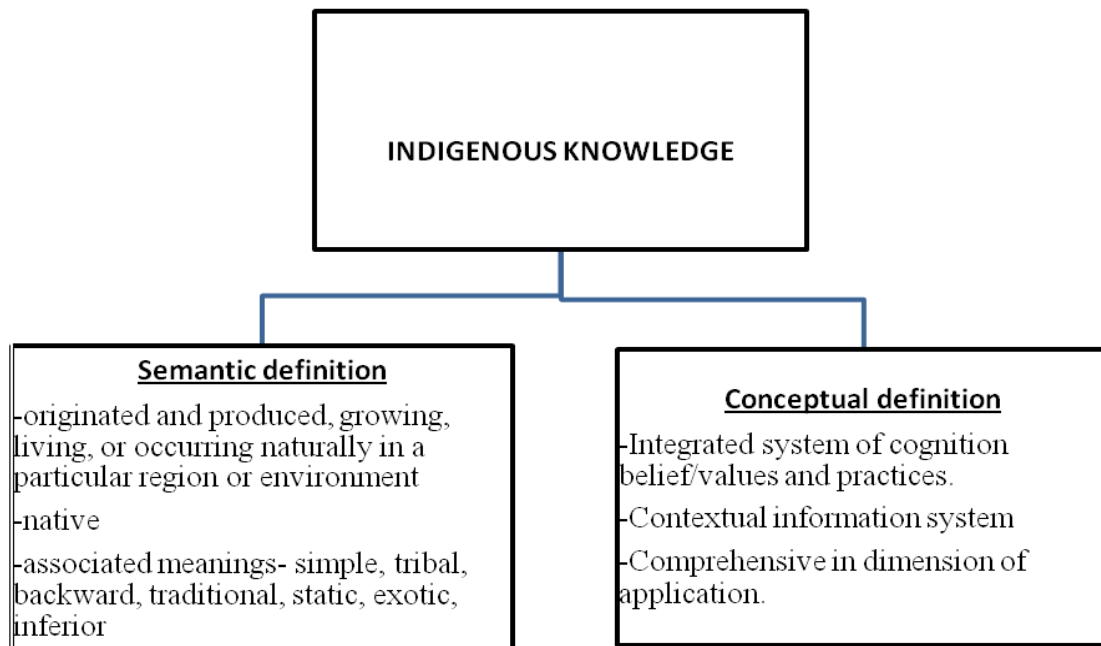


Figure 1: Defining indigenous knowledge (Williams and Muchena 1991: 52)

Figure 1 brings out the differences between the semantic and conceptual definitions of indigenous knowledge. The semantic definition of IK views IK as 'native', originating and occurring naturally in a particular region, and it is sometimes associated with being simple, tribal, backward, traditional, static and inferior. The conceptual definition of IK, which is what is applied in this study, views IK as an integrated system of cognition values and practices with a contextual information system and a consequent comprehensive dimension of application. The "complexity" (involving different aspects of human life, be it social, economic, physical, political, etc.) has made it difficult for scholars to agree on a single clear-cut definition of the term *indigenous knowledge* (Williams and Muchena 1991: 53).

Warren (1991) states that indigenous knowledge is used synonymously with 'traditional' and 'local' knowledge to differentiate the knowledge developed by a community from the international knowledge systems sometimes called 'western systems' generated through universities, government research centres and private industry. He refers to IK as the knowledge of indigenous people as well as any other defined community (Kolawole 2005; Maila 2007).

Magoro and Masoga (2005), in providing aspects of IK in small scale farming, argue that indigenous knowledge is concerned with many aspects of importance to local people as it is the wisdom held and shared by the people in their community and it is disseminated from generation to generation. This knowledge is about farming systems, medicines, the environment, traditional recipes, systems of classification and anything important to the community.

Warren *et al.* (1995) state that indigenous knowledge (IK) is local knowledge that is unique to a given culture or society contrasted with international knowledge systems as generated through a global network of universities and research institutions. Indigenous knowledge (IK) is important as it forms the information base for a society (such as knowledge in agriculture, healthcare, education, community rules and customs, etc.), which facilitates communication and decision-making. This definition has been widely used in the field of indigenous knowledge (Nwonmu 2007).

The Centre for Indigenous Knowledge at the University of Iowa in the United States defines indigenous knowledge as knowledge that is unique to a given culture or society. It is the basis for agriculture, health care, food production, education, environmental conservation and a host of other activities. Such knowledge passes down from generation to generation, usually by word of mouth (Cohen 1996: 12).

Grenier (1998) refers to indigenous knowledge as the unique, traditional, local knowledge existing within and developed around the specific conditions

of women and men indigenous to a particular geographic area. Grenier argues that the quantity and quality of IK possessed by individuals vary. Indigenous knowledge is stored in people's memories and activities and is expressed in stories, songs, folklore, proverbs, dance, myths, cultural values, beliefs, laws, local language and taxonomy, agricultural practices, equipment, materials, plant species and animal breeds. Indigenous forms of communication and organisation are vital to local-level decision-making processes and to the preservation, development, and spread of IK.

Maila and Loubser (2003), in their book point out that the International Institute for Rural Development (IIRD) views indigenous knowledge as the knowledge that people in a given community have developed over time, and continue to develop. It is based on experience, often tested over centuries of use, adapted to local culture and environment, and dynamic and changing. Maila and Loubser (2003), argue that scholars seem to differ on whether indigenous knowledge systems are evolving or are static and on whether indigenous knowledge systems lack the potential for universal usage. Indigenous knowledge is the information base (agriculture, health care, food production, education, environmental conservation and a host of other activities) for a society, which facilitates communication and decision-making. Indigenous information systems are dynamic and are continually influenced by internal creativity and experimentation as well as through contact with external systems (Flavier 1995).

Odora Hoppers (2002) also brought indigenous knowledge to bear on the socio-political terrain by arguing that indigenous knowledge is a combination of knowledge systems encompassing technology, social, economic, and philosophical learning, including educational, legal and governance systems. It is knowledge that therefore relates to a wide array of dimensions, that is, the technological, social, institutional, scientific and developmental, including those used in liberation struggles.

Mallick in his contribution in Sillitoe (2000) points out that there is a growing consensus among development practitioners and academics that due

respect should be given to indigenous knowledge whilst planning and implementing development programmes for different sectors such as agriculture, fisheries, forestry, etc., and also for a country or region. He views indigenous knowledge as the local and traditional knowledge used by rural people in all aspects of daily life including natural resource management, agriculture, fisheries, livestock, health practices and other activities relating to their livelihoods. He also stresses the increasing interest in the contribution of indigenous knowledge in sustainable resources management and agricultural development. Zuberi (1998) agrees that indigenous knowledge should be understood and adopted in agriculture and natural resource management for sustainable development.

The definitions discussed here have a lot in common. They emphasise the communication of local information over time from one generation to another, which is essential for development projects to attain sustainable agricultural development. The communication of the values, beliefs, practices and customs of the community from one generation will help in their preservation and effective use from one generation to the next.

For the purpose of this study, indigenous knowledge (IK) is defined as the knowledge within a given community or society. IK contrasts with the international knowledge system associated with universities, research institutions and private firms. It is the basis for local-level decision-making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities (Warren 1991).

Indigenous knowledge is the information base for a society or community, which facilitates communication and decision-making, is dynamic and is continually influenced by internal creativity and experimentation as well as by contact with external systems (Flavier 1995). IK is a body of accumulated wisdom acquired from years of experience and trial-and-error problem solving by groups of people working to meet the challenges they face in their local environments using the resources they possess (Green 1996).

Most people find it hard to differentiate or understand what constitutes IK and IKS. To better understand this study, it will be essential to understand what differentiates the two (IK and IKS). The next section therefore provides us with an understanding of these two concepts.

2.3. UNDERSTANDING INDIGENOUS KNOWLEDGE (IK) AND INDIGENOUS KNOWLEDGE SYSTEMS (IKS)

According to Nel (2005: 7; 2006: 99), “IKS is a systemic reference to the knowledge and practices of indigenous communities constitutive of their meaning and belief systems, as well as the substantive dimension of their practice and customs. IKS is about the knowledge, practices, values, and ways of knowing and sharing in terms of which communities have survived for centuries.” Grenier (1998), like Nel (2006), also stressed the idea that IKS is the knowledge of indigenous communities, but he goes further in saying that indigenous knowledge systems are cumulative, representing generations of experiences, careful observations, and trial-and-error experiments. The development of IKS covers all aspects of life, including management of the natural environment, agriculture, education, and it has been a matter of survival to the people who generated these systems.

Grenier also sees IK systems as dynamic, because new knowledge is continuously incorporated, which innovates IKS from within. Indigenous knowledge systems internalise, use and adapt external knowledge to suit the local situation. Grenier (1998) refers to indigenous knowledge as knowledge that, when combined, forms the indigenous knowledge system. He defines IK as the unique, traditional, local knowledge existing within and which develops around the specific conditions of women and men indigenous to a particular geographic area.

A knowledge system is an assemblage or combination of things or parts (practices, beliefs, values, ways of knowing, etc.) to create a complex or unitary whole. Indigenous knowledge systems are therefore made up of a

combination of different indigenous knowledge bases (including natural resource management, agriculture, fisheries, livestock, health practices and other activities relating to their livelihoods) brought together to form a system or complex whole (Sillitoe *et al.* 2005).

Within the African context, indigenous knowledge systems are about unearthing and recognising original thoughts and practices of Africans (Lebakeng 2004). Indigenous knowledge and indigenous knowledge systems are important and are shaped by and respond to local needs (Payle and Lebakeng 2006).

For the purpose of this study, indigenous agricultural knowledge is studied as an aspect of the indigenous knowledge systems of the communities involved. Both IK and its systems are components of an intangible heritage that adds value to the material heritage of indigenous communities (Dondolo 2005). Indigenous knowledge and its systems are socially constructed and manifested in socio-cultural, spiritual, religious, ecological, economical, political and historical dimensions that help inform an individual's worldview.

2.4. IMPORTANCE OF INDIGENOUS KNOWLEDGE

In the emerging global knowledge economy, a country's ability to build and mobilise knowledge capital is equally essential for sustainable development than the availability of physical and financial capital (World Bank 1991). The basic component of any country's knowledge system is its indigenous knowledge. It encompasses the skills, experiences and insights of people applied to maintain or improve their livelihood.

Warren *et al.* (1995) point out that indigenous knowledge is a valuable national resource. It exists within an indigenous community and can be a source of pride and ownership in development. It is also a useful tool for sustainable development. It encourages participatory decision-making, formulation and the effective functioning of local organisations. Indigenous knowledge is a practical concept that is used to facilitate communication

among people from different backgrounds, such as researchers, development workers and community members.

Familiarity with indigenous knowledge helps agents of change understand and communicate with communities by facilitating participatory approaches to decision-making. Indigenous knowledge helps to ensure that the end users of specific development projects are involved in development technologies appropriate to their needs. By working with and through existing systems, agents of change can facilitate the transfer of technology generated through the international research network in order to improve local systems. Indigenous knowledge is cost effective, since it builds on other development efforts aimed at sustainability and capacity building (Warren *et al.* 1995).

Indigenous knowledge is a valuable national resource that has been overlooked in development efforts. Most of today's developed countries have at one time or another relied on their local knowledge in addition to knowledge from outside sources. The importance of indigenous knowledge can be summarised as follows (Warren *et al.* 1995: 442):

- It encourages participatory decision-making and the formation of an effective functioning of local organisations;
- It is a practical concept that can be used to facilitate communication among several people and groups;
- It helps to assure that the community members of specific development projects are involved in developing technology appropriate to their needs; and
- Indigenous knowledge is also the social capital of the poor; their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives.

2.5. IK, SUSTAINABLE DEVELOPMENT AND TRANSFORMATION

Sillitoe *et al.* (2005: 5) point out that the awareness of the contribution that local knowledge insights might make in development has grown in part out of farming systems research, which emerged in the 1970s when the complexity of natural resource management in diverse and risk-prone environments was realised. They further argue that “an understanding and appreciation of local ideas and practices will further development work”. In addition, by paying attention to local perceptions and practices, it is increasingly realised that development initiatives are more likely to be relevant to people’s needs and generate sustainable intervention.

It is increasingly evident that past approaches to development neglected indigenous knowledge systems and institutions and were unlikely to be productive in solving developing countries’ problems. These approaches are not likely to be in the long-term interest of these countries in view of recent research revelations, especially in agriculture about the effects of such development paradigms on the environment and sustainability of development in general (Wolf 1986a).

Bicker *et al.* (2004), state that the notion of indigenous knowledge has come to play a prominent role in contemporary debates on development. Recently, it has been found that the processes of social transformation and of formulating policy objectives of social intervention are increasingly understood in a number of terms. Richards (1985), on the other hand, stresses that indigenous knowledge is the single largest knowledge resource not yet mobilised in the development enterprise.

Literature on development shows that until the 1980s, ‘development’ was viewed either as a linear process of cause-and-effects, or it was explained by the ‘logic of capital’ in terms of the radical critique associated with neo-Marxism. In the former approach, ‘development’ is an effort to fight poverty, to raise standards of living, and to promote some version or other of progress. Usually a top-down approach was followed; the focus was to

locate what went wrong, why, and how it can be fixed. In the latter approach, capitalism was viewed as an obstacle to development as the cause of poverty, because it promoted only the interests of institutions like the World Bank, USAID, etc. (Sachs 2005). This approach is also seen by Coetzee and Graaf (1996) as being not only theoretically more competent, but morally defensible. Development should spawn policies and research practices that avoid violence to ordinary people's cultures and aspirations, to the environment, and to human dignity and self-esteem (Behera and Erasmus 1998).

Sillitoe (2004) stresses that in recent days we can no longer afford to ignore the value of indigenous knowledge. By continuing to view the knowledge and practices of local people as primitive, unscientific and as a hindrance to development, the desired goal of achieving sustainable development in the country's many sectors (agriculture, forestry, fisheries and so on) may continue to remain unrealised. It is therefore essential that planners, policy makers and development practitioners endeavour to understand the indigenous knowledge and practices of the community in which they are working. Hence, to achieve sustainable development in the agricultural Land Reform Projects of Basotho Letjhabile and Maolosi Trust, the indigenous knowledge of the people needs serious consideration.

Warren (1989) argues that using indigenous agricultural knowledge of farmers in developing appropriate technologies has increasingly been recognised as a method of attaining sustainability in agriculture and rural development programmes.

Brokensha (1986), like Sillitoe (2004), argues that indigenous knowledge is especially relevant to sustainable development planning. It is locally appropriate, having been tried and tested through time to meet the demands of local conditions, and it is fully integrated into a region's social institutions.

While others such as Sillitoe (2004), Brokensha (1986) and Warren (1989) see the advantage of the attention paid to indigenous knowledge by

development endeavours, Appleton (1995) on the other hand, argues that indigenous knowledge is starting to be taken more seriously by the major players in the development process. However, there is a danger in such attention. If this knowledge, as it is popularised, is classified as a precious, but static commodity, to be appreciated and then incorporated (by Western-trained scientists) into research plans, then the bearers of such knowledge will be not be better off.

2.6. DEVELOPMENT PARADIGMS AND INDIGENOUS KNOWLEDGE

The emergence of indigenous knowledge ideas and practices has crucially depended on a recent change in the paradigms that structure the concept of development. The dominant development paradigms, until a decade or so ago, were 'Modernisation', the classical transfer of technology model associated with the political right, and 'Dependency', the Marxist-informed model associated with the political left (Hobart 1993). Indigenous knowledge was sidelined by both paradigms. The new, more grassroots-focused or bottom-up oriented development paradigms that have recently emerged to challenge these top-down perspectives are the 'Market-liberal' and 'Neo-populist' paradigms. The Market-liberal paradigm promotes market forces and decries state intervention, while the 'Neo-populist' paradigm advocates participation and empowerment (Dryzek and Schlosbe 1998). Both paradigms give more credence to local perspectives, while still mirroring the same political divide; the former associated with the political right, and the latter associated with the political left (Sillitoe *et al.* 2005).

2.6.1. The Modernisation Approach

Coming into prominence in the 1950s and early 1960s, the modernisation approach complemented as well as justified the American notion that the United States would help the rest of the world to wealth, progress, and democracy. For most scholars, it is a coherent theory postulating polar types of societies (modern and traditional) with entirely different characteristics. C.E. Black, a historian, represents this viewpoint when he notes that modernity has come to be widely employed to describe the characteristics

common to countries that are most advanced in technological, political, economic and social development. Modernisation is therefore the process by which the characteristics of modernisation are acquired (Sachs 2005; Lockard 1981).

Different scholars have provided different descriptions of the modernisation approach depending on their field of expertise, e.g. historians, sociologists, economists and many other scientists and social scientists. Daniel Lerner, a political scientist, describes modernisation as the process of social change, whereby less developed societies acquire characteristics common to more developed societies (Sachs 2005). The modernisation approach does not only dismiss local knowledge, but also views it as part of the problem of underdevelopment, being non-scientific, traditional and even irrational and primitive (Sillitoe *et al.* 2005).

South Africa, despite its links to an indigenous heritage, is also subjected to its share of modernist agricultural development interventions. The South African government extension and research services (like those of many developed and developing countries) still attempt to resolve complex problems with simple and quick-fix solutions. Consequently, indigenous knowledge and related agricultural practices are often overlooked or attempts are made to replace them with more acceptable and efficient modern methods (Hart and Vorster 2007).

Battiste and Henderson (2000) argue that it is now recognised that research in developing countries is not just a question of coming up with technological fixes to others' problems, passing along scientifically validated information for them to adopt. Indigenous people have their own so-called effective science and resource-use practices and to assist them we need to understand something about their knowledge and management systems.

Warren *et al.* (1999) also point out that it is increasingly recognised that development initiatives that pay attention to local perceptions and ways are more likely to be relevant to peoples' needs and to generate sustainable

interventions. They go on by saying that our scientific tradition has something to contribute to the development process and that indigenous knowledge needs to be conveyed to scientists in such a way that they can appreciate its relevance. One can therefore conclude that in today's world, the modernisation approach, which dismisses local knowledge, is irrelevant to the indigenous development initiative.

2.6.2. The Dependency Approach

Dependency, as a concept in the context of development and its encompassing perspective, points towards inequality and exploitation among countries. This focus on exploitation and inequality intimately relates to the theory of Marxism (Coetzee and Graaff 1996). In response to the critique of the Modernisation Theory by the proponents of the World System Theory such as Wallenstein, the Dependency School emerged, initially in Latin America in the late 1950s and mid-1960s through the work of Cardoso, Frank, Baran, and others. The Dependency Theory is based on Marxist political economy, and saw underdevelopment as a deliberate process designed to perpetuate the exploitation of the Third World economies by Western capitalism (Castles 2001). The dependency approach portrays poor farmers as helpless victims; it sidelines local knowledge as the view of the powerless (Sillitoe *et al.* 2005).

2.6.3. The Market-Liberal Approach

This neoclassical economic theory became dominant in the 1980s and 1990s. This approach to development emphasised reliance on market mechanisms and the reduction of the role of the State in developing economies. Taken to the extreme, the State was to be limited to its function of providing infrastructure and securing order, while the regulating of the economic activity was to be left entirely to the market (Castles 2001). The market-liberal approach, although it accords more attention to indigenous knowledge, refers to market information relating to available technical options and how this knowledge will influence choice and the appropriateness on the various options to farmers' environments and households (Sillitoe *et al.* 2005).

2.6.4. The Neo-Populist Approach

Neo-populism emerged in Russia and Eastern Europe after the First World War and attempts to argue that there is an alternative pattern or trajectory of economic development, which can be just as effective as, or even more effective than large-scale industrialisation in eliminating mass poverty and can also be less costly in human terms. The neo-populist says many of the development problems in the Third World are due to the introduction of unsustainable technologies from the North (Webster 1990).

Julius Nyerere (1961–1968) provided an example of a neo-populist approach in Tanzania. Nyerere's policies rested on the proposition that the rural socialism he advocated was in fact no more than what was natural to the African. To the African, it was a mere extension of the traditional, pre-colonial way of doing things communally in kin-based villages that had been temporally lost or displaced during the colonial era (Webster 1990). The neo-populist approach, which is participatory, gives potential prominence to indigenous knowledge, which is taken seriously and afforded a role in problem identification and research (Sillitoe *et al.* 2005).

These different development approaches do not exclude one another. They often are combined in programmes. With the more recent grass-roots approaches that advocate indigenous knowledge research, both the technological and socio-political issues feature to an extent, inextricably entwined (Sillitoe *et al.* 2005).

2.6.5. The Link between the Development Paradigms and IK

While modernity and modern knowledge systems, can be seen as the ideological foundation for Western capitalism aggregation and the exploitation of indigenous resources, Dependency theorists and the neo-liberals acknowledge that the holistic nature of IKS has made major contributions to the worldwide thrust towards the conservation of natural resources. The neglect and eradication of indigenous knowledge, most especially in the developing world, is a major threat to sustainable development (Sillitoe 2004).

More effort with regard to the preservation of sustainable indigenous knowledge is required, taking into account the worldwide fast-changing notion of modernisation, otherwise the past will soon only be found in literature and not in practice (Barasa 2007).

2.7. WHAT IS SUSTAINABLE DEVELOPMENT

The concept of sustainable development received its first major international recognition in 1972 at a UN conference on Human Environment held in Stockholm. 15 years later the term was popularised in *Our Common Future*, the Brundtland Report, which includes what is deemed the 'classic' definition of sustainable development, development which meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland 1987).

Sillitoe (2000) refers to 'sustainability' as a term that has different meanings for different people. It can be defined in two ways: either from a resource based focus emphasising conservation, or from an output focus emphasising livelihood or development (Homewood 2005). The resource base focus states that natural resources must not lose their capacity to produce through depletion or pollution. The output focus states that productivity must not decrease. They argue that efforts to achieve sustainable development in agriculture should take into account indigenous knowledge and technology to reduce reliance on scientific technical knowledge, and that the potential for technical indigenous knowledge has a tremendous potential for fathering sustainability.

Sustainable development is variously conceived in terms of vision expression, value exchange (Clark 1989), moral development (Rolston 1994), social reorganisation (Gore 1992) or transformational process (Viederman 1994) towards a desired future or better world (Gladwin *et al.* 1995). Maila (2007) argues that sustainable development is perceived as a complex concept because of the south-north, north-north and south-south divide.

Munslow and Fitzgerald (1994) argue that the concept *sustainable development* has gained widespread international acceptance for two basic reasons. Firstly, there was a genuine worry about the escalating costs of existing development paths, not only concerning the serious environment effects, but also in the ability to properly address the needs of the poorest in society. Secondly, the acceptance of sustainable development can mean all things to all people. Everyone can agree to the idea while pursuing their own interpretation of what it means and how to achieve it. This is true as we have various definitions for the term *sustainable development*.

The World Commission on Environment and Development, known as the Brundtland Commission (1987), states that the essence of sustainable development is that we should organise the affairs of our life so that we consume the earth's resources to meet our own needs and aspirations in a way that does not compromise the ability of future generations to meet their needs (Culbertson 1993).

The World Commission on Environment and Development (WCED) has put forth the following objectives for sustainable development policies (WCED 1987):

- Reviving growth;
- Changing the quality of growth;
- Meeting essential needs for jobs, food, energy, water, and sanitation;
- Ensuring a sustainable level of population;
- Conserving and enhancing the resource base;
- Re-orientating technology and managing risks; and
- Merging environment and economics in decision-making.

McGregor in Blaser *et al.* (2004) argues that sustainable development does not challenge the power imbalance among the Western nations in a meaningful way. It does not empower indigenous people. Although the Brundtland Report did recognise the value of indigenous knowledge as a

source of knowledge for moving towards sustainable development, such recognition was still framed within the dominant Western agenda. The conventional concept of sustainable development also tends to perpetuate tension between environmental and economic aspects. Surviving the way indigenous people have done for ages is not given serious consideration.

Tolba (1987) states that the concept 'sustainable development' encompasses the following aspects:

- Help for indigenous poor because they are left with no option other than to destroy their environment;
- The idea of self-reliant development, with natural resource constraints;
- The ideas of cost-effective development, that is to say, development should not degrade environment quality, nor should it reduce productivity in a long run;
- The great issues of health control, appropriate technologies, food self-reliance, clean water and shelter for all; and
- The notion that people-centred initiatives are needed: human beings, in other words, are the resources in the concept.

Sustainable development as a concept is not only problematic with regard to sustainability or maintaining growth but with the philosophy encapsulated in the concept 'development', for this means quite different things for people. The Neo-Liberal philosophy looks at sustainability in a different way from what is viewed within critical development studies or Neo-Marxist approaches.

2.7.1. Establishing the Link between IK and Sustainable Development

Ngulube and Lwoga (2007) argue that the fact that indigenous knowledge and indigenous knowledge systems can contribute to the sustainable development of a society cannot be doubtful with the increasing attention being given to IK in the Third World (Maila 2007; Payle and Lebakeng 2006). Odora Hoppers (2002: 3–7) claims that a major threat to the sustainability of natural resources is the erosion of people's indigenous knowledge, the basic

reason for this erosion being the value attached to it. It is therefore right to say that the moral imperative of sustainable development is inextricably linked to the value of IK. What proves to be the challenge, though, has been the erosion and marginalisation of IK through the process of colonisation and globalisation.

A great amount of world literature (Sillitoe *et al.* 2005) on IK provides evidence that IK is an indispensable contributor to sustainable development. IK is considered part and parcel of the main schedule of local economic development (Nel 2006). Nel (2006) also stresses that IK has been involved in the improvement of community health systems, healthy community structures, sustainable livelihood and social development. Nel (2006) furthermore emphasises that acknowledging the importance of IK within sustainable development implies the scope of development theory is opened to alternative cultural systems and alternative knowledge is accepted for their contribution. Development does not only rely on scientific and technologically produced knowledge mediated by transfer agencies.

2.8. TRANSFORMATION

The term *transformation* has gained more popularity in the twenty-first century (Daszko *et al.* 2005) than in any other century (Drucker 1994). The term *transformation* is often confused with any kind of change, technology breakthrough, innovation, process improvements or transitions. However, few changes can be equated with transformation (Daszko *et al.* 2005).

According to the Webster Dictionary, to transform means to change in form, appearance or structure; metamorphoses; to change into another substance. All transformation is change but not all change is transformation (Daszko *et al.* 2005). The figure below created by Daszko *et al.* (2005: 50–58) explains three different types of change with transformation as a form of change.

THREE TYPES OF CHANGES			
	Traditional	Transitional	Transformation
Motivation for change	Better, Faster, Cheaper	Fix a problem	Survival, environment, world changes, breakthrough needed.
Degree of change	Incremental improvements	Transition from old to New, A to B	Revolutionary, necessary
Thinking	Improve	Change management; strategic planning.	Radical shifts in mindset/thinking/action.
Actions	Manage and control processes	Design the plan, implement the plan.	Entire system change, complete overhaul of mindset, paradigms, culture, communications, strategy, structure, actions, systems and processes, use of data, system of profound knowledge.
Destination	Improvements; can be limited to improving the wrong things.	Projects completed.	Continually transforming; no end state.
Changes required	Improvement of skills, practices and performance; often limited to focusing on individual performance rather than the whole system to make significant differences.	Controlled process/projects managed/assigned.	Senior leadership committed to new thinking, learning and actions; coaching from outside: "a system cannot see itself". Courage.

Outcomes	Improvements, limited	Changes, limited	Sustainable change (with leadership and continual learning and new action) now system: agile, adaptive, flexible, intelligent, emerging, connected, involved, creative, moving forward; ability to sense and respond.
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Figure 2: Three types of change (Daszko *et al.* 2005: 50)

From the figure above, transformation can be viewed as the creation and change of a whole new form, function or structure. To transform is to create something new that has never existed before and could not be predicted from the past. Transformation is a 'change' in mindset. It is based on learning a system of profound knowledge and acting based on learning with knowledge and courage (Daszko *et al.* 2005).

Transformation within this study is perceived with regard to a change in function from being labourers to land owners, homeless to house owners, nomads to settlers, job seekers to job creators, buyers to producers and also a change in mindset by being independent decision-makers. The first stage of transformation is that of the individual. A transformed individual will perceive new meaning to his life, to events, to numbers, to interactions between people. Once the individual understands the system of profound knowledge, he/she will apply its principles in every kind of relationship with other people. He /she will have a basis for judgment of his/her own decisions and for transformation of the community that he/she belongs to (Deming 1993). An understanding of indigenous knowledge and its contribution to agriculture will help indigenous people understand the importance of their knowledge and thus preserve it for their own development.

2.9. SOUTH AFRICAN FARMING SECTORS

In South Africa, land is regarded as a very important commodity and is used for farming, which provides food, a living space, and can also be seen as a sign of wealth and success. Even though it is said that “in the South, land was not regarded as a commodity, but formed a fundamental part of the community’s universe and sense of identity in material and spiritual terms” (Simon 1993: iv), it still boils down to the same importance attributed to land. The land of South Africa is divided into a number of farming regions according to climate, natural vegetation, soil type and farming practices. Agricultural activities range from intensive crop production and mixed farming in winter rainfall and high summer rainfall areas, to cattle ranching in the bushveld and sheep farming in more arid regions. To better understand this study, it is necessary to be acquainted with the different farming sectors in South Africa, so as to be able to contextualise the activities involved with the agricultural projects of Basotho Letjhabile and Maolosi Trust.

2.9.1. Field Crops and Horticulture

Grain and Oil Seeds

The grain industry is one of the largest in South Africa, producing between 25% and 33% of the total gross agricultural production and with a value of some R12 billion. The largest area of farmland is planted with maize, followed by wheat and, to a lesser extent, sugar cane and sunflowers. Maize is the largest locally produced field crop and the most important source of carbohydrates in the Southern African Development Community (SADC) region. South Africa is the main maize producer in the SADC, with an average annual production of about 8,8 million tons over the past 10 years (Economic Review of South African Agriculture 2008).

More than 9 000 commercial maize producers are responsible for the major part of the South African crop, while the rest is produced by thousands of small-scale producers. Maize is produced mainly in the North West Province, the Free State, the Mpumalanga Highveld and the KwaZulu-Natal Midlands.

Local consumption of maize amounts to about 8 megatons, and the surplus is exported. Wheat is produced in the winter rainfall areas of the Western Cape and the eastern parts of the Free State. Barley is produced mainly on the southern coastal plains of the Western Cape. The Oudtshoorn District is responsible for about 90% of lucerne seed produced in South Africa. Sorghum is cultivated in the drier parts of summer rainfall areas such as Mpumalanga, the Free State, Limpopo, North West and Gauteng. South Africa is the world's tenth-largest producer of sunflower seed, which is produced in the Free State, North West, and the Mpumalanga Highveld and Limpopo Province. Groundnuts are grown mainly in the Free State, North West and the Northern Cape (Census of Commercial Agriculture 2007).

Sugar

South Africa is the world's 13th-largest sugar producer. Sugar cane is grown in 15 areas, extending from northern Pondo Land in the Eastern Cape through the coastal belt and Midlands of KwaZulu-Natal to the Mpumalanga Lowveld. An estimated 2,5 mt of sugar is produced each season. Some 50% is marketed in southern Africa, with the rest exported to Africa, the Middle East, North America and Asia. The South African sugar industry contributes R1,7 billion to the country's foreign exchange earnings. Established sugar farmers aim to redistribute at least 78 000 ha of sugar-producing land to black farmers by 2015, with the government committing R6 million towards the first phase of the programme (Lewis 1990).

Fruit

Deciduous fruit is grown mainly in the Western Cape and in the Langkloof Valley in the Eastern Cape. Smaller production areas are found along the Orange River and in the Free State, Mpumalanga and Gauteng. This industry's export earnings represent 12% of South Africa's total earnings from agricultural exports. Citrus is produced in the irrigation areas of Limpopo, Mpumalanga, the Eastern Cape, Western Cape and KwaZulu-Natal. Pineapples are grown in the Eastern Cape and northern KwaZulu-Natal. Other subtropical crops – avocados, mangoes, bananas, litchis, guavas, pawpaws, granadillas, and macadamia and pecan nuts – are

produced in Mpumalanga, Limpopo and in the subtropical coastal areas of KwaZulu-Natal and the Eastern Cape (Census of Commercial Agriculture 2002).

Wine

South Africa is the tenth-largest wine producer in the world. About 110 200 ha of land are under cultivation with about 317 million vines. About 84% of wines are produced by cooperatives (Duming 2004).

Vegetables

About 40% of South Africa's potato crop is grown in the high-lying areas of the Free State and Mpumalanga. Limpopo, the Eastern, Western and Northern Cape, and the high-lying areas of KwaZulu-Natal are also important production areas. Of the total crop, 50% is delivered to fresh produce markets and a further 18% processed, with the South African potato processing industry having grown tremendously over the past few years. Potatoes make up 40% of vegetable farmers' gross income, with tomatoes, onions, green maize cobs and sweet corn contributing 38% (Census of Commercial Agriculture 2002).

Tomatoes are mainly produced in Limpopo, the Mpumalanga Lowveld and Middleveld, the Pongola area of KwaZulu-Natal, the southern parts of the Eastern Cape and the Western Cape. Onions are grown in Mpumalanga, in the Western Cape and the southern Free State. Cabbage production is concentrated in Mpumalanga and the Camperdown and Greytown Districts of KwaZulu-Natal (Census of Commercial Agriculture 2002).

Cotton

Cotton is cultivated in Mpumalanga, Limpopo, the Northern Cape, KwaZulu-Natal and North West. It constitutes 74% of natural fibre and 42% of all fibre processed in South Africa. Cotton is grown under irrigation as well as in dry land conditions. 75% percent of local production is harvested by hand. Emerging black farmers are being helped to grow cotton on 9 000 ha of land in four provinces (Cotton South Africa 2006).

Tobacco

Virginia tobacco is produced mainly in Mpumalanga and Limpopo, with smaller quantities of Oriental tobacco grown in the Western and Eastern Cape. There are more than 1 000 growers in the country, producing some 34 million kilograms every year on about 24 000 ha of land (Tobacco Institute of South Africa 2007).

Tea

Honeybush tea grows mainly in the coastal and mountainous areas of the Western Cape and in certain areas of the Eastern Cape. Honeybush has become a commercial crop, with the production of more than 100 tons of processed tea per year. South Africa's industry has seen an improvement in the quality of tea and the establishment of export standards, the construction of a large processing and packaging facility in Mossel Bay, increased consumer awareness, the appearance of several brand names on supermarket shelves, and a growing overseas market. Rooibos tea grows on the slopes of the Cederberg Mountain Range in a 150 km radius from Clanwilliam in the Western Cape. The unique microclimate of this tiny geographical region allows for the best quality natural teas to be grown. The harsh climate and fertile soil combine to form this rare herbal treasure only found in South Africa (Economic Review of South African Agriculture 2008).

Ornamental and Cut-Flower Farming

Ornamental plants are produced throughout South Africa, but production for export is concentrated in the central parts of Limpopo, Mpumalanga and the Gauteng Province. The crop includes nursery plants, cut flowers and pot plants. The country's most important plant export products are gladioli, proteas, bulbs, chrysanthemum cuttings and roses. Amaryllis bulbs are a lucrative export product to the US. The *fynbos* industry is being transformed from wild harvesting to cultivation, with an array of cultivars planted. Other *fynbos* species have potential for development as crops, provided the necessary research funding can be secured. Dried flowers form an important component of the *fynbos* industry. A large variety of proteas, cone bushes

and other products are well established in the market place (Niederwieser 2003).

Salt

South Africa's salt resources are confined to underground brines associated with inland salt pans, coastal salt pans and seawater. The majority of inland pans lie on rocks of the Karoo sequence, in a curved belt between 50 and 60 km wide, extending from near Vryburg in the North West to Hopetown on the eastern border of the Northern Cape, continuing westwards to Brandvlei. South Africa's production of salt from 1974–2006 is estimated at 17 million tons (Department of Mining and Energy Report R62/2007).

2.9.2. Livestock farming

Livestock is the largest agricultural sector in South Africa, with a population of some 13,8 million cattle and 28,8 million sheep. Stock breeders concentrate on the development of breeds that are well adapted to diverse climatic and environmental conditions (Gertenbach 2007).

Dairy farming

Dairy is produced throughout South Africa, with most farms in the eastern and northern Free State, North West, the KwaZulu-Natal Midlands, the Eastern and Western Cape, Gauteng and the southern parts of Mpumalanga. The four major dairy breeds in South Africa are the Holstein, Jersey, Guernsey and Ayrshire (Gertenbach 2007).

Beef farming

South Africa produces 85% of its meat requirements, with 15% imported from Namibia, Botswana, Swaziland, Australia, New Zealand and the EU. Local demand generally outstrips production even though there are untapped reserves in the communal farming areas. Cattle ranches are found mainly in the Eastern Cape, parts of the Free State and KwaZulu-Natal, Limpopo and the Northern Cape. Popular beef breeds include the indigenous Afrikaner and Nguni and locally developed Bonsmara and Drakensberger. European and American breeds such as Charolais,

Hereford, Angus, Simmentaler, Sussex, Brahman and Santa Gertrudis are maintained as pure breeds or used in cross-breeding (Du Plessis and Van der Waal 2004).

Sheep and Goat farming

South African sheep farming is concentrated in the Northern and Eastern Cape, Western Cape, Free State and Mpumalanga, with Ermelo in Mpumalanga one of the largest wool-producing districts. Fifty percent of sheep are fine-wool Merinos. Other breeds include the locally developed Afrino, a wool-mutton breed adapted to arid conditions, the South African Mutton Merino, the Dohne and the Merino Landrace. South Africa's mutton is produced from the Dorper – a highly productive and locally developed mutton breed for arid regions – and the wool Merino (Du Plessis and Van der Waal 2004).

Poultry and Pig Farming

South Africa's poultry and pig farms are more intensive than the extensive sheep and cattle production, and are found near the metropolitan areas of Gauteng, Durban, Pietermaritzburg, Cape Town and Port Elizabeth. The predominant pig breeds are the South African Landrace, the Large White, the Duroc and the Pietrain (Du Plessis and Van der Waal 2004).

Game Farming

South Africa has more game and a wider variety of game species than most countries. Game farming has grown over the years, and today is a viable industry with great economic potential. The country's main game areas are in the Limpopo Province, North West, Mpumalanga, the Free State, the Eastern Cape, the Karoo, the Kalahari in the Northern Cape and the thorn scrub of KwaZulu-Natal (Du Plessis and Van der Waal 2004).

Aquaculture

Mussels, trout, tilapia, catfish, oysters and *waterblommetjies* (Cape pondweed) are the major aquaculture species. Mussel farming occurs mainly at Saldanha Bay (Edwards *et al.* 1996).

After looking at the different farming sectors in South Africa, it is also important to understand the different types of agriculture practised in the world today to gain a clear contextual understanding of global agricultural activities. Also, it will help to put the kind of agriculture practised by the Basotho Letjhabile and Maolosi Trust agricultural projects into perspective.

2.10. TYPES OF AGRICULTURE IN THE WORLD

There are three types of agriculture practised around the world which are the result of the interaction between diverse socio-economic and agro-ecological factors that have been identified and distinguished by the Brundtland Commission of 1987. They are industrial agriculture, green-revolution agriculture and resource-poor agriculture (WCED 1987). It is essential to understand the different types of agriculture to see which one accommodates indigenous knowledge systems.

Industrial agriculture is found predominantly in Europe and North America with enclaves in some developing countries such as South Africa and some South American countries such as Argentina. It is characterised by highly capitalised infrastructure and machinery, large-scale farming units, reliance on high volumes of external inputs such as synthetic fertilisers and pesticides. It is also heavily dependent on government subsidies in certain parts of the world such as North America and Europe (Thomas 1981).

Green revolution agriculture is found in optimal environmental regions of developing countries. These countries are either well irrigated or receive reliable and sufficient rainfall. Farms in such areas are both large and small in scale and rely on high-yielding crop varieties with corresponding high volumes of external inputs. This kind of agriculture is found in parts of Latin America and North Africa, and the vast irrigated deltas of South, Southeast and East Asia. Both industrial and green revolution agriculture practice mono-cropping (planting a single crop on large fields). These systems are low-risk in comparison to resource-poor agriculture (Chambers *et al.* 1989).

Resource-poor agriculture is associated with marginal or unfavourable areas that are almost exclusively rain-fed and that are often characterised by undulating terrain with fragile soil or poor soils. The farming lands are very diverse and include dry lands, wetlands, highlands, hinterlands or remote areas, forests, mountains and hill slopes, grasslands, swaps and semi-desert areas. It is characterised by complex farming systems and diverse environments, and is risk-prone. To overcome the constraints associated with this type of farming, farmers usually employ complex and diverse livelihood strategies (Wolf 1986b).

Tim and Vorster (2007) point out that the majority of large-scale farms in South Africa are owned by white males, or companies run by white males, who farm for commercial purposes. These farmers generally have access to and can afford to make use of virtually all the prerequisite conventional agricultural technologies, input and capital. They tend to be relatively more resource-rich than their black counterparts.

Despite the three main types of agriculture stated by the WCED, traditional agriculture is practised by most African communities. Warren and Cashman (1988) argue that traditional agriculture in Africa is an indigenous agricultural system that has developed over time with cropping patterns based on an agricultural knowledge system, expressed in the indigenous language, viewed to be in dynamic equilibrium with the environment, influenced by innovations emerging from within the system as well as those adopted from other indigenous systems and the national and international systems. This is true of the Basotho Letjhabile and Maolosi Trust projects as will be seen in Chapter Four of this report. Project members of both projects have their own indigenous agricultural system, which has been in some ways influenced by innovations from the national and international systems of agriculture.

Despite the classification of agriculture into geographical regions, it can be argued that these different types of agriculture are not region specific as is the case with South Africa. South African agriculture is an incorporation of all three types of agriculture. It has a highly capitalised infrastructure and

machinery, large-scale farming units, reliance on high volumes of external inputs such as synthetic fertilisers and pesticides, it involves both large-scale and small-scale farming with dependence on high-yielding crops, and marginal or unfavourable areas that are almost exclusively rain fed and that are often fragile soil or poor soils (Thomas 1981; Tim and Vorster 2007).

2.11. CHALLENGES WHEN WORKING WITH INDIGENOUS KNOWLEDGE

Fairhead and Warren (1991) see IK as being difficult to categorise since it is holistic in nature, not involving a single discipline like science. It is specific in relation to place, having evolved in response to local conditions; yet it is diverse in content, with concepts that may combine agro-ecology with social relations of production.

Indigenous knowledge systems have been mostly studied by social anthropologists who have immersed themselves in cultures other than their own in order to comprehend the knowledge and values of those societies (Sillitoe 1998). The immersion approach is arguably non-scientific having no predetermined structure or theory, and it can result in the collection of large amounts of field data that are difficult to assess (Bicker *et al.* 2004).

There is the danger that indigenous knowledge may be interpreted in terms of the formal scientific concepts of agriculture and economics (Norgaard 1987). This is grossly distorting and what anthropologists call 'ethnocentrism'. This results in some researchers portraying local practices in terms of their own local perspective of technical expertise without having a sympathetic understanding of the cultural conditions. Informants may find it hard to give formal accounts of their knowledge and how they use it.

The process of questioning the 'knowledge provider' can interfere with his or her perception of what is being discussed as "... we constrain understanding in reducing everything to words. People transfer much knowledge between generations by tradition learnt and communicated through practical

experience and are not familiar with trying to express everything they know in words ... knowledge passed on by informal experience and practical demonstration; more often shown than articulated, it is as much skill as concept” (Sillitoe 1998: 229).

Much knowledge learnt through experience may be used without a conscious awareness of details (Hart and Vorster 2007) and even conscious knowledge may not be expressed in terms of rules or procedures (Breuker and Wielinga 1987). This has implications not only for the elicitation process but also for the subsequent representation of the knowledge for use by others. Moreover, the ‘knowledge provider’ may be unwilling to impart information because he or she recognises that holding knowledge gives power or status.

Communication problems are central to indigenous knowledge research, as it entails cross-cultural work. The familiarity and skill with which words are used to express concepts and procedures will affect the status and quality of knowledge elicited through interviews. Although people identified for interviews may be ‘experts’, it is unlikely that they have previously been required to describe their knowledge and decision-making procedures. They are not familiar with communicating in this way (Sillitoe 2000).

The status assumed by the researcher when studying the community will influence the data-collection process. Attempts to reduce social and intellectual barriers and improve understanding will enhance cooperation and thus knowledge elicitation. If the researcher assumes the role of ‘learner’, informants are more likely to be responsive than if he presents himself as a ‘scientist’ or ‘planner’ (Sillitoe 2000).

2.12. INDIGENOUS KNOWLEDGE AS SOCIAL CAPITAL

Indigenous knowledge is the social capital of the poor and their main asset to invest in the struggle for survival, to produce food, to provide shelter or to achieve control of their own lives (Larson 1998). In the so-called postmodern

world (Ritzer 2007), many indigenous knowledge systems are at risk of becoming extinct because of rapidly changing natural environments and fast-paced economic, political, and cultural changes on a global scale (Hunn 1993). Practices vanish as they become inappropriate for new challenges or because they adapt too slowly in line with Darwin's theory of survival.

Many practices disappear because of the intrusion of foreign technologies or development concepts that promise short-term gains or solutions to problems without being capable of sustaining them. If the value of indigenous knowledge is not recognised, it will slowly become replaced by the so-called 'global knowledge'. The imminent disappearance of indigenous knowledge is a calamity to those who engage with IK as social capital and make a living through it (Singh 2007).

2.13. CHAPTER SUMMARY

The term *indigenous knowledge* has been differently defined by various scholars, depending on their specialities or focus of study. These definitions all seem related as they all stress the fact that IK is knowledge that is passed on from one generation to another, usually by word of mouth. IK is the information base (food production, agriculture, education, etc.) for a given society. IK also plays a significant role in achieving sustainable development and transformation in any given society, without which development will be a waste of resources.

IK is an aspect of indigenous knowledge systems (IKS), which is an assemblage of different IK practices to form a complex whole. The development paradigms from modernisation to the neo-populist approach show a changing perspective on IK from being considered useless to being considered an important element in the development process. South Africa has a very rich farming sector ranging from field crops, horticulture and livestock farming. Often the content of agricultural information in Less Developing countries is devoid of input from the indigenous people. It is based on the need to modernise agriculture without consideration of the

goals and strategies of indigenous people. Studying the IK of any community is not an easy task, so the researcher must be prepared for challenges. IK is the social capital of the poor, and their main asset to invest in their survival struggle in order to take control of their own lives.

CHAPTER 3: REFORM PROGRAMMES

3.1. INTRODUCTION

This chapter focuses on the South African land reform programme and clearly brings out the programme and sub-programmes on which this study focuses. This chapter highlights the laws associated with land reform. This chapter also gives us a clear picture on how both projects (Basotho Letjhabile and Maolosi) were arrived at and the procedures involved in acquiring grants.

The South African government's Land Reform Programme is made up of three principal programmes, Land Redistribution, Land Restitution and Land Tenure Reform (Mashinini and De Villiers 2004). Land Redistribution makes it possible for poor and disadvantaged people to buy land with the help of a Settlement/Land Acquisition Grant. Land Restitution involves returning land, or compensating victims for land rights lost because of racially discriminatory laws passed since 1913. Land Tenure Reform which is the most complex area of land reform is aimed at bringing all people occupying land under a unitary legally validated system of landholding (White Paper 2006).

3.2. LAND REFORM LAWS

The following are some of the laws related directly or indirectly to land reform, all of which are too numerous to be listed here (Land Reform for Agricultural Development Report 2006: 13):

- The *Restitution of Land Rights Act, 22 of 1994*, which provides restitution land rights to those evicted from land by the racially based policies of the past.
- The *Provision of Certain Land for Settlement Act, 126 of 1993*, which provides for designation of land for settlement purposes and financial assistance to people acquiring land for settlement support.

- The *Development Facilitation Act, 67 of 1995*, which introduces measures to speed up land development, especially the provision of serviced land for low income housing.
- The *Upgrading of Land Tenure Rights Act, 122 of 1993*, which provides for the upgrading of various forms of tenure.
- The *Land Administration Act, 2 of 1995*, which makes for the assignment and delegation of powers to the appropriate authorities.
- The *Land Reform (Labour Tenants) Act, 3 of 1996*, provides for the purchase of land by labour tenants and the provision of subsidies to this end.
- The *Interim Protection of Informal Land Rights Act, 31 of 1996*, is a mechanism to protect people with insecure tenure from losing their rights to, and interest in, land pending long-term reform measures.
- The *Communal Property Associations Act, 28 of 1996*, enables communities or Groups to acquire, hold and manage property under a written constitution.

The above laws are the national laws of South Africa that are directly or indirectly related to land reform. They do not take into consideration the indigenous laws associated with land.

3.3. LAND RESTITUTION

The goal of restitution policy in South Africa is to restore land and provide other restitutionary remedies to people dispossessed by racially discriminatory legislation or denied access because of a lack of capital, in a manner to provide support to the vital process of reconciliation, reconstruction and development. The *Restitution of Land Rights Act, 22 of 1994*, and the Constitution provide a legal framework for the resolution of land claims against the state, and where possible through negotiated settlements (Bernstein 2005).

3.4. LAND TENURE

Land Tenure is a very complex process which will not be discussed here. It involves interests in land and the forms these interests should take. The South African Parliament passed two important pieces of legislation dealing with Land Tenure in 1996. These are the *Interim Protection of Informal Land Rights Act, 31 of 1996* and the *Communal Property Associations Act, 28 of 1996*. The *Interim Protection of Informal Land Rights Act, 31 of 1996* is a holding mechanism that prevents violation of existing interests in land until new long-term legislation is in place. The *Communal Property Associations Act, 28 of 1996* provides a means through which people wanting to hold land jointly and in groups can organise their tenure (White Paper 2006).

3.5. LAND REDISTRIBUTION

John Prendergast of the International Crisis Group (ICG) told IRIN that the main justification for land reform in post-colonial Southern Africa has been the repossession and redistribution of freehold land to achieve a more equitable balance in land ownership, as well as to raise the economic and social well-being of the African population, in order to redress past wrongs and to address the consequences of colonial land practices (IRIN 2006).

The Maolosi Trust and Basotho Letjhabile projects fall under the Land Redistribution Programme. The purpose of the Land Redistribution Programme is to provide the poor with access to land for residential and productive uses, in order to improve their income and quality of life. The programme aims to assist the poor, labour tenants, farm workers (for example those of the Basotho Letjhabile project) women, as well as emergent farmers. The government helps with the purchase of land but is not the buyer or owner. The government makes land acquisition grants available through the Department of Land Affairs and provide support by financing the required planning process. In many cases, like that of the Basotho Letjhabile project, communities are expected to pool their resources to negotiate, buy and jointly hold land under a formal title deed.

The activities of the land redistribution fall under two main headings:

3.5.1. Land Acquisition and Transfer

This involves the removal of impediments that may prevent land acquisition, identification and allocation of state land for redistribution; the establishment of financial mechanisms to provide grants and loans for land acquisition and development; provision of assistance to groups to establish legal entities to purchase and lease land; provision of dispute resolution services to seek local solutions; and assistance to enable beneficiaries to meet basic needs and utilise the land in a sustainable manner (White Paper 2006).

3.5.2. The Delivery System

The delivery system involves establishing statutory and non-statutory land reform institutions with community facilitation, planning and implementation skills managed by people who are well informed about the opportunities that land reform provides for economic advancement. Provision, monitoring and evaluation are regularly performed to give accurate information on what has been achieved. The delivery system also includes the establishment of mechanisms for coordination, planning, implementation and financial management.

Also, there is the establishment of a national database with the Department of Housing to assure the orderly administration and disbursement of the Settlement/Land Acquisition Grant. Other tasks of persons involved in the management of these institutions include: establishment of partnership between tiers and across sectors of government; establishment of partnership with Non-Governmental Organisations (NGO), Community Based Organisations (CBO) and private-sector service providers; training of governmental and NGO staff (White Paper 1997). The Maolosi Trust and Basotho Letjhabile projects fall under a land redistribution sub-programme known as the Land Redistribution for Agricultural Development (LRAD).

3.6. LAND REDISTRIBUTION FOR AGRICULTURAL DEVELOPMENT (LRAD)

The programme is designed to provide grants to previously disadvantaged South African citizens from the African, Coloured, and Indian communities to access land specifically for agricultural purposes. The Basotho Letjhabile and Moalosi Trust project members belong to a group of previously disadvantaged indigenous South Africans who have acquired land via the LRAD programme for agricultural purposes.

3.6.1. Objectives

The objectives of the LRAD programme as stated by the ministry of Agriculture and Land Affairs are (Land Reform for Agricultural Development Report 2006):

- To increase access to agricultural land by black people (African, Indian and Coloureds) and to contribute to the redistribution of approximately 30% of the country's commercial agricultural land over the duration of the programme;
- To improve nutrition and incomes of the rural poor who want to farm on any scale;
- To overcome the legacy of past racial discrimination in ownership of farmland;
- To facilitate structural change in the long run by assisting formerly disadvantaged people who want to establish small and medium farms;
- To stimulate growth from agriculture;
- To create stronger linkages between farm and off-farm income generating activities;
- To expand opportunities for women and young people who stay in rural areas;
- To empower participants to improve their economic and social well-being;

- To contribute to relieving the congestion in over-crowded former homeland areas;
- To enable those presently accessing land in communal areas to make better productive use of their land;
- To promote environmental sustainability of land and other natural resources.

3.6.2. Key Principles of LRAD

The LRAD programme has key underlying principles as stated in the White Paper (2006). The programme is unified and basic, and applicants can use it in flexible ways according to their objectives and resources. All applicants make a contribution (in kind or cash), but varying in amount. Implementation of the programme is decentralised and involves local level officials providing opinions and assistance in preparation of the project proposal. The projects are reviewed and approved at provincial level. Local level staff assists applicants, but does not approve the applications. The mode of implementation is adopted in the interest of maximum participation of applicants, speed of approval, and quality of outcomes (White Paper 2006).

3.6.3. Eligibility Criteria of Persons for LRAD Finance

LRAD is open to citizens of South Africa who are members of previously disadvantaged groups, i.e. Black South Africans including Africans, Coloureds, and Indians and applicants must be adult, aged 18 years and older. People should be willing to live on or near the land and operate or work on it and these people should be committed to use the grant to purchase or lease land for agricultural activities as shown in a business plan. Men and women have equal access to all benefits under LRAD, and women are actively encouraged to apply. Politicians who hold public office and government employees do not qualify and are not eligible for the grant. For the purposes of LRAD, agricultural activities can include crop and livestock production at a range of levels from subsistence to medium-scale commercial farming (Land Reform for Agricultural Development Report 2003).

Successful applicants are required to participate in training courses and activities designed to assist them in the successful operation of their farms and gardens. Those who have previously accessed the Settlement/Land Acquisition Grant (SLAG) are eligible to apply, though priority will be given to first-time applicants. Applicants who intend to obtain ownership as a group (as is the case with the Maolosi Trust and Basotho Letjhabile project) must be organised in a legal entity that already has or will obtain legal status. Applicants must make an own contribution on a matching grant basis (of at least R5 000 per individual), in kind, labour, or cash, towards the cost of establishment of the farm and its first year of operation (Land Reform for Agricultural Development Report 2006, Bernstein 2005).

3.6.4. Eligibility Criteria for LRAD Financing

To be eligible for sale under the programme, land on offer must have certain characteristics, namely the title to the land must be clear, free from land claims and registered in the name of the seller. No other condition, liabilities, or encumbrances, such as mortgage on the land and implements or outstanding permits to occupy should threaten the transfer of the land. The negotiated price (between the seller and the buyer) is consistent with market conditions, as attested to by a valuator. Agricultural use must be consistent with the present designated use of the land. If a change in category of land use of some or all land in the proposed project is contemplated as part of the proposal, necessary permissions for change in status (zoning, etc.) must be included in the proposal package (Land Reform for Agricultural Development Report 2006).

3.6.5. Land Redistribution for Agricultural Development (LRAD) Grant

The size of the grant will be determined by the size of the applicant's own contribution in kind, labour, and/or cash. Beneficiaries can access grants under LRAD on a sliding scale, depending on the amount of their own contribution. Every participant must make at least the minimum contribution of R5 000. Those who make the minimum contribution receive the minimum grant of R20 000. Those who desire larger grants will make larger

contributions. As the grant and own contribution increase, the grant declines as in proportion to the total project size. The grant and own contribution are calculated per individual adult basis (18 years and older). If people choose to apply as a group, the required own contribution and the total grant are both scaled up by the number of individuals represented in the group. The approval of the grants is based on the viability of the proposed project, which takes into account total project costs and projected profitability (Land Reform for Agricultural Development Report 2006).

The Basotho Letjhabile trustees and Maolosi trustees applied as group members. The Basotho Letjhabile trustees contributed in cash, assets and skills. They had assets such as a tractor which they acquired from the previous land owner for whom they worked as labourers. Some of the trustees also had small amounts of livestock which they brought together to increase their assets and chances of grant approval. To increase the size of the grant, they included their children above the age of 18. Initially, the Maolosi trustees were exclusive of their parents, but later decided to include them because they had assets as farm owners and an increase in the population would positively influence the amount of the grant.

3.6.6. Own Contribution to the LRAD Grant

Own contribution by applicants in labour can be for up to R5 000 per applicant (individual). In order for the applicant to claim the full R5 000 in own labour towards the own contribution requirement, the farm/business plan must show evidence that the applicant intends to devote a significant amount of own labour towards the establishment and operation of the project. The contribution in kind could be calculated by costing assets such as machinery, equipment, livestock and other assets that an applicant may possess. The cash contribution can be in the form of the applicant's own cash contribution to the project, or borrowed capital, or a combination of the two (Land Reform for Agricultural Development Report 2006).

With the Basotho Letjhabile Trust project, project members contributed in cash and kind. Project members contributed livestock, equipment and expertise. Expertise included the ability to drive tractors and ploughs as well as general labour since project members are former labourers of the farm. The Maolosi Trust project is different since all project members are of the same family/household and even more different because they have already owned a farm with some equipment and livestock. Their experience on the farm serves as expertise in different fields. For example, Mrs Maolosi has lifelong experience in salt production acquired from her growing up in a salt-producing community.

These three forms of own contribution can be added in any combination to make up the required own contribution from the applicant. If applicants want to access larger grants they will have to make a larger contribution. The largest grant (R100 000) can only be accessed under the programme with an own contribution of R400 000 or more. This own contribution can be financed through a combination of a normal bank loan approved under standard banking procedures and owned assets and cash. Farmers choosing this option would have to possess managerial skills adequate to handle the debt, and would have to have prior experience in agriculture. Where an own contribution requires such a loan component to match the grant, the loan and grant can be accessed directly via the Land Bank (Land Reform for Agricultural Development Report 2003).

3.7. IMPLEMENTING THE LRAD SUB-PROGRAMME

The project cycle consists of five phases: project identification, design, approval, transfer, and post settlement support.

3.7.1. Project Identification:

The first stage in the project identification is registration, which aims at making information available to applicants, register the applications and allocate funds for project planning. The Department of Land Affairs (DLA) and the

Department of Agriculture (DOA) provide detailed information and explanation of LRAD (e.g. estimation of own contribution, design agent information, business plan guidelines) and the application form.

The applicant is required to submit an application/registration form to the Department of Land Affairs planner. The Department of Land Affairs verifies the own contribution of the project members and comments on the application including an indication of the kind of agriculture that will be carried out on the land. Finally, the application is registered at the District Office (Land Reform for Agricultural Development Report 2006).

The second stage involves the planning of the grant approval. The DLA compiles documents requesting the release of the planning grant. The Land Affairs Department then submits and presents application documentation to the District Screening Committee (DSC). The DSC assesses the project for approval of the Planning Grant. The Department of Land Affairs takes the documentation to the Provincial Director (PD) for the release of the Planning Grant, minutes of the meeting included (Land Reform for Agricultural Development Report 2003).

3.7.2. Design

The Department of Land Affairs and the Department of Agriculture obtain a provisional subdivision sketch plan from the business plan in cases where subdivision is required and then appoint a surveyor. The Department of Land Affairs then performs an environmental screening and presents a report if necessary. The Department of Land Affairs and the Department of Agriculture compile a farm business plan and check the quality of the business plan. Training needs (e.g. agricultural, financial, legal entity determination of start-up costs, land development, infrastructure) are identified. A valuation report is obtained and made available to applicants for price negotiations with the land seller. The DLA helps applicants in negotiating an option to purchase land and also provides assistance in the formation of a legal entity. The project application package is then submitted to the DSC for assessment (Land Reform for Agricultural Development Report 2003).

3.7.3. Approval

The DLA submits the project package with memorandum that recommends approval of the project to the Provincial Grading Committee. The Provincial Director signs the memo and thereby releases the grant. An approval memo is then returned to DLA District Office, which then transfers the grant to the applicants (White Paper 2003).

3.7.4. Transfer

The Department of Land Affairs appoints a conveyancer and issues a letter of instruction to the conveyancer to proceed with the transfer. The Financial Officer releases funds for land acquisition to the seller and payment of the conveyance. Transfer details are submitted to the DLA District Office. The DLA obtains relevant subdivision permits and documentation and issues an order to transfer the balance of the funds for start-up costs (capital requirements for development) to the relevant service provider based on the quotes submitted by applicants (White Paper 2003).

3.7.5. Post-Settlement Support

Extension officer/mentor identified/assigned during project assessment proceeds with settlement support by the DLA. The DOA assists in the setting up of the farming business and they both incorporate the project into the farming sector and community and the monitoring of the project implementation as per business plan (White Paper 2006).

3.8. CHAPTER SUMMARY

Indigenous communities that were exploited and alienated from the right to own land, now have to go through a long stressful and sometimes considerably complicated process to acquire access to land. The Land Reform Programme of South Africa involves three programmes, Land Restitution, Land Redistribution and Land Tenure. The cases (Basotho Letjhabile and Maolosi Trust) fall under the Land Redistribution for Agricultural Development and sub-programme of the Land Redistribution Programme. The Land Redistribution for Agricultural Development

Programme is designed to provide grants to previously disadvantaged South Africans specifically for agricultural purposes. An understanding of the processes involved in South African land reform provides insight into how the Basotho Letjhabile and Maolosi Trust projects were acquired.

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

4.1. INTRODUCTION

According to Terre Blanche and Durrheim (2006), the methodology provides a detailed description of how the research is conducted, what type of research design is used and why, the sample or sampling technique, data-collection techniques and which instruments are used and why.

This chapter begins with the reason that motivated the researcher to investigate the given issue. It also provides a concise description of the conditions which led to the selection of the topic of research. It then sketches the areas of study, the sample population, the methods and techniques used to identify and collect data, data analysis, the expected outcomes and study assumptions.

The selection of the special procedures followed was to a large extent influenced by the topic chosen, the environments of study, the experiences of the researcher and the anticipated outcomes. The procedures followed are outlined and the data-collection instrument is described and the data collected are analysed and interpreted thematically.

4.2. CHOICE OF TOPIC

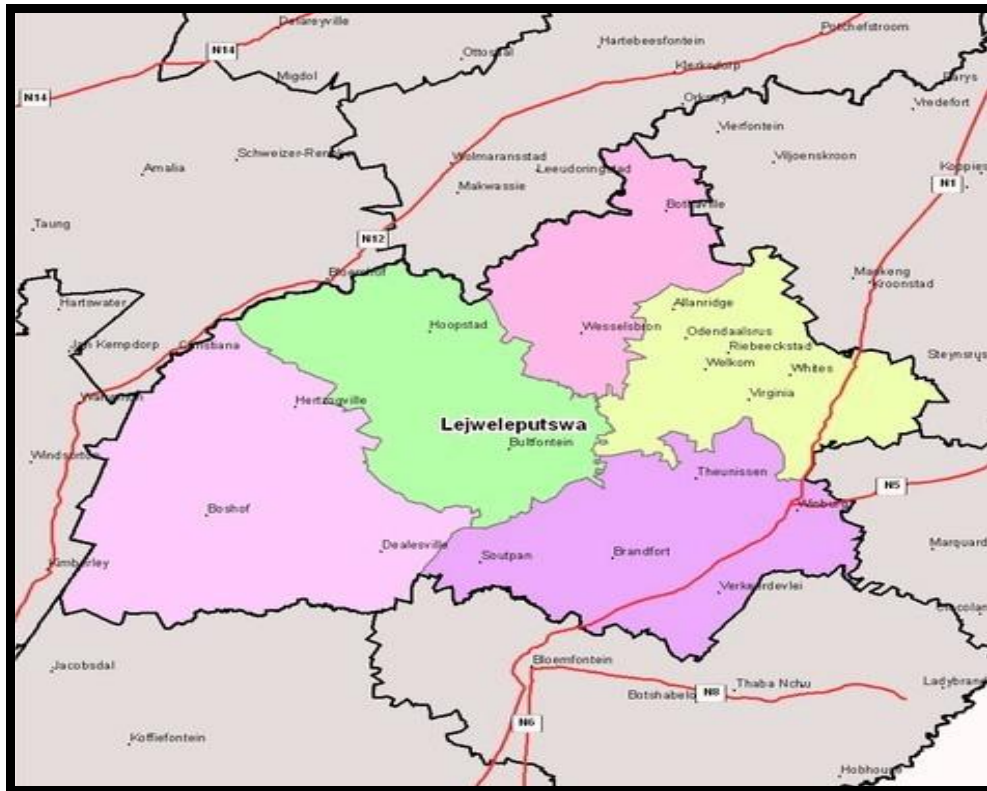
Development projects that involve the use of indigenous knowledge have proven to be successful because they clearly identified the people's indigenous knowledge within the projects and how to use it in sustainable development (Sillitoe *et al.* 2005: 1). Hence, the researcher strongly believes that if the members of the Basotho Letjhabile project and Maolosi Trust project are able to identify their indigenous knowledge within these land reform projects of agricultural development, sustainable development and transformation will be attained. Sustainability and transformation will be

achieved if the project members can identify, appreciate and preserve their indigenous knowledge by continuously practising it within these projects.

4.3. DESCRIPTION OF STUDY AREA

The study is carried out within two different projects (Basotho Letjhabile and Maolosi Trust) in two different communities. The Basotho Letjhabile project is located near the town of Wesselsbron in the magisterial District of Wesselsbron. The town and the project are within the Nala Local Municipality in the Lejweleputswa District Municipalities. The project is on the farm called Rietkuil No. 182, which covers 1 350 hectares.

The Maolosi Trust project is located near the town of Soutpan in the magisterial District of Bultfontein. The town and project are within the Tswelopele Local Municipality in the Lejweleputswa District Municipalities. The project is located on a portion of the Soudal No. 947 farm, which covers 28 hectares. The following map indicates both towns and municipalities.



Picture 1: Map indicating location of both study communities
(www.demarcation.org.za)

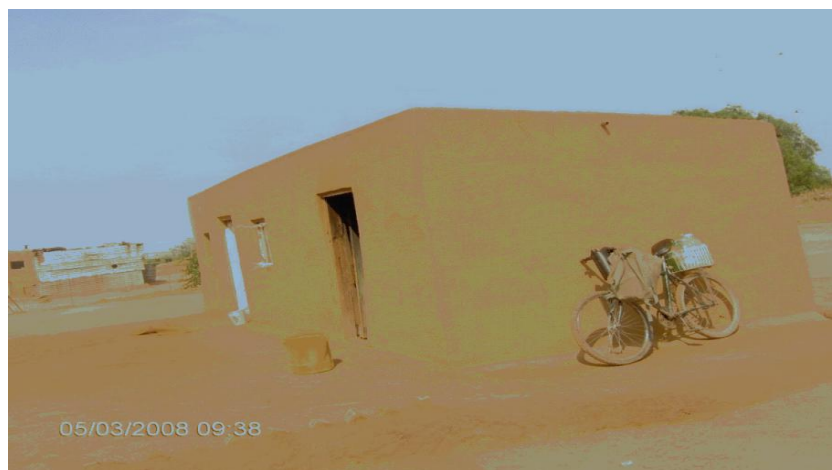
4.3.1. Geographical Description of Communities

The Lejweleputswa District Municipality is situated in the north-western part of the Free State and borders the Northwest Province to the north, the District Municipalities of Fezile Dabi and Thabo Mofutsanyane to the north-east and east respectively, Motheo and Xhariep to the south, and the Northern Cape Province to the west. Lejweleputswa District Municipality is situated north of Mangaung Municipality in the Free State Province and is accessible from Johannesburg, Cape Town, Klerksdorp and Kimberley through one of the national roads, the N1. The district comprises the second-largest area in the province with 24,3%. The Lejweleputswa District consists of five local municipalities; Masilonyana, Matjhabeng, Nala, Tokologo and Tswelopele. The projects of the Maolosi Trust and Basotho Letjhabile fall under the Tswelopele Local Municipality and the Nala local Municipality respectively (Tswelopele Review 2005; Integrated Development Plan Review 2005-2006).

4.3.2. Social Structure

The research participants all live in farm houses. The people of the Basotho Letjhabile community have developed an area for their residence on the farm with all households close to each other. The participants of the Maolosi Trust project do not reside on the farm but live on another farm close to the town of Bultfontein owned by them as well. Basotho Letjhabile has secure housing for each family in the trust. There are rules about how housing can expand and who is permitted to live there. However, basic services are not rendered as there is no sewage system, electricity or waste collection. Water is pumped from a borehole to a single tap.

Their houses are constructed with both modern bricks and indigenous materials. The indigenous houses are built with the use of cow dung and mud. Cow dung is collected from the grazing fields and mixed with mud. The mixtures are then smoothed and used to plaster the walls and floor. It takes three to five days to get dry when conditions are good (sunny with no rain). The picture below is an example of the indigenous house made from cow dung and mud.



Picture 2: An indigenous house made of cow dung and mud

Electricity supply is a major problem for both communities. Although the people of the Basotho Letjhabile community have tried to devise a means of power by using solar energy, there is still a great electricity problem since they cannot afford a high-energy generator. Access to tap water is also

another major problem in both community projects. This problem has been addressed in both communities by digging wells and dams to store water. This water is used for general needs and also for agricultural purposes to water the crops.

4.3.3. Livelihood

Trustees in both cases (Basotho Letjhabile and Maolosi Trust) indicated that they relied on a number of livelihoods for their general survival. A few men and women from the Basotho Letjhabile Trust indicated that they receive old-age pensions; some also indicated that they receive child grants. The children of the Maolosi Trust also indicated that they receive monthly salaries from their jobs. Trustees in both cases (Basotho Letjhabile and Maolosi Trust) also indicated that their produce served as a major source of livelihood.

4.3.4. Procedure

The sample consists of members from both projects (Basotho Letjhabile and Maolosi Trust). An introductory meeting was carried out separately in both communities to seek their willingness to participate in this study. Focus-group discussions and in-depth interviews were held at convenient venues (which participants found convenient for them and preferably a quiet place to ease recording). Participant observation was used in field situations, which could not be recorded directly. The recorded conversations were transcribed and represent the raw data. Before conversations were recorded, permission was obtained from the participants. The confidentiality of the participants was also ensured. Participants were assured that their identity and responses would not be made public without consultation. This is achieved by safely storing the audio files away from outsiders. Data acquired from both case studies were treated separately to allow for comparison.

4.4. DESCRIPTION OF SAMPLE

Case study research is not sampling research (Yin 1993; Stake 1995). However, selecting cases must be done so as to maximise what can be

learned in the period of time available for the study. This study has a sample population of 43 participants who are the project members of both projects. There are 36 participants on the Basotho Letjhabile project, and seven participants on the Maolosi Trust project. The projects were purposively selected among a list of projects provided by the Department of Land Affairs. Both projects were selected because they are agricultural projects and easy to access by the researcher.

4.5. STUDY POPULATION

The Basotho Letjhabile Trust comprises nine male heads of households, but 36 beneficiaries received grants. The Moalosi Trust comprises a single male headed household and seven beneficiaries. The sample consists of 16 women, 13 from the Basotho Letjhabile project and three from the Maolosi Trust project. It also consists of 27 men, 23 from the Basotho Letjhabile project and four from the Maolosi Trust project. The basic characteristics of the study population in terms of sex, age, marital status and the frequency are presented on the following tables.

SEX	BASOTHO LETJHABILE PROJECT		MAOLOSİ TRUST PROJECT	
	Absolute Frequency(n)\	Relative Frequency (%)	Absolute Frequency(n)	Relative Frequency (%)
Male	23	63.9	4	57.1
Female	13	36.1	3	42.9
TOTAL	36	100	7	100

Table 1: Sex distribution

From Table 1, it can be seen that a greater percentage of the participants are men, i.e. 63,9% for the Basotho Letjhabile project and 57,1% for the Maolosi Trust project as opposed to the women which comprised 36,1% for the Basotho Letjhabile project and 42,9% for the Maolosi Trust project.

Age range	BASOTHO LETJHABILE PROJECT		MAOLOSİ TRUST PROJECT	
	Absolute Frequency(n)	Relative Frequency (%)	Absolute Frequency(n)	Relative Frequency (%)
20 - 30	14	40	1	14
31- 40	5	14	4	57
41-50	3	8	0	0
51 -60	8	22	0	0
60-and above	6	16	2	29
Total	36	100	7	100

Table 2: Age distribution

Table 2 indicates that a greater percentage of the Basotho Letjhabile community fall under the age range of 20–30 (40%), while a greater percentage of the Maolosi Trust community project fall under the age range of 31–40 (57%). The above table also indicates a positive statistic since the majority of the population fall under the working age range 20–40. This may be considered positive for both projects as it ensures continuity in the event of the passing away of older members.

4.6. DESIGN OF STUDY

This study is based on comparative case study research. According to Creswell (2007: 93), case study research is a qualitative research approach in which the investigator explores a bounded system or multiple bounded systems overtime, through detailed, in-depth data collection involving multiple sources of information, and reports a case description and case-based themes. This study represents two studies involving the Basotho Letjhabile project and the Maolosi Trust project.

Yin (1993) identifies three specific types of case studies: exploratory, explanatory and descriptive. The study is explorative because it allows for more insight to be gained on the topic of investigation. According to Babbie and Mouton (2001), exploratory studies usually lead to insight and comprehension; hence the choice of this research. The study explores in

depth the indigenous knowledge of the two cases to gain sufficient insight of the level at which indigenous knowledge is applied within both projects.

4.7. TYPE OF STUDY

This study involves empirical collective case studies wherein one issue (IK) is selected and two case studies (Basotho Letjhabile and Maolosi Trust) are used to illustrate the issue (IK) (Creswell 2007). It involves a single issue (indigenous knowledge) illustrated by two different community projects. This involves the use of primary data and secondary data. Yin (2003) suggests that a collective case study design should use the logic replication, in which the inquirer replicates the procedures for each case. This is true for this study as the same procedures are used for both cases.

4.8. DATA-COLLECTION TECHNIQUES

Studying a people's culture or general way of life necessitates observing the people as far as possibly first-hand. As a preparatory task, literature on the history and other aspects of other Bantu cultures in general, and the Basotho and Tswana in particular, were investigated and explored.

Data were collected via methodological triangulation. Denzin (Babbie and Mouton 2001: 226) defines triangulation as the use of multiple methods and a plan of action that will raise social science researchers above the personal biases that stem from single methodologies. Case studies are known to be triangulated research strategies. Feagin *et al.* (1991) asserted that triangulation can occur with data, investigators, theories, and even methodologies. According to Terre Blanche *et al.* (2006), methodological triangulation refers to the use of multiple methods to study a single problem, looking for convenient evidence from different sources. Triangulation of data helps to strengthen the research findings and conclusions. A methodological triangulation of focus groups, in-depth interviews and participant observation were used to ensure the credibility of the data collected.

Secondary data were also obtained from the Department of Land Affairs on the procedures involved in the application and qualification for the grants applied for by these Land Redistribution for Agricultural Development projects. Secondary data are used to gain a general picture of both projects and how they acquired the land necessary for the projects. The secondary data are acquired from sources such as the White Paper Report of Land Affairs in 1997, 2003, 2006, and 2007 and a LRAD Report of 2003, 2006 and 2007.

Focus-group discussions allow for the interaction of participants and provide a discursive forum (Terre Blanche *et al.* 2006) for the exchange of views and ideals that are suited to the aim of this study. Each focus group was made up of six different participants, taking into consideration factors such as age, and gender to ensure total participation. Age and gender, if not given serious consideration, may affect the data collected since certain respondents may not be comfortable to express themselves in the presence of their elders or the opposite sex. In African cultures like the Basotho culture, women and men are not allowed to participate in a discussion together. This is due to the patriarchal nature of the Basotho Culture. Each focus group lasted for an hour at least and three hours at most, with one or more coffee breaks. Each individual was given the freedom to excuse him/herself when they felt the need to leave. Below are photos of an example setting of focus-group discussions with the male members of the Basotho Letjhabile community.



Picture 4: Focus-group discussion with men of the Basotho Letjhabile project



Picture 3: Focus-group discussion with the women of the Basotho Letjhabile Project

Interviews provide us an opportunity to get to know people quite intimately, so that we can really understand what they think and feel (Terre Blanche *et al.* 2006). There are different types of interviews. Face-to-face interviews are forms of social interaction and, like other human interactions, they involve specific norms, expectations and social roles (Babbie and Mouton 2001). In-depth, face-to-face interviews were carried out with participants to get more detailed data since most participants expressed themselves better in the absence of others. The interviews were focused, short, and repeated to gather additional data to verify key observations and check given facts.

Participant observation involves the researcher being seen as a member of the group, while simultaneously observing the research phenomenon from the participants' point of view (Babbie and Mouton 2001). The researcher participated in activities such as the harvesting of maize and ploughing. Due to the researcher's active participation in field situations, observation took the form of participant observation. A digital voice recorder was used to record conversations in all situations with permission from the participants.

4.9. DATA PROCESSING

In the above data-collection process, field notes were used to record feelings and intuitive hunches, pose questions, and document the work in process. According to Yin (1993), field notes assist in determining whether or not the inquiry needs to be reformulated or redefined, based on what is being observed. In this study, field notes were kept separate from the data being collected and stored for analysis. Data in this study were categorised, tabulated as seen with the demographic information above, and recombined to address the purpose of the study.

The recorded interviews, focus-group discussions and participant observation information were transcribed into a word document. This was done by converting the recorded data from the digital voice recorder (DVR) into audio files on a computer. The audio files were then played using an audio media player (Windows Media Player and WINAMP) and the data were converted into a word document. In transcribing the data into a word document, the data are typed or written down verbatim as they appear on the tape.

4.10. DATA ANALYSIS

The transcribed data were analysed by identifying issues within each case (Maolosi Trust and Basotho Letjhabile) followed by a search for common themes that transcended the cases. A detailed description of each case and themes within each case was then provided. This was done by reading

through the transcripts and identifying issues within each case and then bringing out common themes which transcend both cases. This was done separately for both cases (Maolosi Trust and Basotho Letjhabile). This, according to Creswell (2007: 75), is called “***within-case analysis***”.

Secondly, a thematic analysis was done across the cases, called “***cross-case analysis***” as well as an interpretation of the meaning of the case (Creswell 2007: 75). This was done by analysing the themes in both cases and interpreting them in relation to the purpose of this study. After analysing the themes, they were brought together and interpreted in relation to the purpose of this study.

Finally, the cases were brought together comparatively, bringing out the degree in which indigenous knowledge is incorporated into land reform projects of development. This stage also analysed the different ways indigenous knowledge was incorporated into both projects and the contribution made by indigenous knowledge within both projects.

4.11. CONDITIONS OF DATA COLLECTION

Transport: the fact that data had to be collected for both cases (Basotho Letjhabile and Maolosi Trust) had implications for transport. The existing cross-country road system made it possible for interviews to be held in both communities on the same day at different times suiting the respondents. Four-wheel drive vehicles were rented to drive into the fields since the roads into the fields were not well-developed.

Timing: since the trustees are farmers, interviews had to be scheduled to suit their programme. Interviews could not be carried out during the weekends when they were not on the farms because they considered weekends very important for their other social activities such as attending funerals or going to church.

Subjects: pre-test interviews showed that evening visits were not always very successful since the researcher had to rush the interview because she had to travel a long way back to Bloemfontein for the night. Also, early-morning interviews were almost impossible since most of the respondents were either milking the cows, or getting themselves ready for the fields. Late-morning interviews and focus-group discussions (10:00–12:00) and early afternoon hours (14:00–17:00) seemed ideal for the study. Interviews done at interviewees' own homes proved best for in-depth discussions.

Interviewer: from the first visits to both communities (Basotho Letjhabile and Maolosi Trust), it became obvious that success in the collection of data depended a great deal on the mood of the interviewee. The interviewer had to be very sensitive when using humour. Humour also seemed to play a vital role in the focus-group discussions and interviews since it put respondents at ease and therefore facilitated freedom of expression. The interviewer also had to exercise patience, especially with the elderly who wanted questions to be well broken down before they provided their responses.

4.12. CHAPTER SUMMARY

This chapter has shown that this study is based on a comparative case study methodology illustrating data collected in two different community projects (Basotho Letjhabile and Maolosi Trust) based on a single issue (indigenous knowledge). Secondary data sources are essential in understanding the case or situation to be investigated. The White Paper Report of Land Affairs of 2003, 2006 and 2007, and the LRAD Report of 2003 and 2006 provide an understanding of how both community projects (Basotho Letjhabile and Maolosi Trust) developed. Field notes are very important in carrying out a research study such as this, as they play an important role in keeping the researcher immersed in what is being observed or explored. When dealing with different cases with a single issue of investigation (indigenous knowledge) as is the case with this study, it is essential to do a cross-case analysis of the cases (Basotho Letjhabile and Maolosi Trust) as it brings out a clear understanding of both cases. Also,

accurate timing is essential for the success of a study that involves farms as the activity schedule and availability for interviews may change with the weather.

CHAPTER 5: PRESENTATION AND DISCUSSION OF DATA

5.1. INTRODUCTION

This chapter presents data acquired from both cases presented thematically within the different cases and also across both cases. It looks at the social structure of projects, their functionality, and patriarchy as conceived within both cases (Basotho Letjhabile and Maolosi Trust), and the different agricultural activities involved in both projects. It also brings out what the project members of both projects understand as their IK and how it is applied within both projects. This chapter also brings out the various rituals and taboos associated with agriculture within both projects. It provides a comparative analysis of both cases with regard to their indigenous agricultural knowledge. Literature as listed in Chapter Two of this report is also compared against the data collected. The indigenous Sesotho and Tswana names of agricultural produce within both projects are also listed to provide a picture of what is cultivated in both agricultural projects.

5.2. BASOTHO LETJHABILE

As mentioned earlier, the Basotho Letjhabile Trust comprises the nine male heads of households, while 36 beneficiaries received grants. The nine families that make up the beneficiaries have lived and worked together for more than 15 years. Previously, they were employed by the same farmer, who left them to farm the land when he retired. There exists a high level of social cohesion between the project members because they have previously worked together. This social cohesion can be both positive and negative. On the positive side, it enables the Trust to function effectively, to make rules which are obeyed and to take business decisions concerning the farm management. On the negative side, social cohesion can also be a form of control and this is evident in the way female and the young are excluded. Those not included in the Trust are all women and youth and are completely excluded from the running of the Trust and its finances. This raises the

potential for conflict in future, as well as problems with succession planning, since the male trust members are very dominant on the farm, and are getting on in age. They are highly resistant to the idea of women playing any role in the farming activities.

5.2.1. Functionality of Project

Most men said the Trust met regularly. This, they said, was possible since they lived close to one another. Because of a long history of living and working together, it is easy for the Trust to take decisions and it works well. Strong social cohesion between the men helps with effective decision-making as well as rule-making and enforcement. Rules apply to all members and their families, and it is not clear if people can appeal against the rules or the enforcement thereof. This is because everyone shied away when asked if they could appeal against any rule. There is no tradition at all of consulting other beneficiaries on any matter.

The Basotho Letjhabile trustees indicated that there had been general success in the project over the years. They said production had improved over the years with increasing numbers of livestock and improved crop yields. Success in the home gardens has also served for subsistence over the years. The land has been able to provide adequate grazing for the livestock over the years. On appearance, the researcher found the farm to be flourishing with an ordered farmstead, neat houses, large tracts of cultivated fields, healthy crops (especially the maize), extensive and neat home gardens and healthy livestock. The trust members appeared quite prosperous with smart clothing and cars. Based on personal observation and interaction with the Letjhabile project, the researcher deems this project to be successful and prosperous as it meets their stated objectives of practising commercial agriculture and establishing a sustainable livelihood.

The members of the Basotho Letjhabile project openly value their indigenous knowledge and the researcher found IK to be integral to their daily activities including farming, gardening, handling of livestock, rituals, beliefs, gender relations and taboos. The most important activity on the farm, namely large-

scale agriculture, utilises an integrated knowledge base of indigenous and modern agricultural knowledge that function in a complementary fashion, which is illustrated in the subsequent discussions.

5.2.2. Patriarchy

The male trustees rely on the custom that when gathered together as men, a better solution to a problem can be arrived at as opposed to when women are involved. Decision-making is best possible in the absence of women and children. The men see the role of women confined to the kitchen, cooking food and taking it to the men in the fields. Because of the male trustees' patriarchal attitudes towards women and young people and their exclusion from the Trust's business, the issue of accountability arises. For, to whom are the nine trust members accountable? Currently, this is not perceived as a problem because the Trust is authoritative and commands respect.

The role of women is not specified. They contribute in the management of the local home gardens and at times in the harvesting process to pick up maize that fell on the ground. Women also attend empowerment meetings set by NGOs on behalf of the men who are always busy at the fields. In focus-group discussions and in-depth interviews with the women and children on their perspective of the project, they gave the following views:

The women and children believe that the best way to improve the development of the project is that the fathers (project leaders) should educate the youth by sending them to school to study agriculture and ways to improve the productivity and sustainability of the project. Women believe that their close attachment to the tradition (patriarchy) makes it extremely difficult for them to enter the decision-making process with the men to further develop the project.

5.2.3. Agricultural Activities

The Basotho Letjhabile Trust is involved in livestock and crop agriculture. Cultivation is for commercial purposes as well as livelihood. The main livestock involved in this project are cows, sheep, pigs and chickens. In

choosing the livestock, they use their indigenous and local knowledge. The yield of meat produced by cows and sheep is considered when choosing sheep and cow breeds. The more meat it produces, they say, the better the livelihood of farming that breed, because it will bring in more income when the meat is sold.

The amount of milk produced by the cows also influences the choice of cow breed. Since the farm is located in an arid area with irregular rainfall, the ability of the livestock to survive droughts also influences their choice of livestock. The quantity of wool produced by the sheep also influences the choice. They also choose chicken breeds that produce more eggs.

The above characteristics are developed from their indigenous knowledge (acquired from generation to generation), local knowledge acquired from the community, and interaction with others from other communities. The Basotho Letjhabile Trust chose the *Vleis* Merino sheep breed because they believe it produces more milk and enough wool. This choice is based solely on their indigenous knowledge acquired from their ancestors, local knowledge acquired from the community and communication with other farmers. They own approximately 150 cattle. Below is a photo of the kind of cattle raised in the project.



Picture 5: Cow bred in the Basotho Letjhabile project



Picture 6: Sheep bred in the Basotho Letjhabile Trust

In the cattle-rearing process, the land is divided into different camps for the different types of cattle. The camps consist of calves, matured, pregnant, milking and old cattle. In preparing the camps, the men get into the fields and look at the land using their indigenous knowledge of soil types to choose which land is good for grazing. They believe that rocky land is bad for grazing. Coverage is less on rocky land and the animals could get hurt by the rocks.

Despite grazing for commercialisation, the Basotho Letjhabile project members regard flock ownership as part of their culture, attached to wealth and social status. They acknowledge that in the Basotho culture, a man is considered strong or holds a high social status depending on the number of cattle he owns. A large herd can get a man as many women as he can afford.

Crops cultivated in the Basotho Letjhabile project include *pone* (Sesotho word for maize), peanuts, watermelon, and sunflower. Two types of maize are cultivated, namely the white and yellow maize and it is done across a very extensive portion of the land. They prefer yellow maize to the white maize because they believe it tastes better and is more lucrative, since its sales are higher compared to the white maize. Maize production is the

largest sector of crop production in this project, and it brings in the most income.

They carry out crop rotation between peanuts and maize. Watermelons are also cultivated, but only in small quantities because they are more susceptible to pests such as snakes and other crawling insects. They believe that peanuts help to enrich the soil. After harvesting peanuts on a given plot, maize is then planted on that land since they believe that the fertility has increased. The Basotho Letjhabile project also produces sunflower. This is done on a small scale because of the lack of the necessary ploughing equipment. They are willing and desperate to increase the production of sunflower as soon as they can afford the necessary implements.

Before cultivation, the Basotho Letjhabile trustees call in soil experts to test which soil will be appropriate for cultivation of a given crop. They also use artificial fertilisers acquired from *SENWES* to enrich the soil for large-scale production. They do not use experts to determine which soil is best for home gardens. They say they determine which soil is best for home gardens just by looking at the soil and the freshness of the grass found on it. They also use manure made from animal dung to enrich the soil in the home gardens. The farming practices of the Basotho Letjhabile project therefore reflect a combination of conventional and non-certified organic or agro-ecological production techniques which, according to Parrott *et al.* (2006) is becoming more popular all over Africa.

Apart from cultivating for the market, the Basotho Letjhabile project members also practise small-scale gardening. Gardens are owned separately by each household. Spinach, potatoes, carrots, leeks and beetroot are some of the crops and vegetables cultivated in the gardens. In the preparation of the garden, small plots are ploughed, animal dung is then scattered over the land and the land watered. The land is then left for 2–5 days to allow for soil enrichment before the vegetables are planted. Flat beds are made with slightly steep sides to prevent the flow of water away

from the crops. Fences are also built around the plots to prevent animals from destroying the crops. The photos below give us a picture of how gardens are prepared and how they look fallow as well as with plant growth.



Picture 7: Manure plot



Picture 8: Vegetable gardens

Women play a major role in the maintenance of these gardens. They regularly dispose of weeds and water the crops. Despite their role in these gardens, these women are bound by community customs. Women are not allowed to walk across the beds because the customary belief is that they will destroy the crops and consequently men will not consume the produce. Menstruating women are also forbidden from getting into the gardens. They

believe that menstruating women will hinder the growth of crops. Menstruating women are also not allowed in the fields or close to livestock because of the belief that they will affect the health of the livestock and yield of the crops.

5.2.4. Understanding of Indigenous Knowledge

The Basotho Letjhabile Trust members perceive their indigenous knowledge as part of their everyday life. One of the fathers stressed that “there is a great bond between our agricultural practices and that of our forebears, who practised agriculture as a life-style”. One of the fathers stressed that “we do use our indigenous knowledge within this project, but indigenous knowledge with regard to aspects such as circumcision is not practised here”.

Most of the men involved in the Basotho Letjhabile project define their indigenous knowledge as knowledge acquired from their ancestors. Some say it is knowledge used in their everyday life that is passed on to their kids, who perpetuate it from one generation to the next. One of the fathers also pointed out that their indigenous knowledge with regard to agriculture is practised within this project, with the only difference being the implements they use and the extent of cultivation. As an example, one of the fathers said if a chicken is sick, he will try any herb that he gets from the field, crush it and add any liquid, say, for example, water, and give it to the chicken to drink. If the chicken gets well from drinking this herb, he passes this knowledge to his kids, who would then pass it along generational lines. This practice indicates the production of indigenous knowledge through trial and error or falsification, similar to empirical science.

The most common indigenous herb used in curing sick chickens in this community is the *lekgala* (variety of the *aloe vera* plant with small leaves found in arid regions). *Lekgala* is ground and mixed with water and then poured into broken clay pots, carved rocks or bowls placed around the compound so the chickens can drink as they roam. The *lekgala* is also planted around the compounds because they believe it keeps away reptiles, most notably snakes. The *lekgala* plant is represented on the picture below.



Picture 9: The *lekgala* plant (*Aloe Vera*)

The women and children of the Basotho Letjhabile Trust believe that their indigenous knowledge plays a very important role in the functioning of the Trust. They see indigenous knowledge playing a vital role in the decision-making process and respect of the elderly as stated by the Basotho culture. One elderly woman says this is essential in maintaining peace and order within the Trust. Most women and children also stressed the role played by indigenous knowledge in various stages in the agricultural process. They say the fathers connect with their ancestors from the ploughing to the harvesting stage in the project. This can be seen in the rituals performed by the fathers before ploughing and after harvesting. This will be discussed in a forthcoming section.

5.2.5. Incorporating Indigenous Knowledge in Agriculture in the Basotho Letjhabile Trust

This involves the various ways in which the Basotho Letjhabile project members incorporate their indigenous knowledge within the agricultural process. This can be sub-divided into different areas such as livestock tending, ploughing, and harvesting.

5.2.5a. Livestock Tending

The main types of livestock involved in the Basotho Letjhabile project are cattle, sheep, pigs and chickens. Cattle and sheep are more numerous

compared to pigs and chickens and are reared mostly for commercial purposes. Pigs and chickens are raised for subsistence within the community. As mentioned earlier, the Basotho Letjhabile Trust chose the *Vleis* Merino sheep breed because they believed it produced more milk and wool than other sheep. This choice is based solely on their indigenous knowledge and communication with other farmers. They own approximately one hundred and fifty (150) sheep. They place the livestock in different camps depending on factors such as species (cows and sheep) and the age range (calves, pregnant, milk producing and meat production). Pigs are reared in fences, preventing them from getting into the fields and gardens where they might destroy crops.

In case of any cattle disease, indigenous knowledge is used in the identification of the disease. The Basotho Letjhabile men say they are all able to identify a sick animal. A sick animal (cow and sheep) is identified in the way their ears fall and the presence of foam around the mouth of the animal. Different symptoms exist for pigs and chickens. A sick pig is identified in the way it feeds (if it eats less than it normally does, there is suspicion) and the noise it makes (sick pigs cry out louder than healthy pigs). If a pig feeds less than normal, then they presume that it is sick. This was pointed out by both the men, women and children involved in the Basotho Letjhabile project. A sick chicken is identified by its faeces and its movements. A sick chicken passes watery faeces and is also found sitting around instead of its usual roaming.

Indigenous knowledge is also used by the Basotho Letjhabile project members in the treatment of diseases. In the treatment of livestock diseases (cows and sheep), a traditional herbal medicine called *kalpe*, meaning fish acquired from the ancestors, is used. This medicine is given in different dosages to cows and sheep. The cows receive a higher dosage than the sheep and dosage depends on size and age of the animal. Most men said that diseases in pigs are too complicated to deal with; so they purchase modern medicine and mix it with crushed maize to feed the pigs. Chicken sickness, as mentioned earlier in the study, is treated using the *lekgala*.

Lekgala is ground and mixed with water and administered by pouring it into various vessels placed around the compound so the chickens can drink as they roam. In situations where the chickens cannot move independently to drink this medicine, the men will administer the medicine manually.

5.2.5b. Ploughing

Ploughing in the Basotho Letjhabile project is done extensively for commercial purposes. Extensive ploughing entails the use of the right implements. Experts from the Department of Land Affairs and the Department of Agriculture are used to analyse the soil before ploughing can be done on a given tract of land. The Basotho Letjhabile project members own two tractors, one of which is not functional. Various other implements are used to plough the fields. Before the fields are ploughed, they are treated with artificial pesticides and fertiliser, which the men purchase from *SENWES*.

White lime is also used on the land to maintain its fertility. They say white lime can be sustained in the soil for a period of up to five years. Also, in order to sustain the soil, some remains of the crops are left in the soil to decay. The men believe that this will improve the quality of the soil. This knowledge of the use of white lime is acquired from their ancestors and the community at large.

The project members say they plough mostly in the months from October to December as this is when it rains. The Basotho Letjhabile project depends mainly on the rain as a source of water and they plough after the first rains to ensure that the crops are firmly established before the next rains. Before ploughing, the soil is first tested to see if it is hard enough for ploughing. Ploughing is not done immediately after the rains because the soil is muddy and the tractor and implements may become stuck in the soil.

The men of the Basotho Letjhabile project plough from 7:00 until 10:30 before the heat of the day becomes too intense. The men separate themselves into two groups. While some go into the fields for ploughing,

others milk the animals. They say ploughing is done on hard and stony soil a day after it rains, as the soil is then soft enough to plough, yet sufficiently dry and not muddy. On softer soil they will wait a few days for the soil to dry out before they plough.

Manure and ploughing: in the preparation of the gardens, the fathers of the Basotho Letjhabile project use local manure (from cow dung, for example) to enrich the soil. After ploughing the plots, manure is then scattered over the plot and watered. Most of the partners say they pour water on the manure because they believe that manure decomposes faster when wet thereby sustaining earthworms. These gardens are close to their houses and also close to the borehole to ensure regular watering. Manure is gathered from cows, sheep, pigs and chickens.

Most woman point out that manure is essential in the gardens as it contributes greatly to the fertility of the soil. Before ploughing is done, most of the fathers come together to perform a ritual begging the ancestors for a better harvest for that year. Some of the fathers go to church to pray to God to bless them with a good harvest. They may even invite a pastor from the local church to come over to the fields to bless the land. Most of the fathers say they take a pilgrimage to a sacred site to pray and request the ancestors to bless the crops. Pilgrimage and prayers are not only for a good harvest but also for prevention of fire, droughts and theft.

5.2.6. Harvesting

Most planting is done in November and December, and harvesting from March until July. Maize, which is the most cultivated crop within the Basotho Letjhabile project, is harvested as green *mielies* (roasted or boiled) from January to April. Maize is harvested dry in June and July, much of which is sold to *SENWES*, while some is used as flour within the community households. Some is also stored as seeds for the next planting season. The selection of the seeds for the next planting season is based on the physical appearance of the maize. The men of the Basotho Letjhabile project all agree that the choice of seeds for the next planting season depends on the

appearance of the maize grains. The bigger the maize kernels, the greater the prospects for the next planting season.

Peanuts are selected taking into consideration the size of the legume. For watermelons, the size of the watermelon plays a major role in determining which seeds will be stored for the next planting season. The selected seeds are then taken to *SENWES* to be preserved for the next planting season. Some of the maize is also stored by individual households for future consumption. In an interview with one of the fathers, he indicated that he preserves maize in a sealed container where he poured in ash obtained from burning maize kernels. This, he said, prevented pest and other insects from eating the maize. After harvesting, a thanksgiving ritual is performed by each individual household. Some households take 10% of their harvest to the church while other households offer sacrifices to their ancestors.

5.2.7. Indigenous Knowledge and Vegetables

Leafy vegetables are seen as the domain of women, while the cereals and grains are regarded as a male domain. However, most women proved knowledgeable about most plants, including grains. Girls tend to know only common and abundant traditional vegetables. This is because they spend most of their days cooking and doing laundry. At times they also go into the town of Wesselsbron and Welkom to search for jobs as shop assistants since their fathers are not willing to send them to school. The children notably show less interest in the rituals and taboos associated with agriculture. One said, “the taboo associated with a menstruating woman getting into the gardens is stupid. What if she is alone and she urgently needs some vegetables to cook for the family who will not return home until late?” This is an indication that the youths shun some of the indigenous taboos associated with agriculture.

5.2.8. Milking Cows

Milking is done by the men of the Basotho Letjhabile Trust. This is done manually because they lack the necessary modern implements. Most of the men claim their knowledge of milking was acquired from their forebears.

Milking is done very early in the morning so that the cows have enough energy necessary for the process. Before milking, the cows are fed with a special meal made from a mixture of salt, lime, red maize and water. Most of the men say this helps increase the quality and quantity of the milk. The cows are assembled in a line and manually milked one after the other. Immediately after milking, the cows are given enough food to regain their strength. The milk is consumed by the project members and some is sold to the neighbouring communities.

5.2.9. INDIGENOUS RITUALS ASSOCIATED WITH AGRICULTURE

5.2.9a. Good Harvest and Thanksgiving Rituals

As mentioned, the Basotho Letjhabile project members perform rituals before ploughing (for a good harvest) and after harvesting (thanksgiving). Some households perform these rituals via the church. The church gives permission for the ritual to be performed through the prophets. Most families who practise indigenous rituals, said their ancestors came to them in the form of a dream to tell them what type of ritual to perform. In an interview with one family on how the ancestor ritual is performed, they said it was done by offering sacrifice to the ancestors. These sacrifices also include the brewing of an indigenous beer called sorghum beer and the slaughtering of sheep. This ritual is called *pou ya Badimo*, which mean 'sending to the ancestors'.

According to the Basotho Letjhabile project members, when they first acquired their land in 2003, a large thanksgiving ritual was performed involving all project members, families, friends and other community members. A sheep was slaughtered and its blood poured on the soil while chanting and calling for their ancestors to come and celebrate their joy and to bless the soil with good harvests.

Sorghum is a common name for corn-like grasses native to Africa and Asia, where they have been cultivated since ancient times. They grow up to 3 m (10 ft) tall and bear seeds on the terminal heads, or panicles (Smith and

Frederiksen 2000). Most women also pointed out that they played a major role in the preparation of the sorghum beer. The sorghum beer preparation involves the following stages as indicated by the members of this family:

- Firstly, the sorghum is soaked in water and allowed to ferment for about two days at appropriate temperatures. The sorghum also shoots roots during fermentation.
- Secondly, the sorghum is taken out of the water and crushed into a mush.
- Next, the crushed sorghum is boiled and allowed to cool down to a given temperature. Yeast is then added to the boiled sorghum porridge.
- Last, but not the least, the sorghum porridge is allowed to ferment for two more days.
- Finally, the sorghum is consumed as a sweet beer.

The children from this household say the brewed sorghum beer and the meat are placed outside the house at night and every member of the household is made to go to bed very early on that day so that the ancestors can come and receive their gifts. When they wake up early the next day and the sacrifices are gone, the implication is that the ancestors were pleased with their sacrifice. If the gifts are still there, the ancestors were not pleased.

5.2.9b. Rain Ritual in the Basotho Letjhabile Project

The notion of ritual as stated by Bell (1992) first emerged as a formal term of analysis in the nineteenth century to identify what was believed to be a universal category of human experience. A ritual is more or less a repeatable act which instead of a purely functional normal dimension gets a symbolic dimension, through formalisation, stylisation and situating in place and time (Post 2008).

The Basotho Letjhabile project depends solely on the rain as a source of water for the growth of their crops since they lack access to irrigation

facilities. Despite the presence of a well and windmill to pump water, this water is only enough for their domestic use and the home gardens. Rainwater therefore plays a very important role in the agricultural productivity of this project. To determine the prospects for rain, most of the participants – both men and women of the Basotho Letjhabile project – proved knowledgeable. They say this can be determined by looking at the direction of the wind and the movement and colour of clouds. If the wind blows from the east they assume that there is a possibility of rain within a day or two.

If there is no prospect of rain, the men of the Basotho Letjhabile project perform a ritual to seek the help of their ancestors. They undertake a pilgrimage to a sacred site to invoke the spirits of their ancestors to give them rain. They do not just invoke the ancestral spirits for rain, but for enough rain necessary for the growth of their crops. The rain shouldn't just come for germination and let the plants wither as they do not grow tall, nor should the rain be too much to wash the crops away. Below is an example of a prayer for rain practised in the Basotho culture.

PRAYER FOR RAIN

O Soloane (Renovator)! We seek rain

Oh, where is the rain?

Lord, give us rain.

We remain always thirsty

The cattle too are thirsty.

Soloane, where is the rain.

(Ellenberger and Macgregor 1963: 253)

5.2.10. Indigenous Taboos Associated with Agriculture

A taboo is a moral or cautionary restriction placed upon certain actions by authorities (Bagley 1969) (kings, priests, shamans, ancestors, etc.) of a people which, if ignored, will result in specific negative consequences. The Basotho Letjhabile project members as mentioned before, have some

taboos associated with their agricultural practice. Women are forbidden to walk across the beds because custom dictates they will destroy the crops and the men will not consume the produce.

Menstruating women are also forbidden from going into the gardens. They believe that menstruating women will hinder the growth of crops. Menstruating women also are not allowed in the fields or close to livestock due to the belief that they will affect the crops, making them die off or yield less. Pregnant women are also forbidden from working in the fields. One of the mothers said breastfeeding women, like menstruating women, are considered to be unclean or 'hot'. This 'heat' they believe will 'burn' or contaminate the crops resulting in a poor harvest. Breastfeeding women are forbidden from working in the gardens for close to three months after birth. When she feels ready to enter the gardens, she must mix some of her breast milk with soil and cast over the garden. This, they believe, will overcome her 'unclean' state, making her unable to destroy the crops.

The Basotho Letjhabile project members generally agree that it is a taboo for women to be present in the discussions of the men without seeking permission from the fathers. It is taboo for a woman to insist on participation in discussions with the fathers involved. This is because the men believe they can better arrive at constructive decisions as men on their own than in the presence of women.

All members of the Basotho Letjhabile Trust agreed that it was taboo to plough the fields after the death of a community member. When a community member dies, production is greatly affected since one is not allowed to plough before the burial and also close to two weeks after the burial. They believe this accords respect for the dead person, and it is a sign of mourning the dead.

5.2.11. Indigenous Uses of Agricultural Produce

Despite producing for commercial purposes, the Basotho Letjhabile project members use their produce for indigenous purposes as well. This involves

activities such as the treatment of diseases and soil enrichment. Different crops, herbs and other produce were identified by the members of Basotho Letjhabile as being useful.

Most project members, both men and women, identified **milk** as a very important medicine used within the community. To increase milk production, most men said they mix salt with lime, maize and water and feed the cows. They use milk for the treatment of eye diseases and poisons. For eye disease treatment, milk is dropped into the eyes to dispel the disease. In case of poisoning, a quantity of milk is administered to the patient who then passes the poison.

Cow dung as mentioned in the previous chapter is used for constructing indigenous verandas and houses within the Basotho Letjhabile community. Cow dung is also used by all households in the local gardens to increase the fertility of the soil. One of the fathers said that, while working in the fields, he sometimes used fresh cow dung to boil eggs. He puts the eggs inside the dung since it's hot and then goes into the fields for about 30 minutes. On return the eggs are ready to eat. Some women also said cow dung was used in very small quantities as a remedy for constipation. After administering it to someone who is constipated, this individual will have a bowel movement within an hour.

As mentioned earlier, the Basotho Letjhabile project members use **red maize** mixed with salt, lime and water to increase the productivity of milk in cows. Maize is also mixed with artificial/modern medicines for the treatment of diseases in pigs. The men also find maize important in soil enrichment. They say after harvesting maize, some of the maize is left on the fields to rot so as to increase the fertility of the soil. Maize also plays a very important role in the diet of the Basotho Letjhabile project members. They consume maize when fresh and also when dry and crushed. It is used to produce the Basotho traditional meal call *papa*.

Indigenous herbs from the fields are also used in the treatment of animal and other diseases. The *lekgala* is used in the treatment of diseases in chickens as mentioned earlier. One of the ladies also proved knowledgeable about an indigenous herb called *pathyaneka* (the blanket of the healer) which is found in the fields and used within this community for the treatment of bronchitis and flu.

5.2.12. Commercialising Production in the Basotho Letjhabile Trust

The Basotho Letjhabile project members sell their produce to *SENWES* and neighbouring communities. Maize, which is their largest source of income, is sold in tonnage. Income varies depending on factors such as inflation and rainfall. This year (2008), they say, has been very successful and the sales better than ever before. Fresh maize may also be sold in small quantities to the neighbouring communities. The main produce sold to neighbouring communities include, peanuts, milk, pigs, sheep and cows. The men said animals are mostly bought when there is an occasion such as death and marriage in the neighbouring communities.

5.2.13. Indigenous Knowledge in the Basotho Letjhabile Trust

Local knowledge, indigenous knowledge and traditional knowledge within this study is considered part of the knowledge base that constitutes the indigenous knowledge systems of the communities. As mentioned earlier, the term *indigenous* is preferred over *traditional* because the former includes the latter (which is limited to knowledge passed orally or by example). Local knowledge is also considered an aspect of indigenous knowledge, but it differs from tradition in that it is dynamic, diverse, sometimes contested or used euphemistically, and always socially and culturally embedded (Bicker *et al.* 2003).

The Basotho Letjhabile project possesses local knowledge used in the choice of livestock, choice of crops for cultivation, crop rotation and the use of animal dung for boiling eggs and is specific to their locality acquired through years of experience in the field of agriculture. This knowledge, they say, has been applied within the project over the years.

The Basotho Letjhabile project members also carry out traditional practices as part of their IKS. Traditional customs such as women not being allowed to sit alongside men in decision-making and the use of animal dung in the construction of indigenous verandas and houses are carried out as part of their indigenous knowledge system. This knowledge is presented in Chapter Four of this study, as indicated on pictures 4 and 5 (the focus-group discussions with the men and women of the Basotho Letjhabile project), and picture 2 (an indigenous house with mud and cow dung) respectively.

Indigenous knowledge within the Basotho Letjhabile project encompasses both local and traditional knowledge. Typical indigenous knowledge practices such as the treatment of animal diseases (the use of the *lekgala* plant for disease in chickens), rituals (rain-calling, thanksgiving and good harvest), and preparation of the fields are also carried out as part of their IKS. Therefore, local knowledge, traditional knowledge and indigenous knowledge put together form the IKS of the Basotho Letjhabile project members.

5.3. THE MAOLOSI TRUST

The Maolosi Trust project is located near the town of Soutpan in the magisterial District of Bultfontein. As mentioned earlier, the Maolosi Trust comprises seven beneficiaries from a single household. The seven beneficiaries include their father as the leader of the project, mother and children. Their father, Mr Maolosi, and wife, Mrs Maolosi, initially were nomads who moved from place to place in search of grazing land for their cattle. Mr Maolosi said he used to work as a labourer on a farm owned by a white South African before he met his wife. After meeting his wife, they decided to settle down. They then bought a few cattle (three) and registered them with the local municipality so that they could graze on the municipal land.

The municipality only allows grazers with no more than six animals. As their cattle increased in size, they had to move away from the municipal land. Mr Maolosi said he then rented land from a white South African farmer, whom he paid in the form of the milk produced by his cattle. As their cattle grew bigger, Mr Maolosi was offered free grazing by a white South African farm owner. This white farmer, he said, helped him purchase land which he still owns today near the town of Bultfontein. Mrs Maolosi said that, as their family grew larger, they needed more land so that their children could be part of an agricultural business. Her brother, who lives in the town of Soutpan, told her about this farm (the Maolosi Trust project), which she advised her children to apply for through the Department of Land Affairs. Mrs Maolosi was also born at Soutpan and she spent most of her childhood and youth there.

The Maolosi children first applied for the grant from the Department of Land Affairs, but they found out that their assets were too few to get a sizeable enough grant for the purchase of the land. They then decided to include their mother and father as part of the trustees since their father had enough assets to support the project. Most of the project members are engaged in other activities, so they hired labourers to plough the fields and look after the cattle.

5.3.1. Functionality of Project

The trust members all agreed that they met regularly. This they say is possible because they belong to the same family. Because of a long history of living and working together, it is easy for the Trust to make decisions effectively. As with the Basotho Letjhabile, strong social cohesion between the trustees helps with effective decision-making as well as rule-making and enforcement. Rules made apply to all trustees and any trustee may appeal against the rules or their enforcement. The children say their father is a very good leader of the Trust since he is more aware of the agricultural process and the problems associated with it. The Maolosi trustees work along specific guidelines for the effective functioning of the project. They all come

together at the end of each sale to sort out their expenses and decide on how to share profits.

According to Mr Maolosi, the Maolosi Trust project on the tract of land acquired through LRAD hasn't been as successful as they had hoped. The researcher observed drought conditions, stunted growth of the maize on the cultivated fields and experienced a sense of neglect all around, although the cattle looked in good condition, despite apparently poor grazing conditions. Mr and Mrs Maolosi indicated that grain farming, one of the conventional farming activities practised in the region, proved challenging on that specific tract of land due to the high levels of salinity in the groundwater. The area is known as *Soutpan*, indicating the presence of salt pans and the production of salt in the area. The Maolosi's even expressed a wish to practise salt production, given the presence of salt on the farm and proved knowledgeable regarding the practice.

The Maolosi's were very uncomfortable about the notion of indigenous knowledge, as they view it as a contravention of their Christian beliefs. They clearly indicated their preference for modern and scientific farming methods, which they applied successfully on their Bultfontein farm (not part of the LRAD programme), although with less apparent success on the land near Soutpan. Indigenous knowledge is therefore not an integral part of their knowledge base regarding farming methods, although they inadvertently still perform activities deemed to be derived from indigenous knowledge by the researcher. The Maolosi family performs a rain-calling ritual in times of drought, although they attach Christian religious significance to it, instead of an ancestral bond. Their locally derived knowledge regarding salt production, the diagnosing of sick animals and the forecasting of rain are all considered part of an indigenous knowledge system with which they no longer feel closely connected.

5.3.2. Agricultural Activities

The Maolosi Trust is involved in livestock and crop agriculture. Production is for commercialisation and the livelihood of the project members. The main livestock involved in this project is cows and sheep. Having been in the field of agriculture almost all his life, Mr Maolosi says he holds sufficient knowledge regarding animals. Other members of the Trust also claim knowledge of the different breeds of cattle. The Maolosi Trust members chose the Santa Gertrudis cattle breed because they believed it produced more meat than other cow breeds. Mr Maolosi said he had learned of this breed of cattle from his friend who was also a farmer. The Maolosi project members don't have cows for milking because they lack the necessary implements necessary for large-scale milking. The Maolosi Project members also chose the *Vleis* Merino sheep breed, as did the Letjhabile Trust. They say their reason for this choice is that they believe it produces more wool than other sheep breeds. The Maolosi Trust project members raise their cattle in camps. They hire labourers who are paid per hour to prepare the camps. The camps are demarcated by wire fences to prevent the animals from wandering out of the grazing field.

The Maolosi project members also own a bull that was acquired through the government. Mr Maolosi says he had to go through an application process to get the bull from the Department of Agriculture. They own a tractor and various implements necessary for ploughing.

Crops cultivated in the Maolosi Trust project include maize, peanuts, sorghum, and sunflowers. White and yellow maize are cultivated over a very extensive portion of the land. The yellow maize is preferred over the white maize because they believe it tastes better and it brings in more income since it sells at a higher price compared to white maize. Maize production is done on a large portion of the land compared to sorghum. In the last planting season, 70 hectares of land were cultivated with maize. Sunflower is also cultivated extensively. The Maolosi trustees indicated that before planting is done they first look at what their neighbours are cultivating, especially regarding crops such as the sunflower. This is because, if they are the only

ones planting sunflower in a given season, animals will get into the fields and destroy the crops. They prefer planting sunflower because it is resistant to drought should the rainfall disappoint in that season.

The Maolosi trustees said their sunflower production was lower than they would prefer. Sunflower production is done on small-scale, because of the lack of specialised equipment. They are willing and desperate to increase the production of sunflower as soon as they can afford the necessary implements for extensive production.

Salt production is also a major agricultural prospect for the Maolosi Trust project. Because Mrs Maolosi was born and spent most of her life in the Soutpan area, she possesses the necessary knowledge for salt production. Currently, they are not producing salt because they lack the essential equipment required for its production.

The members of the Maolosi Trust also grow vegetables such as spinach, potatoes, carrots, leeks, and beetroot on their farm close to Bultfontein, which was not acquired through land reform. Most of the vegetables they produce are for commercial purposes and is done extensively. They extensively cultivate vegetables because of their proximity to the town where they sell their produce. Like the Basotho Letjhabile project, in the preparation of the garden, large plots are ploughed, cow dung is then scattered over the land and water poured on the land. The land is then allowed 2–5 days for enrichment before the vegetables are planted. Flat beds are made with slightly steep sides to prevent the movement of water away from the crops. Different varieties of vegetable are planted separately since they mature at different rates.

5.3.3. Understanding of Indigenous Knowledge in the Maolosi Trust

The Maolosi trustees define indigenous knowledge as ‘ancestral knowledge’. They believe they have this knowledge (indigenous knowledge) passed on to them along generational lines. In an interview with Mr Maolosi, he said that, although he possessed indigenous agricultural knowledge, he did not

believe it could play any significant role, given the commercial nature of agriculture that they practised. Mrs Maolosi said she believed God played a vital role in their agricultural activity without any significant contribution by their forebears.

5.3.4. Agricultural Knowledge in the Maolosi Trust

5.3.4a. Livestock Tending

As mentioned earlier, the Maolosi trustees do acknowledge the use of their local and indigenous knowledge in agriculture. The Maolosi Trust members use their local knowledge in choosing the Santa Gertrudis breed because they believe it produces more meat than others do. Mr Maolosi said he learned of those cattle from his friend who is also a farmer. The Maolosi Project members also chose the *Vleis* Merino sheep for tending because they believed it produced more wool than other breeds. The Maolosi trustees use their local knowledge acquired from years of experience in the field to identify sick livestock.

5.3.4b. Ploughing

The Maolosi trustees plant vegetables extensively for commercial purposes. Spinach, potatoes, carrots, leeks, and beetroot are some of the crops and vegetables cultivated in the gardens. In the preparation of the garden, small plots are ploughed where dung is scattered over the land and water poured on the soil. They then allow the land for 3–7 days for enrichment before the vegetables are planted. Flat beds are made with slightly steep sides to prevent the movement of water away from the crops. This knowledge they say has always been a part of their agricultural life.

5.3.4c. Harvesting

Harvesting is done using mechanised implements. A combine harvester which is designed to separate maize into different classes is used to harvest maize. There are three categories of maize, namely first class, which contains some dirt, and third class, which contains the semi-crushed particles. The third class is used as animal feed. The Maolosi trustees said

that after harvesting they go to church to give thanks to God for allowing them to harvest from the riches of his glory. Mrs Maolosi reported that a day was set apart on the church calendar for thanksgivings where they offered a percentage of their income to God. They also have a feast where they call together the labourers, friends and families to give thanks to God.

5.3.4d. Salt Production

The Maolosi Trust members all proved knowledgeable about the salt production process, although this is not currently being carried out on the farm due to lack of the necessary equipment. In identifying the presence of salt in an area, water comes out of the soil and turns white when exposed to air. The water is then tested to determine its salinity. In a discussion with Mrs Maolosi, who has extensive knowledge about this from her forebears, she said salt production started with the pumping of brine (salt water) from suitable openings in the floor of the pan using a windmill into large relatively deep dams where concentration takes place. The brine is then allowed to evaporate in fairly shallow concentration dams for two to three days until ready for crystallisation.

Saturated brine is subsequently transferred to a series of shallow crystallisation pans where further evaporation takes place, resulting in the deposition of salt. The water filling the pans is left to evaporate completely prior to the harvesting of the salt.

The images below provide a picture of the salt-production process.



Picture 10: Salt pan

Picture 10 indicates the brine pumped into a pan and exposed to the sun for crystallisation.



Picture 11: Crystallisation

Picture 11 illustrates the beginning of the crystallisation process. This occurs after at least two to three days' exposure to the sun. Salt production contrasts with the production of other crops. This is because it does not require any rain since the salt is dissolved when coming into contact with water, whereas other crops require rain for their growth.

5.3.5. Indigenous Rituals Associated with Agriculture in the Maolosi Trust

5.3.5a. Good Harvest and Thanksgiving Rituals

As mentioned earlier, the Maolosi trustees, after harvesting, go to church to give thanks to God for allowing them to harvest from the riches of his glory. A day is set aside on their calendar for a thanksgiving ceremony wherein a percentage of the harvest is given to the church.

5.3.5b. The Rain-Calling Ritual

The Maolosi Trust depends solely on rain for their agriculture. Mrs Maolosi said she was able to determine the possibility of rainfall if fleecy clouds were observed and if the wind blew from the east. In the absence of rain, the trust members pilgrimage to a particular spot or sacred site to pray to God and ask for rain. They call this ritual *Badimo raleboha* (giving thanks to God).

Mrs Maolosi has built a special shrine out of stones where she undertakes pilgrimages. She calls it Bethel quoting, “this is where I come into contact with God”. She links the name Bethel to the story of Jacob in the Bible who ran away from his brothers and sought shelter somewhere safe. God came to Jacob in a dream where He moved up and down a ladder. Jacob then named that place Bethel. Mrs Maolosi said she encounters God at the shrine and she respects the sacredness of the site by taking off her shoes when she goes to it. Mrs Maolosi’s shrine is shown on the picture below.



Picture 12: Shrine for rain ritual

5.3.6. Commercialising Production in the Basotho Letjhabile Trust

The Maolosi trustees, like the Basotho Letjhabile Trust, sell their produce to *SENWES* and to the people of nearby communities like Wesselsbron and Bultfontein. Maize and sunflower are their largest source of income and are sold in tons. The price fluctuates depending on factors such as inflation and rainfall. They, like the Basotho Letjhabile trust members, indicated that the 2008 harvest was good compared to the previous years. They said sunflower did not perform as well in 2008 as compared to previous years but the other crops, such as vegetables that are sold in the neighbouring town of Bultfontein, did extremely well.

5.3.7. Indigenous Knowledge in the Maolosi Trust

As mentioned earlier in this study, Nel (2005: 7; 2006: 99) defines IKS as “a systemic reference to the knowledge and practices of indigenous communities constitutive of their meaning and belief systems, as well as the substantive dimension of their practice and customs. IKS is about the knowledge, practices, values, and ways of knowing and sharing in terms of which communities have survived for centuries”.

Local knowledge within the Maolosi Trust project involves their knowledge of grazing acquired through years of involvement in the field as nomads, their knowledge of crop cultivation, and their knowledge in choice of livestock. Mr

Maolosi indicated that they chose the Santa Gertrudis breed from their local knowledge that it produced more meat than other breeds. Despite their possession of this knowledge, the Maolosi trustees do not purposely incorporate this knowledge into their agricultural practices. They believe modern implements are required for commercial agriculture to be possible and when local knowledge is used, it is done unintentionally. Thanksgiving, which is considered significant in the Tswana culture, is also carried out within the Maolosi project and forms part of their traditional knowledge.

Indigenous knowledge in the Maolosi Trust is manifested in the rituals they perform, despite influence from their Christian beliefs. Their knowledge of salt production can also be considered indigenous, firstly, because it is local knowledge due to the salt pans in the area (location specific) and secondly, since they acknowledged that they acquired this knowledge through their parents and ancestors. Unfortunately, they do not currently utilise their indigenous knowledge regarding salt production. Their indigenous knowledge system therefore comprises forms of local, traditional and indigenous knowledge.

The Maolosi Trust project may be considered only marginally productive, given the current level of production which is disappointing. The Maolosi trustees do not attach any significance to their indigenous knowledge systems and perceive IK as a threat to their Christian beliefs. The Maolosi trustees only turn to their IK as an add-on when placed in desperate situations.

5.4. Cross-Casing Indigenous Activities within both Projects

5.4.1. Introduction

This section provides an analysis of the data from each case brought together. To clearly cross-case the data, it is necessary to keep in mind the aim and objectives of this study.

Both cases (Basotho Letjhabile and Maolosi), as mentioned earlier, are land reform projects. They are both aimed at commercialisation and sustainable livelihood. Both projects involve livestock and crop cultivation. Though crops produced may vary in cultivar yield, both cases are faced with similar problems, such as insufficient water supply that leads to dependence on rainfall for major parts of production.

Commercial concerns found in this study include risk to production due to varying rainfall and the lack of electricity required for the hatching of eggs. The lack of electricity makes it difficult for both cases to produce chickens for large-scale commercial purposes. Lack of implements greatly hinders general agricultural production. Taking into consideration that both cases cultivate on a large scale, they both need sufficient, suitable implements to plough the land. For large-scale agricultural development to be sustainable, IK should be combined with ‘modern’ agricultural knowledge, bearing in mind that indigenous knowledge initially wasn’t geared towards commercialisation, but can contribute significantly to large-scale production.

5.4.2. Defining what Constitutes Indigenous Knowledge within both Projects (Basotho Letjhabile and Maolosi Trust)

Indigenous Knowledge	Indigenous Knowledge as used within both Projects (Basotho Letjhabile and Maolosi Trust)
Oblations (offerings)	<ol style="list-style-type: none"> 1. Basotho Letjhabile project members offer oblations to their ancestors during the thanksgiving ritual and knowledge acquired from their forebears. 2. Maolosi trustees find this knowledge in opposition to their Christian belief system.
Rituals	<ol style="list-style-type: none"> 1. Basotho Letjhabile trustees perform various rituals acquired from their ancestors. Rituals performed in agriculture involve the rain calling

	<p>ritual, ritual for good harvest and the thanksgiving ritual.</p> <p>2. Maolosi trustees pilgrimage to a self-constructed site as a rain calling ritual. Though influenced by their modern thought, this knowledge was acquired from their ancestors.</p>
Taboos	<p>1. The Basotho Letjhabile trustees practise both traditional and indigenous taboos, which all form part of their indigenous knowledge systems. Taboos such as menstruating women not allowed into the fields, women not allowed to walk through the garden, and pregnant women not allowed into the fields are all acquired from their ancestors. The Basotho Letjhabile trustees also respect the Basotho custom that women are not allowed to sit together with men in meetings and decision-making.</p> <p>2. Maolosi trustees, from the researchers observation, do not have any special taboos associated with agriculture. Mrs Maolosi walked freely across the gardens.</p>
Knowledge of salt production	<p>1. This knowledge is particular to the area and is therefore local because Mrs Maolosi acquired the knowledge growing up around the Soutpan area. As local knowledge is considered an aspect of IK, the author deems the Maolosi trustees to hold indigenous knowledge of salt production acquired from their ancestors.</p>
Indigenous medicine	<p>1. Basotho Letjhabile trustees are able to identify sick livestock using their indigenous knowledge. They use indigenous plants such as the <i>lekgala</i> for the treatment of diseases in chickens and <i>kalpe</i> in the treatment of cattle</p>

	<p>diseases.</p> <p>2. Maolosi Trust: use modern medicines only, for the treatment of animal diseases.</p>
Seed preservation	<p>1. The Basotho Letjhabile trustees acknowledge the use of indigenous knowledge of seed preservation acquired from their ancestors. For example, maize is preserved in a sealed container where ash obtained from burnt maize corns is poured on to avoid pest.</p>

Table 3: IK within the Basotho Letjhabile and Maolosi Trust

5.4.3. The understanding of Indigenous Knowledge

Both communities perceive indigenous knowledge differently but they both provide an understanding of it as ancestral knowledge that is passed down along generational lines. The Basotho Letjhabile Trust members showed greater attachment to their indigenous practices. They perceived their indigenous knowledge as part of their everyday lives. As mentioned earlier, one of the fathers stressed, “There is a great affiliation between our agricultural practices and that of our forebears, who practised agriculture as a lifestyle.” Most of the men involved in the Basotho Letjhabile project define their indigenous knowledge as knowledge acquired from their ancestors. Some say it is knowledge acquired from their everyday life that is passed on to their kids from one generation to the next. This can be seen in the use of their indigenous knowledge in their everyday activities such as:

- The use of *lekgala* for the treatment of diseases in chickens,
- The use of *kalpe* in the treatment of cattle diseases, and
- The use of their agricultural produce such as milk, maize and other herbs for medicinal purposes.

The Maolosi Trust members, on the other hand, do not perceive their indigenous knowledge as playing any significant role in their everyday lives, although they unconsciously rely on their IK. They depend solely on modern

medicine for the treatment of animal diseases. They (Maolosi trustees), like the Basotho Letjhabile trustees, use their local knowledge in identifying sick animals. The Maolosi trustees also hold indigenous knowledge regarding salt production, although it is not actively applied as yet. They acquired the knowledge necessary for salt production from their forebears and through interaction with the community. Indigenous knowledge of rituals and thanksgiving is also used by the Maolosi trustees. The Maolosi trustees do not value their IK, but they still use it without recognising it as such.

5.4.4. The Level of Incorporation of IK with both Projects (Basotho Letjhabile and Maolosi Trust)

Basotho Letjhabile	Maolosi Trust
The Basotho Letjhabile project members find a great interconnectedness between their indigenous knowledge and their agricultural practices.	Maolosi Trust members, on the other hand, do not perceive their indigenous knowledge as playing any significant role in their everyday lives, although they inadvertently rely on their IK.
The Basotho Letjhabile trustees value their indigenous knowledge which they hold close as a source of protection. This is evident in their higher level of incorporation of IK as compared to the Maolosi Trust project.	The Maolosi trustees appear to be removed from indigenous practices. They find their indigenous knowledge conflicting with their Christian belief system.
IK is incorporated in the Basotho Letjhabile project in activities such as rituals, identification, and treatment of animal diseases, taboos, and oblations.	Maolosi trustees still turn to their indigenous practices in times of desperate need, i.e. drought or ensuring a good harvest. Despite their modern interpretation of the rain calling ritual, they acquired this knowledge from their forebears.
The Basotho Letjhabile project members view their indigenous knowledge as the reason for their success in agriculture.	The Maolosi trustees' attitude and mindset towards IK mean that they rely on only one knowledge base with regard to agricultural activities: modern commercial farming.

Table 4: Level of incorporation of IK within the Basotho Letjhabile and Maolosi Trust projects.

5.4.5. Role of Indigenous Knowledge in Both Projects

Olatokun and Ayanbode (2008) argue that, from the time of their ancestors, rural African communities have been greatly endowed with 'special' knowledge, which they use to carry out activities and notable progress is made in their agricultural production over the years. They go further to stress that this 'special' knowledge is the indigenous knowledge of African people.

Indigenous knowledge plays a very significant role in both projects despite their different levels of incorporation, and attachment to their indigenous knowledge within the projects. The Basotho Letjhabile project members see indigenous knowledge as a major element in determining the success of the project. This can be seen in the use of their indigenous knowledge within the project, the practice of indigenous rituals and appreciation of taboos associated with this project. Indigenous knowledge is used in the Basotho Letjhabile project in:

- Ploughing;
- The treatment of cattle diseases;
- Rain calling ritual;
- Thanksgiving;
- Taboos that is associated with agricultural productivity; and
- Decision-making within the community.

Indigenous ritual performance (good harvest, thanksgiving and rain calling), and indigenous knowledge in ploughing the gardens can be seen as an activity that transcends both cases (Basotho Letjhabile and Maolosi Trust). Both cases perform rain-calling rituals (the Basotho Letjhabile to their ancestors, and the Maolosi Trust to God), though differently.

5.4.6. The Level of Success of both Projects (Basotho Letjhabile and Maolosi Trust)

Basotho Letjhabile	Maolosi Trust
<p>The Basotho Letjhabile trustees admitted to improved agricultural production over the years. This can be attributed to their high level of incorporation and intricate link with their indigenous knowledge in production.</p> <p>The Basotho Letjhabile trustees also work and reside on the farm giving them the chance to monitor production. Taking into consideration that the Basotho Letjhabile project is the only farm they have, they also poured all their effort into this project.</p> <p>The Basotho Letjhabile trustees embrace their indigenous knowledge system and use it within their daily lives. This may have also contributed greatly to the success and sustainability of the project as indicated by the project members.</p>	<p>Mr Maolosi admitted that the farm at Soutpan is not as successful compared to their other farm at Bultfontein (not acquired via LRAD). This can also be attributed to the fact that they do not live on the farm and pay less attention to the farm than their Bultfontein land. They admitted that they hire labourers to plough the farm since the trustees are involved in other activities.</p> <p>The Maolosi trustees are uncomfortable with indigenous knowledge and do not rely on it as knowledge base for their agricultural activities.</p> <p>At a glance, the soil of the farm in the Maolosi project is not suitable for agriculture due to the high levels of salinity in the groundwater. Extensive salt production, though not practised as yet, would appear a more appropriate use of this particular land.</p> <p>From participant observation and own judgement, crop and livestock agriculture within the Maolosi appears to be far less prosperous than the Basotho Letjhabile Trust.</p>

Table 5: Level of success of the Basotho and Maolosi Trust projects

The essence of sustainable development is that we should organise the affairs of our life so that we consume the earth's resources to meet our own needs and aspirations in a way that does not compromise the ability of future generations to meet their needs (Culbertson *et al.* 1993). Although exact figures could not be obtained with regard to productivity over the years, both

Trusts (Maolosi and Basotho Letjhabile) said there have been increases in productivity over the years with 2008 being the best so far with regard to maize production. Sales in the Basotho Letjhabile Trust have not been documented over the years. This has been taken into serious consideration and plans were made to commence documentation of sales as of 2008. The Maolosi Trust members document their sales after every production season. This was considered a confidential issue by the trustees so figures have not been listed in this study. Increase in productivity over the years for both projects is directly related to increase in rainfall. This explains the vital role played by rain-calling rituals within both projects.

The men of the Basotho Letjhabile project said that to ensure sustainability of the project, they would get the women and children fully engaged in the activities of the project as of this year (2008). This, they said, was because they were getting old and would die soon and they did not want the project to fail when they were gone. One of the trustees died in June 2008.

The ability of both enterprises (Basotho Letjhabile and Maolosi Trust) to stay in production over the years in spite of the problems they face, including the lack of sufficient implements, water and electricity, indicates sustainability over the past five years (that is from 2003 to 2008 when they began cultivation as farm owners). The presence of salt on the Maolosi Trust farm is greatly affecting crop and livestock production.

The idea of the Basotho Letjhabile project members to commence the production of sunflower as of November (2008) is also an indication of the sustainability of the project because they are expanding the range of their farming activities. Sustainability leads to transformation, as discussed in Chapter Two. Transformation is used within this study as an aspect of change. It refers to a process of change in structure, lifestyle, and social and economic status, and also a change in mindset.

Transformation is visible in many ways in both cases. Transformation within this study is illustrated in terms of a change in function from being farm

labourers (Basotho Letjhabile project members) to farm owners. The Maolosi Trust members, who historically were nomads, have transformed to settlers and land owners. The Basotho Letjhabile project members used to live in farm labourers' dwellings owned by the farm, but as owners of the land transformed into financially independent citizens with material assets.

The members of both projects, who initially were job seekers, are now job creators to other community members. The Maolosi Trust members hire men from the local communities, who are paid weekly to plough the farm and look after the cattle. Both projects (Maolosi and Basotho Letjhabile) were once buyers of agricultural produce, but they have now become producers.

Both projects (Maolosi and Basotho Letjhabile) have also developed a change in mindset by becoming independent decision-makers. This has also given them a change in their status in society. As the name Basotho Letjhabile ("it has dawned") signifies, this project has been the dawn of prosperity in the lives of the Basotho Letjhabile project members. They are now able to educate their kids, if they so choose, and improve their living standards. The Maolosi trustees have also witnessed an increase in their living standards, although primarily due to their productive farm near Bultfontein.

5.4.7. Comparing Literature and Data Collected

Sillitoe (2004) refers to the term indigenous knowledge as synonymous with tradition and local differentiating this knowledge from that developed by formal science in institutions such as universities and government research centres. From the data collected in this study, the trustees of both cases identify their indigenous knowledge as being synonymous with traditional knowledge, for example the taboos associated with agriculture in the Basotho Letjhabile. These taboos form part of the Sesotho tradition that was handed down between consecutive generations by word of mouth.

Both projects (Basotho Letjhabile and Maolosi Trust) utilise forms of indigenous knowledge within the projects, although to varying degrees.

Mrs Maolosi claims her knowledge of salt production is locally acquired from the Soutpan area growing up as a child within this area and has not received any formal scientific training regarding it. Knowledge regarding the choice of cattle, treatment of animal diseases, ploughing, working the gardens and rituals practised within the Basotho Letjhabile project is acquired from their interaction with local communities or learnt from previous generations. The Maolosi trustees, on the other hand, prefer scientific medications for the treatment of sick livestock and pest control. The researcher found that the Basotho Letjhabile value and rely on their indigenous knowledge to a far greater extent than the Maolosi Trust. The level of IK incorporation in the Basotho Letjhabile is therefore considerably higher than that of the Maolosi Trust.

Warren *et al.* (1995) argue that indigenous knowledge (IK) is the local knowledge that is unique to a given culture or society. Indigenous knowledge is important as it forms the information base for a society or community, which facilitates communication and decision-making. This applies to these cases, as both (Basotho Letjhabile and Maolosi Trust) hold some knowledge which is unique to each community, for instance, the reliance of the Basotho Letjhabile Project on the *lekgala* plant for the treatment of sick livestock and the Maolosi Trust's under-utilised knowledge of salt production. In the Basotho Letjhabile project, indigenous knowledge plays a great role in facilitating communication and decision-making. The project members believe that communication amongst men with the exclusion of the women and children is a very important tool in the decision-making in this project. The presence of different generations – youth and elders – in both projects (Basotho Letjhabile and Maolosi Trust) provides the opportunity for the traditional transmission of indigenous knowledge, which occurs along generational lines.

Indigenous knowledge is defined by the Centre for Indigenous Knowledge at the University of Iowa in the United States (Cohen 1996), as the basis on which activities within a community are passed down across generations through the oral tradition. Indigenous knowledge forms the basis for the

agricultural activities within the Basotho Letjhabile project, although integrated with modern methods and implements. Indigenous knowledge concerning agriculture has been passed down to the Basotho Letjhabile trustees along generational lines by word of mouth and local contact and was integrated with more modern commercial agricultural techniques to allow for large-scale production. This is evident in their knowledge of indigenous medicines, agricultural practices and rituals. The modern exigency of commercial farming has led to an integration of the indigenous knowledge system of the project members, with modern farming techniques appropriate for commercialisation.

Grenier (1998) refers to indigenous knowledge as the unique, traditional, local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area. This is applicable to these cases to some extent. It is applicable to both cases in that their indigenous agricultural knowledge has been developed around specific conditions of the women and men of both projects. However, the idea of being indigenous to a particular area does not wholly apply to these projects. The trustees of the Basotho Letjhabile project are not indigenous to the Wesselsbron area. They admit that their ancestors came from different parts of South Africa to work on the farms as labourers. Taking into consideration the history of South Africa, the Basotho Letjhabile project members were subject to the *Group Areas Act* dictating the movement of indigenous people. Mrs Maolosi, however, is indigenous to the Soutpan area and her knowledge regarding salt production is locally derived. Before settling in the area of Bultfontein, the Maolosi family moved around in search of grazing land.

According to Flavier (1995), indigenous knowledge systems are dynamic, and are continually influenced by internal creativity and experimentation as well as by contact with external systems. The men of the Basotho Letjhabile Trust said that their indigenous knowledge with regard to agriculture was practised within this project but with the exception of the modern implements used and extensive cultivation compared to what had been done by their

forebears. Both projects combine IK in varying degrees with modern farming methods and equipment. The Basotho Letjhabile project illustrates the successful complementary use of indigenous and western knowledge, instead of the conventional notion of incompatibility between these different knowledge systems.

Grenier (1998) argues that indigenous knowledge systems are cumulative, representing generations of experiences, careful observations, and trial-and-error experiments. This is true to the Basotho Letjhabile project. Their knowledge of agriculture represents generations of experiences passed down from generation to the next by their forebears. Working with livestock over the years, the Maolosi and Basotho Letjhabile trustees have gained experience which helps them identify a sick animal, crop yield and rainfall. In addition they also use modern medicine for illnesses they can't handle. As mentioned by one of men of the Basotho Letjhabile Trust, if a chicken is sick, he does trial-and-error experiments with randomly collected plants from the field. Should a particular plant work in the treatment of a chicken illness, the knowledge will eventually be passed on to his children, and so forth.

5.5. Indigenous Names of Agricultural Crops

ENGLISH NAMES	SESOTHO NAMES	TSWANA NAMES
SPINACH	MOROHO	MOROGO
WHITE MAIZE	PHOFO	BUPI
YELLOW MAIZE	PONE	MEDI
BEETROOT	BEETROOT	BEETROOT
POTATOES	DITAPOLE	DITAPOLE
PUMPKIN	LEPHUTSI	LEPHUTSI
ALOE VERA	LEKGALA	LEKGALA
COW	KGOMO	KGOMO
SHEEP	NKU	NKU
PIG	KOLOBI	KOLOBE
WATERMELON	LEPAPUH	LEPAPU
CARROTS	SEGWETE	SEGWETE

Table 6: Indigenous names

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1. SUMMARY

This study is aimed at reaching the following objectives:

- Describe the level of success of the two selected land reform projects.
- Find out to what degree indigenous knowledge is incorporated in the selected case studies.
- Determine the role played by indigenous knowledge in the two selected case studies.

Indigenous knowledge, local knowledge and traditional knowledge are viewed within this study as constituents of the indigenous knowledge system of the study communities (Basotho Letjhabile and Maolosi Trust). Land reform is seen as a situation not only unique to South Africa. Land reform has been carried out by most countries around the world and it has been greatly influenced by factors such as decolonisation, communism, political regime change, and class and tax prejudice. South Africa has experienced systematic displacement of indigenous populations due its political past. South Africa has developed a land reform policy to redistribute land to its marginalised citizens. This policy involves three programmes, Land Tenure, Land Restitution and Land Redistribution initiated through the Department of Land Affairs (prior to 2009). The Basotho Letjhabile and Maolosi projects fall under the LRAD programme which is a sub-programme of the Land Redistribution programme. The Basotho Letjhabile and Maolosi trustees had to go through a very long process to acquire the LRAD grant. IK is seen as playing a significant role within these LRAD projects.

It is seen within this study that development practitioners have started to pay noticeable attention to IK as playing a significant role in sustainable development. IK in South Africa is regarded as a critical component in the

restructuring and democratisation of South Africa. Development paradigms such as the modernisation approach are also seen to have impact on IK. The complexity of the nature of IK has made it difficult for scholars to agree on a single clear-cut definition of the term *indigenous knowledge*. Complexity is not unique to IK, though. Sustainable development, like IK, has different meanings for different people.

This study also brings out South Africa's wide range of farming sectors and the different kinds of agriculture practices in the world. Within-case and cross-case analysis is used in the study to comparatively explore the projects identified for this study. This makes it possible to determine the level of success, role and level of incorporation of IK with both projects (Basotho Letjhabile and Maolosi Trust).

6.2. CONCLUSIONS

As discussed in the previous chapter, the Basotho Letjhabile trustees have had tremendous success in the project over the years. They admitted to improved agricultural production, and a more reliable livelihood over the years, which are their main objectives for the project. This can be attributed to their high level of incorporation and intricate link with their indigenous knowledge in agricultural production. The Basotho Letjhabile trustees also established the role of IK as an inseparable component of their agricultural activities, as it is incorporated with 'modern' farming systems for sustainable commercial agriculture.

The Maolosi Trust farm is less successful compared to that of the Basotho Letjhabile. The Maolosi trustees admitted that the farm at Soutpan was not as successful compared to their other farm at Bultfontein (not acquired via LRAD). This can also be attributed to the fact that they do not live on the farm and pay less attention to the farm than their Bultfontein land. The Maolosi trustees are uncomfortable with indigenous knowledge and do not rely on it as a knowledge base for their agricultural activities. They, the Maolosi trustees, see their IK as being contradictory to their Christian

beliefs, although they still perform activities deemed to be derived from indigenous knowledge by the researcher.

The local, traditional and indigenous knowledge of the Basotho Letjhabile and Maolosi Trust projects within this study are combined to constitute their indigenous knowledge systems. Both project communities (Basotho Letjhabile and Maolosi Trust) rely on indigenous (or local) knowledge, but to very different degrees. The Basotho Letjhabile project members see their IK as an integral part of their agricultural practices, whereas the Maolosi trustees do not admit to the use of their IK but appear to turn to it in desperate situations. The Basotho Letjhabile project members attribute their success in agriculture to the use of IK within the project. This can be seen in the use of their indigenous knowledge within the project, the practice of indigenous rituals and appreciation of taboos associated with this project. Indigenous knowledge is used in the Basotho Letjhabile project in:

- Ploughing;
- The treatment of cattle diseases;
- Rain calling ritual;
- Thanksgiving;
- Taboos that is associated with agricultural productivity; and
- Decision-making within the community.

The Maolosi trustees practise their IK in determining the possibility of rain, ploughing, and the indigenous rain ritual they perform. The Maolosi trustees also hold indigenous knowledge of salt production though not practised on the farm as yet.

Indigenous ritual performance (good harvest, thanksgiving and rain calling), and indigenous knowledge in ploughing the gardens can be seen as an activity that transcends both cases (Basotho Letjhabile and Maolosi Trust). Both cases perform rain-calling rituals (the Basotho Letjhabile to their ancestors, and the Maolosi Trust to God) though the rituals are performed

differently. The relative success of the Basotho Letjhabile project can be attributed to the fact that they have found common ground between their IK and modern knowledge of agriculture.

As seen in Chapter One of this study, land reform is not a situation unique to South Africa. Land reform has been carried out by most countries around the world (from Latin America to Europe to Africa), and it has been greatly influenced by factors such as decolonisation, communism, political regime change, and class and tax prejudice. The end of colonialism saw many countries trying to redistribute land amongst its indigenous poor. Political regime change has also left countries around the world with attempts to land reform. This is true for South Africa, since the change in government system from the apartheid system to the democratic government of 1994; land reform became a very important issue.

South Africa's indigenous populations were subjected to systematic displacement under the apartheid regime (Beinert and Delius 1986). The indigenous population was reduced to wage labour dependent on the white farming community as a source of livelihood. The LRAD programme is a sub-programme of the Land Redistribution programme, one of the three programmes used by the Department of Land Affairs to address the land crisis in South Africa.

The grant for both projects (the Basotho Letjhabile and Maolosi Trust) involved in this study was acquired through the LRAD programme, a sub-programme for the land redistribution programme. The South African government's land reform programme is made up of three principal programmes, Land Redistribution, Land Restitution and Land Tenure Reform (Mashinini and De Villiers 2004). According to the White Paper on the South African Land Policy of 1997, land redistribution is aimed at providing the disadvantaged poor with access to land for residential and production purposes. Its scope includes the urban and rural poor, labour tenants, farm workers as well as new entrants into agriculture.

Despite the fact that indigenous communities (Basotho Letjhabile and Maolosi Trust) were prohibited from owning land by the apartheid government, they now have to go through long, stressful and sometimes considerably complicated processes to acquire access to land. By going through the complex process to acquire land, all parties showed commitment towards commercial farming.

Modernisation is greatly impacting on IK. There is less reliance on indigenous implements and methods with production depending on the use of 'modern' implements and methods. Integrating western knowledge and indigenous knowledge systems, as is the case with the Basotho Letjhabile project, agricultural production is more successful and sustainable. Given the many definitions of IK, the knowledge system remains (IKS), although it integrates knowledge from other knowledge systems into its fold. Modernisation greatly contributes to IK lost, by impacting on the mindsets of the youths. The youths of the Basotho Letjhabile project think some of the indigenous practices, for example, the idea of patriarchy and menstruating women forbidden from working in the gardens are unrealistic because of their exposure to the modern world. Their indigenous knowledge is therefore clearly evolving, emphasising the dynamic nature of indigenous knowledge and indigenous knowledge systems.

IK has been lost since early European colonisation and apartheid and more recently via eco-colonialism (Bicker *et al.* 2003). Whether IK used in agriculture production will survive is a question of time. There is a high need for awareness programmes about the value of IK in agriculture development in both cases in order for them to conserve their IK for the development of future generations. This can become possible in land reform projects if the Department of Land Affairs (or its successor) through the LRAD policies acknowledges the indigenous knowledge of South Africans by taking into consideration the fact that they hold indigenous knowledge of agriculture acquired from their forebears before the advent of colonisation and apartheid.

The complex nature of IK has made it difficult for scholars to agree on a single clear-cut definition of the term 'indigenous knowledge'. However, two prominent viewpoints can be raised regarding the definition of IK, the 'semantic' and the 'conceptual'. The semantic definition of IK views IK as 'native', originating and occurring naturally in a particular region, and it is sometimes associated with being simple, tribal, backward, traditional, static and inferior. The conceptual definition of IK views IK as an integrated system of cognition values and practices with a contextual information system and a consequent comprehensive dimension of application. Various scholars have come up with various definitions but most seem to share the notion of IK as based on experience (Maila and Loubser 2003), unique traditional and local (Grenier 1998; Warren 1991). It forms the information base of society (Warren *et al.* 1995; Nwonmu 2007) and it is passed from one generation to the next (Sillitoe *et al.* 2005).

South Africa has a wide range of farming sectors, ranging from field crops and horticulture to livestock farming. There are different kinds of agriculture in the world today, e.g. industrial agriculture, which is mostly practised in Europe and North America, green revolution practised in developing countries (resource poor and associated with marginal or unfavourable areas), and traditional agriculture which is gaining international recognition nowadays.

Integration of IK and modern agriculture is impacting on the lives of the trustees. This is because IK is dynamic in nature and will adapt to change. IK integration with modern agriculture technology helps in sustainable production. Transformation is also evitable in the lives of the trustees in various ways as, for example, in the change from labourers to farm owners or landless to land owners. Ignoring the existence of IK will greatly affect production as IK has been seen to play a significant role in these projects (Basotho Letjhabile and Maolosi Trust).

Indigenous knowledge plays a vital role in decision-making. This may also have devastating effects when beliefs and customs exclude women and children in decision-making. This has to be given serious consideration in cases such as the Basotho Letjhabile project. This is because the men who are the current runners of the Basotho Letjhabile Trust are aging and there may be discontinuity after they die since the women may not have the required knowledge due to lack of involvement in the current decision-making. Gender equality could be another example of how IK could evolve in accordance with the times we are living.

Within-case and cross-case analysis allow the researcher to comparatively explore the cases being studied. Within-case analysis, as applied in this study, gave the researcher the ability to critically understand different levels of success of each project, the role of IK within each project and how IK is being incorporated within each project (Basotho Letjhabile and Maolosi Trust). Cross-case analysis also helped the researcher identify the differences between the level of success in the Basotho Letjhabile and the Maolosi Trust projects. It also assisted in identifying the role of IK within each project and to what extent IK is incorporated within both projects.

It is evident that levels of indigenous knowledge incorporation are still very relevant to practices on the farms and that some of the traditional beliefs are fairly integrated with the activities of especially the Basotho Letjhabile Trust, but that there are signs of alienation of these beliefs due to modern Christian influences, as is the case in the Maolosi Trust. On the other hand, it is also evident in the case of the Maolosi Trust that the farming practices are not based on inherited indigenous knowledge, but that dimensions of indigenous knowledge play an unconscious ancillary role. This can be related to the fact that agriculture nowadays and land owners over time, have been exposed to farming methods of European origin without the opportunity of continued land access and traditional farming, thereby alienating indigenous modes of doing with the belief that European methods are superior.

6.3. THE WAY FORWARD

This study has indicated the positive role of IK in sustainable development, as seen in the Basotho Letjhabile project, but to ensure continued sustainability more research has to be done on:

- Proper recording and documentation of indigenous knowledge uses in agriculture production;
- How to preserve, and protect and use indigenous knowledge to promote sustainable development and transformation; and
- How indigenous land related laws can be including in the Land Reform Programme.

To prevent the loss of the intrinsic value of indigenous knowledge, indigenous knowledge should not be objectified as a body of knowledge estranged from the community in which it has always been embedded. This can be prevented through constructive engagement and participation of local communities (such as the Basotho Letjhabile) (Nel 2006).

6.4. RECOMMENDATIONS

The researcher strongly agrees with Ntsoane (2005) that African indigenous knowledge systems and their related technology should have a primary function within contemporary society. IK can contribute to the future of the country in dealing with the problems facing us, and the need to develop the economy in a sustainable manner. Indigenous communities have a stockpile of knowledge regarding agriculture. It is therefore only logical and wise that the Department of Land Affairs and the Department of Agriculture give indigenous communities a greater say in land issues and all matters regarding them. By giving priority to IK, development projects can attain sustainability; hence the preservation of indigenous knowledge systems for future generations.

Indigenous knowledge systems exist in South Africa, the rest of Africa and in other developing societies but their future is uncertain due to the wide spread of 'modern' ideas and philosophies. Such knowledge should be recorded, stored and evaluated by people who possess appropriate backgrounds in educational systems and have appropriate skills for translating indigenous information for the understanding of other cultures and the sustainable growth of the communities involved.

Sustainable development like IK has different meanings for different people (Sillitoe 2000), but the essence of sustainability within this study is simple. Sustainable development is considered development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland 1987). Sustainable development is a complex concept as it is embedded in people's own beliefs or interest regarding what it means to them and it is therefore necessary that development activities work with and through indigenous knowledge and organisational structures as it provides the basis for grassroots decision-making.

Experience shows that when development efforts ignore indigenous knowledge systems, they generally fail to achieve the desired objectives (Warren *et al.* 1980; Mkapa 2004). It is therefore necessary for development activities to take into consideration the fact that indigenous communities are "descendants of the original or pre-colonial inhabitants of a territory or geographical area and despite their legal status, they still retain some or all of their social, economic, cultural and political institutions" (Ermine *et al.* 2004: 5). Indigenous knowledge should be viewed as an indispensable component of a community to ensure successful community development.

The Department of Agriculture and Land Affairs should consider deliberate efforts to optimise IK levels of new land owners benefiting from the land policies. These efforts should be incorporated at the point of entry of projects and not as remedy when all other initiatives start collapsing. The efforts should include an IK awareness campaign for many local communities have become estranged from their own inherited knowledge and social capital.

Salt production should be taken into consideration by the Maolosi trustees, as it will be the best option for extensive production, given the salinity of the soil. The Maolosi trustees (most especially the children) should consider spending more time at the farm. Attachment to the activities of the project will help in ensuring sustainability.

6.5. LIMITATIONS

The researcher is not a member of either communities (the Basotho Letjabile or the Maolosi) and is not a citizen of the country (South Africa) where the study was carried out. Coming from a different country with different indigenous practices may lead to some unavoidable bias, since the researcher may at some point have tried to relate the people's indigenous knowledge to his/her knowledge. Also the difficulty to differentiate between IK, traditional and local knowledge made it very difficult for data analysis. However, the researcher coming from a different background might also have been an advantage, as the researcher was capable of detecting subtle nuances, emotions and attitudes otherwise undetectable by researchers from an indigenous setting.

The inability to speak the people's language was a further limitation to the study, as well as the cost implications, as the researcher had to hire an interpreter and translator in order to collect data. However, this might also be an added advantage as the participants were excited to meet someone from another African country and culture interested in their indigenous practices. This motivated participation and cooperation.

Getting all respondents together in a single gathering was also a major difficulty in this study. Some of the participants receive social grants, including disability and child grants from the government. At the end of each month most of participants go to the city to collect the grants. The process of receiving the grant is complicated and may take a few days to about two weeks. This made it very difficult to get hold of all respondents at all times. Also, the fact that women and men of the Basotho Letjhabile communities

were not allowed by custom to sit together in a focus-group discussion may also have been a limitation. When people are seated together as a group, there is the sharing of ideas. This may also be seen as an advantage because some people may feel free to express themselves amongst people of their own social status.

6.6. CHALLENGES

The main challenge in this study was to gain the trust of the project members. Gaining the confidence of respondents may require time and patience. At the start of the study, project members were very sceptical about the study. Speaking to one of the men from the Basotho Letjhabile Trust project, he indicated that they initially thought the researcher was out to appropriate something that belonged to them, or that they were being investigated by the Department of Land Affairs. After three months of frequent visits to the communities and thorough explanations, the project members became comfortable with the researcher and project.

Some project members (the Maolosi Trust members) initially thought that acknowledging their indigenous knowledge entailed compromising or undermining their Christian belief. After two or three visits and methodical explanations, project members were convinced of the objectives of the study. This challenge may have influenced the responses provided by the Maolosi trustees.

In some instances, project members reacted sensitively to some issues. Men of the Basotho Letjhabile project became sensitive to issues such as agricultural taboos against women, especially since the researcher is a woman. The men admitted that it was a taboo for them to share information about women with others. To avoid situations where participants became sensitive to certain issues, the researcher decided, along with the Basotho Letjhabile project members, to make a list of sensitive issues and suggestions to deal with them, creating a sense of understanding between the researcher and the project members.

LIST OF PARTICIPANTS

Basotho Letjhabile Trustees

Thabo Agustin Harejane

Clement Harejane

Lena Harejane

Esther Harejane

Jan Harejane

Jafta Harejane

Annah Harejane

Smon Harejane

Jonas Xaba

Bethuel Xaba

Letia Xaba

Julia Xaba

Letta Xaba

Jan Xaba

Agnes Xaba

Halabi Xaba

Joseph Xaba

Stephen Madona

Salmon Madona

Maria Madona

Mvulane Madona

Julia Madona

George Madona

Stephen Madona

Joseph Mabota

Sophie Mabota

Simon Mabota

Sarah Mabota

Joshia Mabota

Daniel Mahao

Johannes Maci

Antony Maci

Maolosi Trustees

Emily Maolosi

John Maolosi

Matshidisi Maolosi

Kedinametse Maolosi

Baile Maolosi

Itumeleng Maolosi

Tumelo Maolosi

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