The Land Administration System of Lesotho: Challenges and Opportunities

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Abstract

The increasing need for effective land administration systems that help eradicate poverty, boost economic growth and lead countries to sustainable development, have led countries to engage in the reform of existing systems. In this process researchers and practitioners use appropriate methods, tools and frameworks to examine, analyse and evaluate existing systems prior to the design and implementation of new systems. The attempt to find suitable designs which are aligned with the best practices frameworks in land administration systems, has led to extensive research to develop, identify and test suitable methods and frameworks and to apply these to case studies.

This research investigates and analyses the land administration system in Lesotho from a critical realist perspective. The current system, called Land Surveys and Physical Planning (LSPP), as well as the proposed system, called the Land Administration Authority (LAA), are investigated. Theories, methods and tools employed in this research are based on critical realism and a holistic worldview. The research uses mixed method approaches to develop an in-depth understanding of these systems in the context of Lesotho, as well as to examine, analyse and evaluate them against standard frameworks. The mixed methods approaches used include single case study strategy, systems thinking tools (viable system modelling (VSM) and soft systems methodology (SSM)), the land management paradigm (LMP), good governance and rights, restrictions and responsibilities (RRRs) frameworks.

The findings of this study suggest that the LSPP and LAA in Lesotho are ineffective and incapable of facilitating poverty reduction and boosting economic growth in Lesotho. The research findings show that the designs of these systems are non-holistic and that they also fail to meet the best practices standards in land administration. The research further argues that critical realism and the mixed method approaches used are indeed suitable to analyse, evaluate and guide design of effective cadastral systems. The analysis contributes to understanding of the current and proposed land administration system in Lesotho providing valuable information on the LSPP and the LAA. It further provides the cadastral research community with valuable information on the use of systems theory, LMP, good governance and RRRs frameworks in land administration.

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I dedicate this thesis to Tumi and Baby Boy. May you one day understand why Mummy has been away from home.

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Acronyms

CLO:	Chief Lands Officer
COL:	Commissioner of Lands
CC:	Community Councils
DCS:	District Council Secretary
DG:	Director General
FAO:	World Food Programme
GG:	Good Governance
HRS:	Hard Systems Methodology
LAA:	Land administration Authority
LAS:	Lands Administration System
LHDC:	Lesotho Housing and Land Development Corporation
LIS:	Land Information System
LMP:	Land Management Paradigm
LSPP:	Land Surveys and Physical Planning
MCA:	Millennium Challenge Account
MCC:	Maseru City Council
MCC:	Millennium Challenge Corporation
MOLG:	Ministry of Local Government and Chieftainship
RRRs:	Rights and Restrictions and Responsibilities
SSM:	Soft Systems Methodology

UN:	United Nations
UNECE:	United Nations Economic Commission for Europe
UNFIG:	United Nations International Association of Surveyors
UN-Habitat:	United Nations Human Settlements Programme
USA:	United States of America
VSM:	Viable System Modelling

Chapter 1. Introduction

1.1 Background

Lesotho, like most Southern African developing countries, is struggling to build and maintain a reliable cadastre (Swedesurvey, 2006). Land in Lesotho is held by the King as Head of the State in trust for the Basotho nation (Lesotho Government, 2000). Customary tenure system and leasehold operate concurrently (UN-Habitat, 2008).

The customary tenure approach is based on the idea that land in Lesotho is free to all and is not subject to being bought nor sold. This belief has affected the operation of the formal land registration in Lesotho since the Land Act of 1979 (Lesotho Government, 2000). Customary tenure type is found to provide social advantages including social security over ownership (UN-Habitat, 2008). Internationally, the customary tenure system is not conducive to good land administration, security of land tenure, high productivity and development, as it is considered an insecure tenure system (UNECE, 2005). In Lesotho, it is therefore, considered a constraint to Lesotho's economic development; land in customary tenure cannot be put as collateral for credit in banks (Lesotho Government, 2000, Swedesurvey, 2006). This inhibits the operation of formal land market (Swedesurvey, 2006).

The leasehold tenure system, in which leases are issued as formal land titles, came into effect with the Land Act No 17 of 1979 (Lesotho, Government, 2000). Leasehold provides land tenure security and boosts formal land markets operation and thus, economic growth (UNECE, 2005). In leasehold, customary land tenure titles such as Form; C, CC2 C1, C2, C3 and title deeds were converted into leases upon the holder's lodging of application (Lesotho Government, 2000, Swedesurvey, 2006). However, conversion of land titles to leasehold has not been successful and the majority of land and improvements in Lesotho are still trapped in customary tenure system and the customary tenure system is no more favoured (Lesotho Government, 2000, Swedesurvey, 2006). Understanding the inalienable nature of land in Lesotho and the holding of all land by the Head of the State as a custodian of the Basotho people in perpetuity, is an important basis for Lesotho's land policy (Lesotho Government, 2000).

In the context of Western capitalism, land is the base resource upon which all the production and wealth of a country are built (UNECE, 2005). In a poor and largely subsistence country such as Lesotho, these notions need to be seen in context (Lesotho Government, 2000). However, in order for Lesotho to move along the sustainable development path, it is necessary to facilitate economic growth, which to a large extent relies on secure land holding (Lesotho Government, 2000).

International organisations such as the World Food Programme (FAO), World Bank, United Nations-Habitat, International Federation of Surveyors (FIG) and the United States of America (USA) 's Millennium Challenge Corporation (MCC) boost the significance of sustainable development (UNECE, 2005, MCC, 2008). They also support the United Nations Millennium Development Goals (MDGs) and recognise the value of land management and administration systems, improved tenure security, efficient land markets and good governance practices, as issues to be addressed in meeting the broad aims of eradicating extreme hunger and poverty (UNECE, 2005, MCC, 2008). Furthermore, sustainable and good local land administration system and sound land policy are key elements in a broader sustainable development policy (UNECE, 2005). These promote investments, both for local and foreign people, hence economic growth and internal stability are boosted (UN, 2007).

Land administration systems around the world, especially in developing countries are being reformed to align them with sustainable development objectives (UNECE, 2003). Developing countries are often supported by international donor agencies including World Bank and MCC (UNECE, 2005, Urban Institute, 2008). In Lesotho, reform of the land administration system is assisted by the Millennium Challenge Corporation (MCC), the United States of America's government development assistance (Urban Institute, 2008).

The MCC focuses on improving security of tenure in Lesotho and considers this an important foundation for functional land markets which are ultimately linked to improvement in economic development and poverty reduction. This is a one pathway to sustainable development (MCC, 2008). In the context of MCC, the land administration process includes the determination of rights, interests and other attributes, the survey and the recording of survey data, registration of rights and provision of relevant information in support of juridical and fiscal cadastral sub-systems (MCC, 2008).

Lesotho signed a contract with the MCC on 23 July, 2007. In this agreement, the MCC provides funds to Lesotho under the broad aim to facilitate poverty reduction through economic growth (Lesotho Government, 2006). However, a portion of these funds was designated for improving land administration through the reform of legal frameworks facilitating land rights, design and establishment of the new Land Administration Authority (LAA) in Lesotho.

The USA-based consultancies partnered to undertake the design of the proposed system, the Land Administration Authority (LAA). They include the Urban Institute, Stephen Berrisford Consulting and the COWI A/S (Urban Institute, 2008). The LAA is expected to facilitate poverty reduction, promote economic growth and lead Lesotho to sustainable development. This system will therefore, unify the land registry, juridical cadastre and base mapping functions in Lesotho. LAA is designed to be autonomous in nature, professionally managed and operated. It is also expected to provide cost effective and efficient services to the public as well as being self-sustaining after establishment (Urban Institute, 2008).

1.2 Statement of the Problem

The Lesotho land administration system has, for a long time, been experiencing many problems in relation to efficiency and effectiveness. The government of Lesotho has declared the current land administration system called the Land Surveys and Physical Planning (LSPP) inefficient and incapable of providing security of tenure or sustaining effective land markets thereby help reduce poverty and increase economic growth (Swedesurvey, 2006). Formal land registration, introduced through the Land Administration Act No 20 of 1973, and repealed by the Land Act No 17 of 1979 has neither solved tenure insecurity nor promoted economic growth. The Acts have contributed to additional ineffectiveness in the land management system (Lesotho Government, 2000).

Key problems identified in Lesotho's land management system (Lesotho Government 2000, Swedesurvey, 2006, UN-Habitat, 2008) include land administration processes that are unclear, lengthy, slow and costly. In addition, most of the processes such as lease registration, land transactions (transfers), valuation processes and development control are manually undertaken and lack transparency. The system is also poorly administered and managed, and the policies are poorly conveyed and shortage of capital and skilled and motivated human resources abound the system. Furthermore, lack of sufficient technology and poorly

integrated processes have led to inefficient processes, and absence of complete and up-to-date land information (Lesotho Government 2000, Swedesurvey, 2006, UN-Habitat, 2008).

The ultimate results of poor land administration in Lesotho are the formation of informal land markets which leads to ineffectiveness of the LSPP. The lack of security of tenure and lack of complete land information discourages formal land markets, hence foreign and local investments are reduced. Insecure tenure also reduces the collection of revenue levied on formal land registration services including land rights registration and other land administration processes. Also, uncontrolled development and encroachment of settlements on agricultural land arises because of poorly implemented policies. This has resulted in large areas of unplanned settlements in Lesotho, especially in urban areas (Lesotho Government, 2000, Swedesurvey, 2006, UN-Habitat, 2008). The uncertainties brought by poor land management has contributed to poverty and low economic growth in Lesotho (UN-Habitat, 2005).

In view of the problems of the Lesotho cadastral system (LSPP) and the related consequences discussed above, the government of Lesotho embarked on a land administration system reform project through the establishment of the LAA (Urban Institute, 2008). The background information provided in this section indicates that the LSPP failed to deliver effective land administration processes, promote economic growth and helps reduce poverty, hence the LAA is designed to promote security of tenure and formal land markets, thereby boost economic growth (Urban Institute, 2008).

Exiting land administration research indicates that effective land administration system is important in the context of sustainable development (Williamson *et al*, 2010 and UN-FIG, 1999) and is essentially about good governance. Therefore, the land administration system's processes should be aligned with sustainable development goals and designs should conform to best practices standards in land administration systems (Williamson *et al*, 2010). The best practices frameworks include the land management paradigm (LMP), principles of good governance (GG) and rights, restrictions and responsibilities (RRRs) (Williamson *et al*, 2010). These system's designs should also be seen in context, especially in developing countries (Barry, 1999, Rakai, 2005, Nkwae, 2006, Whittal, 2008, Williamson *et al*, 2010).

The land management paradigm (LMP) promotes integration of the functions of land tenure, land use, land value and land development supported by an appropriate land policy

framework (Williamson *et al*, 2010). This is causally linked to efficient land markets and effective land management that contributes to sustainable development (Williamson *et al*, 2010). There is no evidence that the LSPP design was intentionally aligned with any such framework, and more worryingly, there is no recent evidence in the Urban Institute (2008) that the LAA has been designed with due regard to the LMP or indicators of good governance in land administration systems.

Designing effective cadastral systems that help eradicate poverty and promote economic growth requires use of appropriate methods for the study, analysis, evaluation and designs, hence the importance of identifying and testing suitable methods and tools for the analysis, evaluation and designs of the systems (Iatau and Williamson, 2000, Whittal, 2008, Williamson *et al*, 2010). The extent to which Lesotho's cadastral system (LSPP and LAA) will deliver effective land administration and promote economic growth depends on whether their designs are holistic, suitable for their context and respectively, accommodates best practices standards in land administration.

This study assesses Lesotho's cadastral system using mixed method approach proposed by Whittal (2008) and analyses and evaluates the system's capacity to deliver effective land administration within the framework of best practices in land administration.

1.3 Research Objectives

This research covers general and specific objectives.

1.3.1 General Objectives

This research undertakes a holistic analysis of the cadastral system in Lesotho. This involves the current cadastral system, called the Land Surveys and Physical Planning (LSPP), as well as the proposed system, called the Land Administration Authority (LAA). The objectives are to understand the two systems and to investigate whether the proposed system is in line with international best practices and therefore, likely to support sustainable development.

1.3.2 Specific Objectives

A number of specific objectives are addressed in this research. Firstly, the study identifies suitable research methodologies which are appropriate in researching a case of a cadastral system and its proposed reform, such as that in Lesotho. Secondly, both the current and the proposed cadastral system are described in a detailed case study narrative. Following this, the

structures and processes of the current (LSPP) and proposed (LAA) cadastral systems in Lesotho are modelled from a systems perspective to facilitate understanding of their functioning, the nature of problems in the systems and assess their viability. Also, the Lesotho cadastral system is evaluated using the current land administration theory (LMP, GG and RRRs) to reveal its alignment with best practices which underpins sustainable development. This analysis contributes to the third objective, which is to assess whether complete change of the existing LSPP system is required and also, if the proposed LAA sufficiently addresses the problems of the LSPP. Lastly, the research aims to contribute to knowledge in the field of cadastral systems research and thus provides valuable information to the cadastral research community.

1.4 Research Questions

This research addresses the following questions:

- In researching a case of a cadastral system such as that in Lesotho, what research methodologies are appropriate and why?
- What is the current status of the cadastral system in Lesotho?
- How does the cadastral system of Lesotho compare to accepted frameworks for cadastral system design and operation?
- How does the proposed land administration reform process seek to change the current status of the cadastral system, and lead Lesotho towards sustainable development?
- How does the proposed cadastral system of Lesotho compare to accepted frameworks for cadastral system design and operation?
- Is the proposed cadastral system in Lesotho likely to address the problems inherent in the current system?

1.5 Research Design and Methodology

This research is an exploration at the methodological and applied levels. It contributes to knowledge of how to research cadastral systems, understanding of the functioning and reform of cadastral systems, and tests application of methodological and analytical frameworks. The methods tested in this study include single case study strategy, multimethodological approach, systems analysis, soft systems methodology (SSM) and viable systems modelling (VSM) tools. The study also tests the use of land management paradigm (LMP), good

governance (GG) and RRRs as analytical best practices frameworks in land administration systems.

Single case study research strategy (Yin, 2003) is used. This case study is multi-cultural in that it combines elements of a single case study strategy which are holistic, intrinsic and unique (Yin, 2003, Denzin and Lincoln, 1998). The adoption of a single case study in this research implies that the cadastral system in Lesotho is investigated in its real and natural setting. Multiple sources of evidence are used in case study strategy to research. This facilitates a holistic view of the phenomena improving rigour. The use of multiple sources of data collection strengthens the generalisability of the case findings, although the study is geared towards naturalistic generalisation. Primary data is from in-depth interviews with the key informants as well as from participant observation. Secondary data is in the form of project documentation, journal papers, reports and published books (Denzin and Lincoln, 1998).

In-depth, unstructured and semi-structured interviews with key informants are used in this study. The key informants are preferred in this case study because they are the people who know and understand the case well and the roles they play in the case makes them unique in this research. For this particular study, key informants are the LSPP, Deeds Registry officials and the Project Implementation Unit staff.

Participant observation is also an important source of evidence. The researcher is a long-time public servant in the case under scrutiny. Field notes in the form of narratives are recorded and kept confidential as required by the research ethics that the researcher has to comply with in this study (Denzin and Lincoln, 1998). This source of evidence does contribute to bias in this research. However, the researcher minimises bias by using triangulation of evidence from multiple sources of data as well as by using different social systems tools and land administration theory for analysis (Whittal, 2008).

SSM and VSM as systems thinking tools of analysis are motivated in Chapter 5 of this thesis. In a nutshell, modelling using the VSM tool models the structures and processes in the systems, while SSM explores the relevant human activity systems of the cadastral system and analyses the cultural and socio-political aspects affecting the operations of the system. These

social systems tools are also used to diagnose the current situation facilitating the identification of challenges and opportunities. The analysis contributes to the understanding of these systems (Whittal, 2008).

The land management paradigm (LMP) requires systems which distribute land parcel rights, restrictions and responsibilities (RRRs) effectively and integrates the four functions of land administration so as to pursue sustainable development (Bennett *et al*, 2005, Williamson *et al*, 2010). This theory asserts that the design of land administration systems should conform to the LMP (Williamson *et al*, 2010). Good governance is also a prerequisite to effective and sustainable land administration systems (Williamson *et al*, 2010, Samsudin, 2011, Whittal, 2011).

This research identifies the land management paradigm, good governance, and rights, restrictions and responsibilities as suitable theoretical frameworks and therefore, uses them as analytic tools to assess the design of both the current (LSPP) and the proposed (LAA) cadastral system in Lesotho. These analytical tools investigate whether the Lesotho cadastral system is designed along the standards of best practices. Also, whether the LAA is likely to change the situation expressed with the LSPP, hence, facilitates poverty reduction, and lead Lesotho to sustainable development as required by the LMP, GG and RRRs (Williamson *et al*, 2010). The use of these analytic frameworks also contributes understanding of the cadastral system from different perspectives.

This research is therefore, based on a critical realist paradigm which is aligned with the research methodology and is fully motivated in Whittal (2008).

1.6 Organisation of the Document

The research design involves the essential elements of investigation in an effective problem solving sequence (Pelto and Pelto, 1978). The organisation of the chapters in this thesis is designed to lead logically on to each other so as to address the research objectives and answer the research questions in a logical and structured manner. This thesis is made up of ten chapters.

Chapter 1: Introduction; this chapter introduces the research problem. An outline of the general and specific research objectives is made. Research questions and the research

methods, tools and data techniques employed to answer the research questions are set in place. The research design, scope and limitations are addressed and the layout of the thesis is summarised.

Chapter 2: Review of Previous Research; this chapter reviews previous research in cadastral systems which can inform this research. It further reports on research which has used the single case study research strategy, the mixed method approaches and social systems approaches such as soft systems methodology and viable system modelling. In addition, current literature on land administration systems best practices standards framework is presented and the findings of relevance to this research are reported.

Chapter 3: Theoretical Frameworks for Real World Research in Cadastral Systems; this chapter reflects the general theoretical, methodological and analytical frameworks used in cadastral systems research and relevant to this study. It includes critical realism, multimethodology, single case study, systems theory (general systems theory, the social systems theory and modelling using soft systems tools, and viable systems modelling). Methods of generalisation in case study research are addressed.

Chapter 4: The Land Administration and Management Theory; this chapter focuses on general land administration theory which is relevant to this research. This includes cadastral systems concepts and theory, land administration and governance, cadastral systems reform, the land management paradigm (LMP) of Williamson *et al* (2010), good governance frameworks (GG) and RRRs.

Chapter 5: Research Methodology; this chapter identifies the methodologies, tools and techniques which are employed in this research. It motivates the benefits of using the following in understanding the current and proposed cadastral systems in Lesotho:

- Single case study strategy.
- Multiple data sources.
- Multi-methodological approach.
- Systems analysis; soft systems methodology and viable systems modelling tools.
- Land management paradigm, good governance and RRRs as analytical frameworks.
- Logic of naturalistic generalisation.

Chapter 6: The Narrative Description of the Current Cadastral System (LSPP); this chapter is a narrative description of the phenomenon of the Land Surveys and Physical Planning (LSPP) which is the current cadastral system in Lesotho. The single case study strategy is used to guide in this process. Multiple perspectives of the case are gained through the interviews with key informants and participant observation (the researcher is a part of the cadastral system as an employee of the organisation) and documentation is extensively used. This chapter is crucial in that it is a basis for systems and LMP analysis.

Chapter 7: The Narrative Description of the LAA; this chapter presents a narrative description of the newly established Land Administration Authority. The LSPP described in the previous chapter is phasing out, it is therefore, important to describe the system taking its place. The chapter adopts the single case study data collection techniques and uses multiple data sources to gain a holistic view of the system. The description contributes to understanding of the LAA in the context of Lesotho, while it also informs the analysis.

Chapter 8: Analysis of the Current Cadastral System (LSPP); this chapter is informed by Chapter 6. It analyses the case from a systems perspective and from the perspectives of the best practices framework in land administration systems. The structures and processes of LSPP are modelled using both the soft systems methodology tools and viable system modelling. This facilitates identification and diagnosis of the existing situation in the system. The problems of the system identified from the case description in Chapter 6 are analysed from a systems perspective. These problems relate to the processes in the system, the human resource capacity, structural/ institutional problems, legal/ legislative problems and the political/ economic/ social aspects in relation to broader society (holistic view). Furthermore, the case is analysed using the land administration systems best practices framework and more particularly the LMP, GG and RRRs as identified as suitable analytical frameworks in Chapter 5. The analysis contributes to the understanding of the system from different perspectives.

Chapter 9: Analysis of the Land Administration Authority (LAA); this chapter focuses on modelling the proposed Land Administration Authority (LAA) structures and processes from a systems perspective and from the perspective of the land administration systems best practices framework. It is informed by the LAA narrative in Chapter 7. Similarly to the analysis of the LSPP in Chapter 8, the structures and processes are reflected and analysed using SSM and VSM. The LAA is also analysed using the LMP, GG and RRRs, It is

evaluated to reveal its alignment with current land administration theory which underpins sustainable development. Lastly, issues with the proposed changes to the cadastral system in Lesotho are identified and whether the proposed LAA is likely to be able to address the problems identified with the current cadastral system.

Chapter 10: Conclusions and Recommendations; this chapter reflects the conclusions of the analysis of this empirical research. Following conclusions, recommendations for further research and suggested improvements to the LSPP and the LAA are presented.

1.7 The Scope of the Study

This research is limited to the identification of suitable theoretical, methodological and analytical tools and methodologies for an enquiry into the case of the cadastral system (current and proposed) in Lesotho and the testing of existing theories including (LMP, GG, RRRs and the social systems analysis tools) in cadastral system research. It is also restricted to the use of these tools for the purposes of understanding and analysis. The interventions are beyond the scope of this thesis.

In addition, this research is also limited to the analysis of the LAA proposed design, not the actual processes and performance.

Chapter 2. Review of Previous Research in Cadastral Systems

2.1 Introduction

This chapter identifies current literature in cadastral systems research which is of relevance to this research. It reports the findings of previous research which identified suitable approaches and frameworks for cadastral systems research. The approaches include critical realism, mixed method approach, single case study research strategy, social systems approaches including soft systems methodology (SSM) and viable system modelling (VSM) as used by Whittal (2008). It also presents research findings related to cadastral systems and reforms, in particular, the best practices standards frameworks including the land management paradigm and its underlying frameworks of good governance and rights, restrictions and responsibilities (RRRs).

2.2 Approaches to Cadastral Systems Research

The need for cadastral systems that promote sustainable development, led researchers and practioners to engage in extensive research, with a view to use suitable approaches, frameworks and methodologies which guide the design of effective cadastral systems (UN-FIG, 1999, Iatau and Williamson 2001, Whittal, 2008). This section explores the findings on the use of single case study research strategy, critical realism, multimethodolgy and social systems approaches such as soft systems methodology and viable systems modelling in cadastral systems research as used by Whittal (2008).

2.2.1 Critical Realism in Cadastral Systems Research

Whittal (2008) used critical realism in cadastral systems research development and found it appropriate as a theoretical framework for cadastral systems research. She highlighted the importance and uniqueness of the paradigm in that it allows the combination of the natural and social domains such as found in cadastral systems research. Whittal (2008) adopted this paradigm from Mingers (2006) and she found it suitable to analyse situations such as those which include the natural materials such as land parcels, computers and maps and the social domains including human beings and the relationship which exists between land and human beings. As Whittal (2008) argued, the framework makes it possible to tackle real world problems which are complex and messy, such as problems inherent in cadastral systems. She further argued that the critical realist perspective recognises that a social science approach

such as SSM and case studies are deemed appropriate in tackling complex problems, as those occurring in cadastral systems. The author used this framework to analyse the fiscal cadastral system reform in Cape Town and found it suitable for research in cadastral systems and their reform (Whittal, 2008).

2.2.2 Multimethodological Approach

Whittal (2008) explored and identified a useful suite of methods or methodologies to employ for cadastral systems research and found multimethodology an ideal framework. In her study (Whittal, 2008), she found that a multimethodological approach accommodates a range of methodologies, allowing for the use of only part of a methodology or even an individual method to be used in order to investigate cadastral systems problems (Whittal, 2008). Different approaches and methodologies were found to support enquiries into different aspects of the situation (Whittal, 2008). She indicated that the approach enables researchers to deal with the whole situation of the real world, although it is not a meta-paradigm (Mingers, 2006). Whittal (2008) deemed multimethodology appropriate for cadastral system research.

2.2.3 Case Study Research Strategy in Cadastral System Research

Case study research strategy has been used extensively in the field of cadastral systems research. This can be seen in studies of the following: Iatau and Williamson (1997), Barry (1999), Silver and Stubkjaer (2002), Zevenbergen (2004) and Whittal (2008).

Barry (1999) and Whittal (2008) used case study strategy to investigate extreme and unique cases. For instance, Barry (1999) used case study to evaluate an extreme and unique case of the cadastral system in periods of uncertainty. Whittal (2008) used the strategy to study and analyse the phenenomenon of the reform of the fiscal cadastral system in the case study of the GV 2000 project in the City of Cape Town. This was investigated under extreme circumstances of change in political power and was unique in being the first implementation of CAMA reform in Southern Africa. In both studies, single case study was found appropriate in cadastral systems research.

Furthermore, Whittal's (2008) study demonstrated that case study relies largely on using existing theory to develop theoretical propositions, while triangulation of results from multiple sources increase the construct validity. She indicated that building detailed case study descriptions allows naturalistic methods of generalisation. Also, the case study

narrative derived from multiple sources of evidence informs the social systems modelling for diagnosis, analysis and design and hence can be used for social systems analysis of cadastral systems. She found the strategy valuable as it also enables its application in research involving complex information systems. Whittal (2008) thus found case study strategy suitable in analysis and designing of cadastral systems and for their research.

Silva and Stubkjaer (2002) found case study strategy in cadastral systems research suitable for its ability to provide for understanding of the cadastral system through its examination, rather than providing a solution to the problems identified. They emphasised that researchers often use it to understand an existing cadastral system prior to the creation of any model or development of a solution to a problem. Whittal (2008) supported this claim and further argued that the rich description produced from case study through employing multiple data sources, provides a better understanding of the cadastral systems in their contexts.

Silva and Stubkjaer (2002) further supported the use of case study strategy in conducting cadastral system research and emphasised its role in theoretical development in the field. They argued that case studies are well used to build theory and to improve on the existing one. Multiple sources of data such as interviews, questionnaires, documents and observations are also desirable in contributing to the description of the case. Zevenbergen (2004) presented results of his extensive study of four cases and illustrates the use of multiple case study strategy and the contribution it makes to cadastral system theory. In all of this research, the case study tools have been successfully employed. Cadastral systems researchers therefore, emphasise the appropriateness of the tool for their purposes.

In addition, Iatau and Williamson (1997) found the case study strategy useful in describing the social, economic, political and cultural setting of the cadastral system in question. They argued that it is appropriate in facilitating the identification and examination of a problematic cadastral system and its reform. They used the strategy to study the cadastral system of Papua New Guinea and its reform. In this case, the strategy was applied to study how and why the cadastral system operated within the local conditions. They also developed a detailed understanding of the existing system and its reform, particularly in the registration of customary land (Iatau and Williamson, 1997).

Although case study strategy is recommended for use in cadastral system research, Whittal (2008) argued it is open to bias. She highlighted that each researcher stands on a certain

epistemology and ontology, hence the personal biography of a researcher can influence the direction of data collection and reporting. She therefore, stated that this can be avoided by using highly knowledgeable key informants who view the phenomena from different perspectives. She further argued that bias of the researcher should also be identified and stated upfront and thereafter accommodated in the research design (Whittal, 2008).

In all of this research, case study tools have been successfully employed, hence cadastral systems researchers emphasise the appropriateness of the tool for their purposes.

2.2.4 Systems Thinking Theory as Applied in Cadastral System Research

Barry (1999) was one of the first to investigate and adopt systems theory in cadastral systems research. His study supported the marriage of systems thinking to cadastral system research and demonstrated that the complex problems inherent in cadastral systems are presented and analysed using a systems thinking approach (Barry, 1999). Whittal (2008) supported this approach and went further to investigate how this approach can inform the choice of methods and tools referencing Mingers (2006) extensively. Her study showed that systems thinking allow an understanding of complex problems from a holistic perspective, thus making their management more inclusive.

Also, Whittal (2008) indicated that critical aspects in a cadastral system reform processes are less likely to be ignored, and a social systems approach takes cognisance of the social as well as the natural aspects of systems. She adopted this approach to investigate a complex fiscal cadastral system, GV 2000 Project in Cape Town. She advocated that it offers a basis for understanding the complexity of the real world situations, thus making a problem more manageable, while also potentially improving the system (Whittal, 2008).

Whittal (2008) further argued that systems theory recognises the cultural, political, technical, social and economic aspects of the systems environment. These affect the functioning of the cadastral systems hence, systems theory is able to analyse these elements holistically (Whittal, 2008). She indicated that investigations in cadastral systems should embrace interdisciplinarity. This results in efforts having a greater chance of success and provides a clear and simple picture of how the systems environment works, which is of use to lay people (Whittal, 2008). Whittal (2008) supported the findings of Silver and Stubkjaer (2002) and Barry and Fourie (2002) who found that systems thinking applications in cadastral systems

research facilitate reflection and understanding of the existing situation before analysis is undertaken.

Soft Systems Methodology (SSM) in Cadastral Systems Research

Barry (1999) used soft systems methodology (SSM) for understanding and analysing problems in cadastral systems reform under uncertain situations and found it ideal for analysis of the structural elements and communication between these (Barry, 1999).

Furthermore, Barry and Fourie (2002) found that SSM in cadastral systems allows migration from simplistic approaches and incorporates holistic ways to analyse complex situations including social (beliefs, values and norms) aspects. They argued that the success of formal land registration is linked to the prevailing cultural, historical and social aspects in the system's context. For instance, even a well-designed cadastral system may fail to operate and produce expected results because of neglecting the culture, norms, perceptions, socio-political and economic aspects of the society whom the systems are intended for (Barry and Fourie, 2002). They claimed that SSM allows development of sustainable cadastral systems design because it allows researchers to investigate the effectiveness of the cadastral system beyond structures and processes (Barry 1999, Barry and Fourie, 2002).

Rakai (2005) and Nkwae (2006) also supported Barry and Fourie's (2002) findings. They both used SSM in cadastral systems research and found it suitable in addressing and analysing the complex social and cultural aspects affecting the functioning of the cadastral system. For instance, Rakai (2005) emphasised the importance of understanding the underlying world views, perceptions, values and aspirations of each country and concludes that these aspects have an influence on the operations of the land administration system. She further indicated that many reform projects have focused on institutional and IT reform rather than trying to understand local tenure processes as the first step towards improving land administration systems. She therefore, argued that despite wonderful improvements in measurements, design, communication and computer technologies, neglect of the cultural aspects of land tenure and land administration has resulted in the land administration systems remaining backward. Rakai (2005) further concluded that understanding the importance of cultural aspects could facilitate the development of more effective and appropriate land tenure policies and land administration systems.

Whittal (2008) investigated how SSM could inform the choice of methods and tools and referenced Mingers (2006) extensively. She found that central to SSM is an understanding of a subjective world view (Whittal, 2008), therefore, confirmed that systems theory has much offer to a suite of methodologies appropriate for cadastral systems research**.** In Whittal (2008) case, SSM was used to evaluate a fiscal cadastral system reform process, although it failed to sufficiently reflect real operations, management and environmental structures. SSM can be used with other tools which focus on material and technical aspects of a system such as VSM, to complement its strength in identifying the more social aspects (Whittal, 2008). However, she found that it is stronger at reflecting varying world views and conceptual sub-systems, for instance, the legislative sub-system (Whittal, 2008).

Viable Systems Modelling (VSM) in Cadastral Systems Research

VSM was used by Whittal (2008) in analysing a fiscal cadastral system. It was shown to be a useful technique for a systems analysis of an organisation's structure, processes, relationships and organisational reform. The ability of VSM to model a real System-In-Focus and its sub-systems in an integrated and holistic manner, based on the principle of recursion of systems, was found to be the main strength of the technique. Limitations of VSM were found to be its inability to reflect power and politics, as well as cultural, social and personal aspects in organisational systems. The weaknesses of VSM were accommodated by pairing VSM with the complementary technique of soft systems methodology (SSM) (Jackson, 2003, Checkland, 1999).

Within the general domain of systems research VSM has also been found to be a technique worthy of attention. Keating (2000) used VSM in analysing the organisational structure of health care organisations. The ability of these organisations to operate within, and adapt to a rapidly changing, complex and uncertain environment was analysed using VSM. It was found to be a useful tool for structural analysis and recommendation of formal and informal structural changes to organisations. Brocklesby and Cummings (1996) also successfully employed VSM for designing a viable organisational system for Telecoms Ltd. in New Zealand. They compared VSM to business process reengineering (BPR). BPR sees a machine as the metaphor for an organisational system; with BPR, change is driven by the local environment, particularly the customers (Brocklesby and Cummings, 1996).

BPR's focus on radical and fast change is different from the incremental and revolutionary change proposed by VSM (Brocklesby and Cummings, 1996). Vision and strategy are built into the VSM and internal intelligence is assumed whereas with BPR these must be specified upfront and are not part of the change process of BPR. The metaphor of VSM of the organisation as an organism with internal identity, focus and intelligence is critical to viability (Brocklesby and Cummings, 1996). Therefore, Brocklesby and Cummings (1996) recommend VSM for organisational analysis and change design.

However, the VSM application in cadastral systems research appears to be limited to that undertaken by Whittal (2008). Whittal (2008) used VSM to provide an understanding of the complexity in fiscal cadastral systems reform in the case of CAMA GV 2000 project. VSM was one tool within a suite of tools used in the multimethodological approach adopted by Whittal (2008) and it was partnered with other complementary tools. In her analysis, VSM unfolded the structures, communication channels and relationships in the fiscal cadastral system (Whittal, 2008). She therefore, found VSM useful in cadastral systems research in that it guides diagnosis, analysis and design of the systems.

2.3 Cadastral Systems and Reforms

This section addresses the findings of research in cadastral systems and their reforms.

2.3.1 Goals of Cadastral Systems

Several studies have reviewed the goals of cadastral systems, especially in the light of sustainable development goals (UNECE, 2003). For example, the FIG statement on cadastre (FIG, 1995) and Cadastre 2014 (Kaufmann, 2002) stipulated the role of cadastral systems, in particular the role of a multipurpose cadastral system within the goals of sustainable development. These studies found that cadastral systems enhance social and political justice, good governance, and efficient formal land market which ultimately improve the economic status of the country, thus promoting sustainable development. Recently, Enemark (2010) showed that cadastral systems differ in design, purpose and content, therefore, their technical and economical effectiveness varies. The humankind to land relationships makes the goals of these systems evolve with time, further noting that a well-tailored system serves as a backbone for society. He further, noted that they are to serve variety of land administration functions including land tenure, use, value and development (Enemark, 2010).

2.3.2 Problems with Cadastral Systems

The ongoing cadastral systems reform projects in developing countries indicate that problems with the current cadastral systems exist (Enemark *et al*, 2005). Researchers in the field of cadastral systems have been investigating the problems inherent of current cadastral systems, especially in developing countries with a view to find a suitable approach for design of these systems. Williamson *et al* (2008) showed that failures of these systems to deliver on expectations and ineffectiveness are linked. Studies of Enemark *et al* (2005), Whittal (2008) and Wallace (2010) found that problems are associated with, but not limited to shortage in skilled human resources, shortage of capital resources, weak governance, poor systems design, isolation of components parts of the systems from each other, lack of or inadequate political will, institutional inadequacy, lack of management and lack of control.

They further emphasised that poor design is caused by failure to adopt holistic approach in design of these systems, indicating over reliance on simple tools solutions in complicated situation such as those found in cadastral systems (Enemark *et al*, 2005, Whittal, 2008, Wallace, 2010). Enemark *et al* (2005) showed that the design of current systems is based on land administration theory that uses simple processes of surveying, mapping and registrations, in other words a non-holistic approach. In their paper, they indicated that these processes exclude the main functions of land administration, hence are too simple to promote sustainable development (Enemark *et al*, 2010).

The studies of Barry (1999), Rakai (2005), Nkwae, (2006) and Whittal (2008) showed that the non technical matters relating to the social, political and economic contexts within which the systems operates, have in most cases not been addressed. They argued that the identification of these aspects contributes knowledge, understanding and problems identification of the current systems and how to improve on them.

2.3.3 Cadastral Systems Reform Drivers and Goals

Ting and Williamson (2001) investigated issues driving the reform and re-engineering of cadastral systems around the world. They found that global forces including sustainable development goals, globalisation, economic reform, technology and urbanisation influence cadastral system's reforms. The aim is to achieve the Millennium Development Goals (MDGs) (UNECE, 2005). They further indicated that the ever changing humankind-land relationships also influence the reform of these systems as they have to keep up with the

needs of society they are designed to meet. Williamson (2000), Enemark *et al* (2005) and Williamson *et al* (2008) also supported these notions, and argued that there is a need for effective cadastral systems which promote sustainable development around the world. The effort required to reform these systems to improve effectiveness is overwhelming, particularly in the context of sustainable development goals. Current cadastral systems need to be reformed to cope with the ever-changing humankind-relationships (Ting and Williamson, 2001, Whittal, 2008, Williamson *et al*, 2008).

Wallace (2010) investigated the goals of cadastral systems reforms and found that they are often in line with international best practices in land administration. The best practices in land administration involve the land management paradigm, RRRs and good governance. Wallace (2010) argued that the best practices aim to develop systems which are capable of delivering sustainable development goals including economic development, social justice and good governance (Wallace, 2010). Reform of land administration systems is reflected in the published research associated with international organisations such as the International Federation of Surveyors, UN-Habitat, World Bank and the Millennium Challenge Corporation (UNECE, 2005).

Studies of UNECE (2005), Whittal (2008), Meelun (2008) and the Urban Institute (2008) have recognised some common characteristics in the reforms of cadastral systems. First, they are often funded by international organisations including the World Bank (UNECE, 2005) and Millennium Challenge Corporation (MCC) (Urban Institute, 2008). They also focus mainly on organisational and process reform largely implemented through Information Technology (IT)/Information System (IS) oriented projects (Whittal, 2008). Examples are projects focusing on the automation of land administration processes, improvements in communications, and designing of new organisational structures (UNECE, 2005, Urban Institute 2008). They further indicated that land policy reforms are very often prerequisite to implementation (UNECE, 2005, Meelun, 2008, Urban Institute, 2008). Manzoor *et al* (2009) argued that although the goals of cadastral systems are multiple, these include improving customer service with increased efficiency; improving the quality and accuracy of data, while providing all aspects of a multipurpose cadastral system. In addition, cadastral systems reform should improve the quality of life of the beneficiaries of the reformed system (Manzoor *et al*, 2009).

2.3.4 The Role of Government in Cadastral Systems Reform

UNECE (2005), Williamson *et al* (2008) and Wallace (2010) investigated the role of government in cadastral systems reform and found that government is central to the process since most land administration systems are run by government organisations. They build upon the notion that good governance promotes effective operation of land administration systems. Wallace (2010) stated that efforts to follow the principles of good governance stimulate successful land administration system reform.

The UNECE (2005) stated that governments are also critical in reform processes, policy reform and resource provision including financing the project implementing legislative changes, and project planning and implementation. Some of these roles are outsourced to consultants, but delivery of land administration services and their reform is the ultimate responsibility of government to its citizenry (UNECE, 2005). Policy reform is usually the starting point of land administration reforms as it enables a change in legislation to assist the reform of the system within the constraints of the law. It should state the rights, restrictions and responsibilities of the citizen (UNECE, 2005, Wallace, 2010, Williamson *et al*, 2010).

2.3.5 Problems with Reform Projects

Iatau and Williamson's (1997) study, supported by those of Barry (1999), Rakai (2005) and Whittal (2008), indicated that despite the myriad of goals associated with cadastral reforms, they often fail. This is especially true when they do not reflect the culture of land administration in the community they are intended to serve. Their studies showed that this often occurs when the goals of the reform project focus more on the material/ technological aspects of the system, while ignoring the fact that the cadastral systems are complex and are characterised by diverse social and political aspects relating to the internal and external environment of the system. Iatau and Williamson (1997) found that the reformed systems are often not suitable for their settings and are too expensive to implement and maintain. Meelun, (2008) and Whittal (2008) stated that the IT support systems are often too complicated to be maintained by local level systems.

2.3.6 IT/IS in Cadastral Systems Reform

Whittal (2008) emphasised that cadastral systems encompass both the natural and social aspects, therefore, IT/IS is a major driving force and a key component of any cadastral systems and reforms. With this understanding, it is clear that reform in cadastral systems

incorporates the adoption or improvement of IT/IS within the system (Whittal, 2008). The FIG (1995) best practices framework includes the implementation of computer-based mapping and IT/IS in cadastral systems reform. Cadastre 2014 also emphasises the use of technology as a solution to the problems of current cadastral systems (Kaufmann, 2002, Meelun, 2008). These frameworks have been critiqued by Barry (2005) and Whittal (2008), and argued that the suitability and validity for their use in developing countries, such as most African countries, should not be assumed without further investigation. They found that a neglect of external and internal environments in studying and designing IT/IS leads to systems failure hence a systems perspective in design of IT/IS projects is encouraged (Whittal, 2008).

2.3.7 Failure of IT/IS in Cadastral Systems Reform Projects in Africa

The study of Berman and Tettey (2001) reflected that IT/IS projects in developing countries is a well known problem. Although IT/IS projects are meant to speed up service delivery, success in implementation is minimal, especially in African bureaucracies (Berman and Tettey, 2001). They indicated that many international consultants are more familiar with systems of their own country which they want to implement in developing countries hence a disparity between IT design (Western design) and the context (African environments) where IT is to be implemented often exists. Bogaerts and Zevenbergen (2001) and Whittal (2008) showed that this is regarded inappropriate as IT is expensive and sometimes does not model the existing social humankind-land relationships. They further emphasised that the larger the design reality gap, the greater the chances of failure. Furthermore, Berman and Tettey (2001) found that lack of political will in African countries inhibit transfer of IT, therefore, caution needs be taken during implementation.

2.3.8 Challenges Faced by Governments

Zevenbergen and Bogaerts (2001), Whittal (2008) and Meelun (2008) argued that governments especially those in developing countries, face challenges with cadastral systems reform projects. Even though they receive support from international organisations, some problems still persist. They indicated that lack of local human and capital resources poses challenges. Furthermore, the capacity to implement new IT/IS systems is lacking due to shortage of local IT experts. Zevenbergen and Bogaerts (2001) further argued that the over-reliance of government on international consultants and experts hinder the success of IT/IS cadastral systems, as consultants are often familiar with their own country's systems design

which they sometimes transfer to other settings, reducing the chances of success of the reformed systems. Government administration systems in developing countries will not automatically become effective as a result of IT/IS; socio-cultural change is needed alongside the implementation of IT/IS in cadastral systems reform (Whittal, 2008).

2.4 The Best Practices Standards in Cadastral Systems Research

The Land administration experts, such as Enemark, S., Williamson, I. and Wallace, J. (2010) have over time developed the framework of the land management paradigm and declare it as a suitable framework to guide reform and design of land administration systems, which are capable of leading countries to sustainable development irrespective of the level of development (Williamson *et al*, 2010). This section, therefore, addresses the research findings related to this best practices framework and its underlying frameworks of good governance and rights, restrictions and responsibilities (RRRs).

2.4.1 The Land Management Paradigm in Cadastral Systems Research

Williamson *et al* (2008) investigated the importance of addressing the cadastral system's design problems in cadastral systems research, with a view to promote effective systems. They argued that a move from land administration theory to adoption of the new theory, the land management paradigm (LMP) is necessary. They indicated that this paradigm is suitable for guiding the reform process and design of effective cadastral systems which promote sustainable development. In this theory, the four functions of land administration are integrated for effective functioning and delivery of the processes which distributes the RRRs adequately (Williamson *et al*, 2008). Wallace (2010) supported the use of this holistic approach for design of cadastral systems and emphasises its effectiveness in promoting good governance in land administration systems, which is essential for any country to attain the goal of sustainable development.

2.4.2 Good Governance in Cadastral Systems Research

Recent developments in cadastral system research (FAO, 2007, Bell, 2007, Antonio, 2008, Zakaut, 2011, FAO, 2007, Williamson *et al*, 2008, Wallace, 2010, Whittal, 2011) have shown the importance of incorporating aspects of good governance in cadastral systems research and evaluating effectiveness of these systems based on principles of good governance. Research such as Whittal (2011) has listed and interpreted the principles of good governance and some

like Samsudin (2011) used good governance principles to examine the land administration system (LAS) in country's context.

For example, Whittal's (2011) principles of good governance include equity, participation, pluralism, transparency, accountability, and rule of law. Emphasis is on effective, efficient and enduring implementation of these aspects for effective land administration systems (Whittal, 2011). She indicated that they are a means to the successful implementation of a cadastral system (Whittal, 2008). Whittal (2011) further pointed out that these principles are diverse and holistic as they present the social, technical, material and personal aspects (Whittal, 2008). As such, they should be used to guide and inform the development of land administration systems projects (Whittal, 2011).

Samsudin (2011) used the principle of good governance, and concentrated on organisational arrangements of Malaysian land administration systems towards good governance. The study found that due to lack of policy and scattered organisations, the country experience administrative difficulties which inhibit effective and efficient delivery of land administration. The study therefore, concluded that organisational arrangements in land administration need be enhanced towards successful and sustainability of good governance (Samsudin, 2011).

In all this research (FAO, 2007, Antonio, 2008, Wallace 2010, Samsudin, 2011 and Whittal, 2011) good governance is emphasised to be central to sustainability of land administration systems.

2.4.3 The RRRs in Cadastral Systems Research

Problems exist in delivering and managing the rights, restrictions and responsibilities (RRRs) in accordance with the LMP. These problems are related to the legal framework as well as the design and management of land administration systems (Bennett *et al*, 2006). Bennett *et al* (2005) argued that the current cadastral systems pose a threat to the achievement of sustainable development goals because these systems do not best manage and distribute the property rights, restrictions and responsibilities. This poses a serious hindrance to achieving sustainable development. The land administration literature confirmed that the RRRs are often poorly designed, administered and managed (Bennett *et al*, 2005, Bennett *et al*, 2006).

2.5 Conclusion

This chapter discussed current literature underlying research in cadastral systems and their reforms. It has laid a foundation for this research's theoretical framework, hence has answered one of the research objectives which is finding suitable methodologies for this research.

Chapter 3. Theoretical Frameworks for Real World Research in Cadastral Systems

3.1 Introduction

This chapter addresses the conceptual frameworks of theories, paradigms, methodologies and analysis frameworks applicable in cadastral systems research. It encompasses critical realism, multimethodology, single case study, systems thinking theory, the social systems theory including soft systems methodology (SSM), viable systems modelling (VSM) and hard systems methodology (HSM).

3.2 Basic Concepts

This section provides definitions of basic concepts. The approaches adopted in qualitative research are each influenced by their underlying paradigms, hence it is also important to discuss the paradigms which influence the research and their fundamental differences before the methodologies are presented (Denzin and Lincoln, 1998, Whittal, 2008).

Ontology is a way of viewing the world (Whittal, 2008)

Epistemology is way of creating knowledge about the world (Whittal, 2008).

Paradigms refer to the net that contain the researcher's ontological, epistemological and methodological ideas about the world (Denzin and Lincoln, 1998). They are used to facilitate finding answers to real world problems.

Constructivist paradigm is a paradigm which views reality about the world as constructed using symbols and language systems and knowledge and truth is the result of the perspective of the researcher. It places the researcher above the case being investigated because understanding is build in the mind of the investigator (Denzin and Lincoln, 1998).

Interpretivist paradigm is a paradigm which involves qualitative research with participant observation and field research. It is a logical analysis of events based on direct observation of people in a natural setting. This facilitates understanding of the social world as maintained by the people. It produces meaning from the case reflection (Denzin and Lincoln, 1998).

Functionalist paradigm is a school of thought which facilitates the use of social systems theory and approaches. It accommodates pluralism and hence supports a multimethodolgy

approach. It encourages understanding of society in a manner which produces useful empirical information (Kuchinke, 2001).

Positivist paradigm is a paradigm which asserts that reality about the social word is out there to be discovered using scientific research which is understood to be the only way to discover the truth about the world. Objective accounts of the real world can be provided for through scientific experiment; the social reality is independent of the social environment (Denzin and Lincoln, 1998).

Post positivist paradigm is a paradigm which assumes that reality can only be approximated. It relies on multiple methods as a way of capturing as much reality as possible. Emphasis is on the findings and proofs of theories. This paradigm is used in evaluation of projects and systems and it stresses on internal and external validity. Systems theory and causal knowledge are emphasised (Neuman, 2000).

3.3 Critical Realism as a Basis for Multimethodogy in Research

Critical realism it is a theoretical paradigm in research, which allows for natural and social aspects of a problem to be investigated. Multi-paradigms, multi-theories and multi-methods are well-served by a critical realism paradigm (Mingers, 2006). This approach is preferred because it allows for the use of different paradigms regardless of whether they refute each other e.g. positivism and constructivism (see Section 3.2). It further accommodates approaches which embody different perspectives such as functionalism and interpretivism (see Section 3.2).

Whittal (2008) acknowledges that critical realism is a philosophical framework which is pluralist in nature and allows both the investigation of natural and social science events (Mingers, 2006). It is, therefore, a basis for multimethodological approach, hence research which constitutes natural and social aspects (Mingers, 2006). Research in cadastral systems encompasses both natural, tangible and material aspects as well as social aspects (Whittal, 2008).

3.4 Multimethodology Defined

Mixed method and or multimethodology approaches are underpinned by critical realism. Multimethodology therefore, means using more than one method/tool to tackle and address real world problems (Mingers, 2006, Whittal, 2008). It also involves using methods with straddle paradigms, hence the researcher needs to adopt more than one paradigm in

addressing and analysing problems with such a strategy (Whittal, 2008). The common paradigms are interpretivism, positivism, functionalism and critical realism. Problems of the real world are perceived to be multidimensional, encompassing material aspects as well as social, cultural, political and personal aspects (Mingers, 2006). These may be analysed at different stages in different contexts, hence each aspect may or may not be based on unique paradigm (Whittal, 2008).

The use of multiple methods is in line with the principles of triangulation (Yin, 2003) and strengthens the generalisability of results. Mingers (2006) advocates different perspectives of viewing the world. He argues that doing so provides a better understanding of the existing situation. He discourages a single approach and claim that multimethodology is desirable as it gives a more holistic approach to understanding events in real life (Mingers, 2006).

3.4.1 Barriers to the Use of Multimethodology

Mingers (2006) argues that although multimethodology is desirable, it has barriers which could affect exploration of events. Such barriers include philosophical, cultural and psychological (Mingers, 2006, Whittal, 2008). Philosophical barriers involve the use of paradigms which dispute each other such as positivism and constructivism (see Section 3.2). Psychological barriers result from the chances of a researcher to prefer a certain paradigm over others, while cultural barriers exist in cases where the culture of an organisation mitigates against multimethodology (Mingers, 2006).

3.5 The Case Study Strategy

Case study is a research strategy which investigates a phenomenon in its natural context using multiple sources of data (Yin, 2003). It is used to conduct both qualitative and quantitative research with the aim of analysing processes in the social world (Denzin and Lincoln, 1998). Case study strategy is distinct from other research strategies by its multiple sources of empirical data (Yin, 2003, Denzin and Lincoln, 1998). The multiple sources of data include documents, interviews, direct observation, participant observation, archival records and physical objects (Yin, 2003). This strategy is increasingly used to observe and analyse real world problem situations and its results contribute to the knowledge about individuals, organisations and social structures (Yin, 2003).

Yin (2003) emphasises that case study strategy is more suitable when the "how" and "why" questions are asked in research. These questions seek to provide reasons and understanding of how and why certain events occur (Yin, 2003). He further indicates that central to this strategy is provision of understanding, rather than to give solutions to the problems which are perceived, although it may facilitates and give direction to solution (Yin, 2003).

3.5.1 Single Case Study Strategy

Single case studies are best used to investigate an intrinsique, unique or unusual case, revelatory, or extreme case (Denzin and Lincoln, 1998, Yin, 2003). The aim is to present a rich description for better understanding of a particular case, thus contributing to knowledge. Generalisation of results is not emphasised, but single case study research favours naturalistic generalisation (Denzin and Lincoln, 1998, Whittal, 2008). Furthermore, it can be used to test existing theory. Examples are the use of case studies in cadastral systems research including those of Barry (1999) and Whittal (2008).

Intrinsic Single Case study

This type of single case study investigates a case which is of a particular interest to the researcher. Theory building is not the main focus (Denzin and Lincoln, 1998). Examples of such studies involve those of Iatau and Williamson (1997) and Whittal (2008).

Unique Single Case Study

The culture, history, physical environment, and the complexity of the situation with regard to the social, economic and political aspects build up a unique single case study (Denzin and Lincoln, 1998, Yin, 2003). For instance, a single case study of the fiscal cadastral system reform in Whittal (2008) is unique.

Extreme or Critical Single Case Study

An extreme or critical case study strategy investigates a significant phenomenon under rare or extreme circumstances (Denzin and Lincoln, 1998). An example is the extreme case of the cadastral system investigated under political change in South Africa by Barry (1999).

3.5.2 Sources of Evidence in Case Study Strategy

A case study strategy to research is characterised by multiple sources of data (Yin, 2003). Baxter and Jack (2008) argue that each data source is one piece which contributes

significantly to the researcher's perceptive of the whole phenomenon under study. A case study database is normally established to allow a chain of evidence to be maintained (Yin 2003). Subsequently, information from these data sources is converged during data analysis, rather than handled individually. Triangulation of results increases construct validity and leads to a more holistic understanding of the case and strengthens the research findings, while achieving a rigorous case study (Denzin and Lincoln, 1998, Yin, 2003, Baxter and Jack, 2008). Multiples sources of data are discussed below.

Documentation

The case study documentation includes books, reports, journals, memorandums and newspapers (Denzin and Lincoln, 1998, Yin, 2003).

Archival Records

This source includes records archived in store rooms, mostly including but not limited to organisational charts, organisational records, maps, service records and client entry records (Yin, 2003).

Visual Data

This data includes films, video, photography as means of recording and documentation (Pelto and Pelto 1978).

Observations

Observation includes participant observation and direct observation. Like other data sources in case study research strategy, these techniques serve as important sources of data in research. A participant observer is immersed in the lives of people, and this can be done through months of residence in the local community (Yin, 2003). However, it has problems relating to validity and reliability, observer and setting biases, observer effects and absence of checks. Direct observation entails the presence of the researcher in the social situation with the purpose of observing every step of the actions of the people in a situation (e.g. functions performed in the system) (Yin, 2003).

Personal Experience

Personal experience reflects the flow of thoughts and meanings a person brings to their immediate situation. They assume the shape of a story or a narrative. It is however, difficult to study direct, lived experiences, because language, speech and thoughts mediate and define the experience that the researcher is attempting to describe (Pelto and Pelto, 1978).

Interviews

Types of case study interviews are: structured, unstructured and open-ended interviews. These types of interviews provide qualitative information and are designed in such a way that they cover a wide range of research objectives (Denzin and Lincoln, 1998). Some interviewee's responses lead to further questions. This style of interviewing allows much freedom for the interviewee to provide his/her personal views and experiences relating to the case (Neuman, 2000). However, the interviewer can easily divert from the goals of the interviews, but this is allowed in qualitative research (Neuman, 2000).

Interviews with key informants may be exceptional rather than a representative person in the community and they may reflect life histories. Interviewing is influenced by the biographical characteristics of an interviewer including race, class, ethnicity and gender (Denzin and Lincoln, 1998).

3.5.3 Analysing Case Study Results

Data collection and analysis transpire simultaneously in case study research. Each informs and focuses the other throughout the research process (Neuman, 2000, Yin, 2003). Analysis from data collected improves understanding of the case, hence informs knowledge about what further data is required (Yin, 2003).

3.5.4 Generalisation in Case Study Research

Case study research strategy results are generalised either by naturalistic, statistical or analytic generalisation (Yin, 2003). However, Denzin and Lincoln (1998) state that generalisation should not be emphasised in all research, rather researchers should conduct case study for understanding purpose. They further note that damage could occur when the researcher is committed to generalise findings or build theory, to an extent that the main aspects relevant for understanding the phenomenon itself are ignored. Furthermore, the case study researcher has a choice as to the amount of information that needs to be understood;

therefore, not everything about the case need be understood (Denzin and Lincoln, 1998). Naturalistic and analytic generalisations apply in qualitative research.

Naturalistic generalisation relies on a detailed case study narrative from which the researcher builds up an understanding of the case (Yin, 2003). The conclusions are only generalisable to other cases in so far as the cases are similar. In this type of generalisation, researchers critically assess whether the case study conclusions would be applicable to other cases based on reading the case study narrative and understanding other cases. The researcher aims to generalise the results to some broader theory. Narrative style of writing in research allows future researchers to view the case from different perspective and apply naturalistic method to analyse the results of their findings (Yin, 2003).

In analytical generalisation, the goal of the researcher is to expand and generalise theories. Two or more cases are used to test existing theory. If they support this theory, and also refute alternative theories, then generalisable conclusions can be drawn relating to the usefulness of that theory e.g. the use of systems theory in case study research (Whittal, 2008).

3.5.5 Triangulation in Case Study Strategy

Triangulation is a rationale for using multiple sources of evidence. It implies observation of a case from different perspectives, and is encouraged in research (Neuman, 2000). The opportunity to use different data sources and triangulate data from those sources is facilitated by case study research (Yin, 2003). The research design and analysis should incorporate triangulation. When data is triangulated the results are supported by different sources of evidence (Denzin and Lincoln, 1998). Types of triangulation are methodological, theoretical, discipline and paradigm triangulations.

Data Triangulation

The data collection effort focuses on multiple source of evidence. Data collected is triangulated to produce similar set of facts. A case database (a formal collection of facts different from the final case narrative) is created and a chain of information that links the data to the research questions and the conclusions drawn is maintained (Denzin and Lincoln 1998).

Methodological Triangulation

In methodological triangulation, various methodologies are used to strengthen validity and increase knowledge in research. It also involves mixing qualitative styles of research with quantitative styles (Denzin and Lincoln 1998). Neuman (2000) argues that most researchers become experts in one style, but a study which uses both is more comprehensive.

Theoretical and Paradigm Triangulation

Theory triangulation occurs when a researcher uses multiple theoretical perspectives early in the research planning stages. This may be difficult, but helps in developing new ideas (Neuman, 2000). Application of critical realism in research implies paradigm triangulation in research (Whittal, 2008, Mingers, 2006).

Discipline Triangulation

Concepts, theories and methodologies adopted in case study research are, in most cases, interdisciplinary (Denzin and Lincoln, 1998). Information is drawn from disciplines such as engineering science, natural science, social science, geography, philosophy and law. Adoption of various disciplines facilitates and strengthens the rich description of the case for better understanding (Denzin and Lincoln, 1998).

3.5.6 Bias in Case Study Research

Bias is a tendency of the researcher to favour other theories, methods, ideas, and data over others (Whittal, 2008). Opportunities for bias occur all the time in research. Neuman (2000) and Whittal (2008) emphasise cultural bias in which the cultural setting of the research has an influence. They maintain that the researcher's ontology, epistemology and methodology can lead to bias. Each researcher is assumed to believe that her/ his own beliefs, assumptions, concepts, values and ideas apply universally to the social world (Neuman, 2000, Whittal, 2008). This is because the methodologies chosen flow from the researcher's values, beliefs, life experiences and way of viewing the world, as they are always at play in qualitative research (ontology and epistemology (Whittal, 2008).

However, bias can be minimised by training the researcher on the precise use of appropriate research tools and techniques, methods and theories (Whittal, 2008). Correct application of research tools is also important and helps combat bias (Neuman, 2000).

3.6 Systems Thinking Theory

System thinking is an approach to solving systems problems, which regards sub-systems problems as part of the whole system (Checkland, 1999). The elements of a system (sub-systems) are understood in relation to their interactions with each other and with other systems, rather than separately (Checkland, 1999). The best way to understand the reason a certain problem arise and continue in any organisation/ system is to understand the system in relation to the overall system, examining the linkages and interactions between the elements that compose the entire system. Checkland (1999) encourages holistic thinking and views a problem as part of a larger picture of the system. Systems thinking therefore, view a problem in a holistic manner as opposed to reductionism. It is not restricted to one area of application and systems can be real (e.g. organisations and their divisions) or conceptual (e.g. legislative system) (Checkland, 1999).

3.6.1 Systems Thinking Terms and Definitions

System thinking theory has its own language and concepts used (Checkland, 1981, Jacksons, 2003, Beer, 1995). Various systems concepts are described in this section.

System

A system is a set of elements that relate with each other to perform as a whole. The parts of the whole are more than properties of the component parts (Checkland, 1999). Systems reflect the complexity of a number of different connected elements. Sub-systems may be examined in isolation; however, it is the whole which should be the focal point of the analysis (Checkland, 1999).

Characteristics of Systems

Checkland (1999) indicates that systems have particular characteristics which are discussed briefly in this section.

***Emergent Properties*:** The properties of a system which enables it to be adaptive and survive in a changing environment are termed emergent properties (Checkland, 1999).

Hierarchy: Within the system there are higher level systems and lower level sub-systems (Checkland, 1999).

Feedback Loops: Both the system and the environment have semi-permeable membranes (boundaries) which allow flow of information, materials from and into the surrounding environment. Feedback is thus facilitated (Checkland, 1999).

Systems Theory

Systems theory addresses problems relating to relations of structures of a system and their interdependence. Systems theory provides a basis for tackling big, complex and messy real world situations and provides a clear picture of how they interact with their environment (Checkland, 1999).

Sub-Systems

Within complex systems, a number of smaller systems can be identified. These sub-systems interact with an aim to attain the goals of the system (Checkland, 1999).

Holism and Holistic Systems

Holism considers a system to be more than the sum of its parts (Jacksons, 2003). It recognises the parts and their functions, but includes the network of relationships between their parts and how they function within the whole (Jackson, 2003). Although the whole is considered a system, the sub-systems are also systems in their own right. The aims of the whole are shared by its sub-systems (Checkland, 1999).

Systems Approach

This is an approach to understand real world situations from a holistic perspective. It takes all aspects into account when trying to understand systems (Checkland, 1999). There are hard systems approaches and soft systems approaches (Jackson 2003).

Systems Practice

Systems practice is the action of using the tools/ideas of systems thinking to initiate and guide action towards tackling real world problems (Checkland, 1999).

Systems Methodologies

Systems methodologies are tools to understand and solve real world problems from a systems perspective. Each technique has strengths and weaknesses. Techniques can be matched to

combine their strengths required to understand a problem situation (Jackson, 2003, Whittal, 2008). Various systems models can be considered to assist the researcher to understand real systems under study (Checkland, 1999, Jackson, 2003).

3.7 Social Systems Approaches

Systems may be analysed or developed according to the hard system methodology and soft system methodology (Jacksons (2003).

3.7.1 Hard Systems Methodology (HSM)

Hard system methodology (HSM) is appropriate in situations where problems and objectives of the system are clearly defined. It is a goal-seeking methodology (Checkland, 1999, Jackson, 2003). This method deals with quantified problems in a system such as those in relation to software and hardware development. It is based on a positivist paradigm. It therefore, excludes problems pertaining to culture, beliefs, social and economic factors. HSM regards human beings as passive and assumes that systems contain problems which can only be solved through engineering (Jackson, 2003). Solutions involving technological devices and computers are addressed through this methodology and some problems are solved (Jackson, 2003).

In addition, this systems approach assumes people share values and beliefs and is used to attend to simple systems problems (Jackson, 2003). Users of hard systems methodology often rely on mathematical models to explain relationships between parts or to solve problems, while ignoring all other relationships and factors which could influence a problem (Jackson, 2003). HSM is not appropriate to tackle complex, pluralist or coercive problems. The exclusion of multiple perspectives is also not suitable for solving complex social problems (Jackson, 2003). However, hard systems methodologies compliment soft system methodologies (Whittal, 2008).

3.7.2 Soft Systems Methodologies (SSM)

Checkland (1999) defines Soft Systems Methodology as a well established way of intervening to improve the problem situation in a system. SSM is a process of inquiry which uses systems ideas to structure and model the problem situation for understanding and debate (Checkland and Scholes, 1990, Reid *et al*, 1999). Jackson (2003) notes that SSM grew out of failure of systems engineering when faced with complex and messy situations.

Characteristics of Soft Systems Methodology

SSM is a social systems approach and well documented in Checkland (1999) as being suitable for interventions in ill structured problems of an organisation. It helps an analyst to look at the problem situation through different lenses. It comprises a range of techniques such as rich picture, CATWOE elements, human activity systems or conceptual models (Checkland, 1999).

However, not all techniques apply to all problem situations, because the problem contexts differ (Jackson, 2003). This tool does not require goals before problems solving begins. It is well known to tackle problems which are regarded complex, pluralist and coercive in nature and need to tackle in a structured manner (Checkland, 1999). SSM recognises all problems which are socially constructed including culture, politics and economics of the problem situation. Users of SSM consider changes which improve the systems as desirable.

Modelling Using SSM

Models of SSM are simply devices which assist in gaining a rich understanding of the whole system in its context (Checkland, 1999).

The Rich Picture

The rich picture is a well known technique in SSM. It provides the actual drawings from multiple perspectives which allow the problem situation be viewed as perceived (Jackson, 2003). Studies such as that of Whittal (2008) have used various pictures, like cartoons, to show a rich picture of a problem situation. Pictures are a desirable representation of reality since they are easy to comprehend (Checkland, 1999). If the rich picture is well-drawn, it should reveal relationships between system elements, including both formal and informal relationships.

The CATWOE Elements

This tool of SSM defines a certain protocol which is build on the basis of the shared world view of the situation (Checkland, 1999, Jackson 2003). SSM through its CATWOE as a modelling device focuses on the following aspects:

C-customers: the focus is on the stakeholders of a system, who would be victims or beneficiaries of the existing system.

A-actors: involves the institutions and employees in a system that carryout the activities of the systems to satisfy the stakeholders.

T-transformation process: in meeting the need for efficient system, consideration must be given to the input and its transformation into output.

W-weltanschang/ worldview: what worldview underpins belief that effective system steers socio-economic growth, hence improving livelihoods? What image of the world makes the system meaningful?

O-owner: the State, employees and users of the system who could abolish the system.

E-environment constraints: the operational structure of the system and the support received from outside could be a constraint towards the effective operation of the system. Consideration must be given to the external constraints which the system takes.

The Root Definitions

Root definitions are the level at which different sub-systems lie. They need to consist of several elements as summarised in the CATWOE mnemonic (Checkland, 1981). However, its primary elements are from the (T) of the CATWOE elements. They should facilitate answering the following questions: "What to do?", "How to do it?" and "Why do it?" Checkland (1981) maintains that the definitions of the system, sub-system and the environment depend totally on the observer. Also, that in trying to identify the root definitions of the different systems, it is important to recognise the different level of the problem. Defining root definitions facilitate identification of relevant sub-systems in a problem situation (Checkland, 1981).

Human Activity Systems Models

Human activity systems are sometimes called root definitions and are represented as conceptual models (Reid *et al*, 1999). They are the tasks and issues identified from the rich description, and are regarded as applicable to the problem situation (Checkland, 1999, Jackson 2003). They explore a possible change in a problem situation given the culture, political and historical contexts. A number of different root definitions are recommended to ensure a holistic approach (Jackson, 2003). Checkland (1999) indicates that given the

complex nature of any situation, there are a number of relevant human activity system models that could be build. The models built are based on a certain world view (Checkland, 1999).

Analysing Systems Using SSM

Analysis in SSM is undertaken through the two streams analysis. They involve a cultural-based stream and a logic-based stream (Checkland, 1999). These streams are grounded on appreciation of the history, and existing structure of the situation, established from the views of the people linked with the problem situation (Checkland, 1999). These streams are taken on in parallel and are interconnected, the one informing the other. The model of SSM two streams of analysis is illustrated in Figure 3.1. This model is used to analyse the situation in a system through the two streams of analysis.

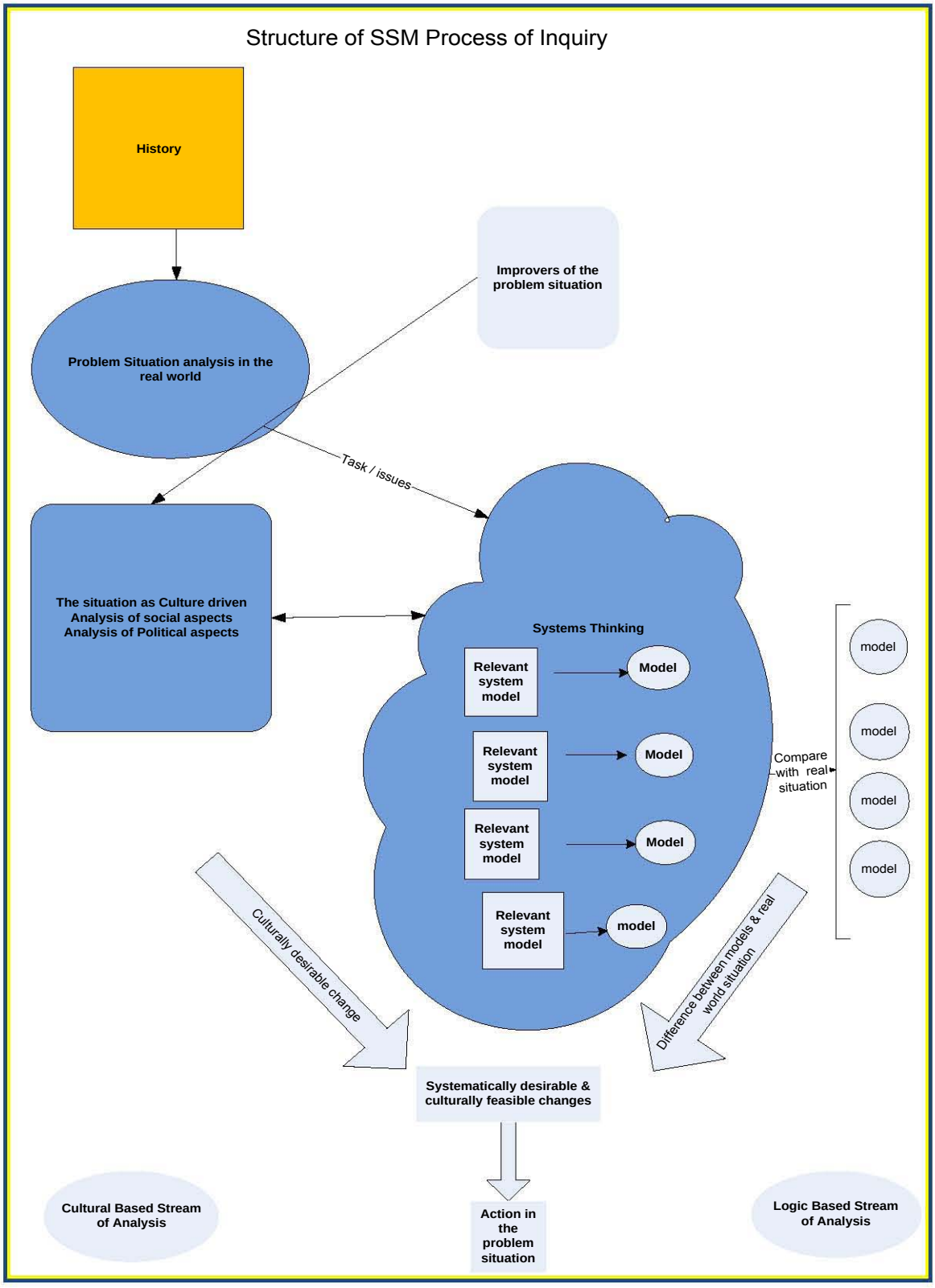

Figure 3.1 SSM two streams of analysis model (Reid *et al*, 1999: 10)

The Cultural-based Stream of Analysis

The social and political aspects are analysed in this stream. This stream contributes to the rich description of a system, while it also facilitates learning and debate about the situation. Findings from the cultural-based stream fit into the logic-based stream of analysis and present a base for delineating action that is culturally feasible (Checkland, 1999).

The Logic-based Stream of Analysis

This stream of analysis is directed by systems thinking (Checkland, 1999). Relevant human activity systems identified are used and compared to the real world situation. This leads to understanding of the problem and facilitates identification of gaps between this situation and its goals, as well as defining desirable actions to improve the situation (Checkland, 1999).

Synopsis

The overall aim of SSM is action research and interaction in a problem situation. The tools of SSM are action research and intervention in a problem situation. However the tools of SSM can be used for analysis without intervention.

3.7.3 Viable Systems Modelling (VSM)

Viable Systems Modelling is a holistic framework for understanding organisations and relating organisational processes (Beer, 1995). This conceptual framework is termed the science of effective organisation and central to the approach is the principle of cybernetics, which can be applied to all types of organisations and institutions. The main objective is to make these systems more efficient and effective (Beer, 1995).

VSM is a systemic method of modelling and analysing an organisation's structure, entities, as well as the relationships and patterns that emerge during the operations of the organisation (Keating, 2000). These cannot be predicted, but are emergent properties and include both soft (largely qualitative) and hard (largely quantitative) organisational aspects, as well as both formal (explicit) and informal (tacit) structures and relationships (Keating, 2000).

VSM Concepts

Various language and or concepts apply to the use of VSM (Beer, 1995).

System-In-Focus

The first step in VSM is to identify a System-In-Focus. A System-In-Focus is a system that is being investigated and analysed using the VSM tool (Beer, 1995).

Organisations as Recursive Systems

Recursion in a system refers to building up of complex organisation. It is based on the idea that all dynamic systems are autonomous systems composed of sub-systems. They all have self-regulating, and self-organising characteristics (Espejo and Gill, 1997). The sub-system also contains further sub-systems until they reach down the level of single unit. At whatever level the system occurs, it is able to maintain a separate existence. VSM models recursive structures with long term viability, but most importantly all systems and sub-systems are involved in achieving the same objective, thus providing goods and services to maintain performance of the System-In-Focus (organisation). However, the systems are maintained by adequate regulatory and communication functions to assist them to perform successfully at every recursion/level (Espejo and Gill, 1997).

Autonomous Systems

Autonomous systems are those which are viable (Beer, 1995). They are able to maintain a separate existence and are self-organising. Autonomy depends on a number of elements (see below), most of which are only visible when the system is in operation.

Viability

Viability/autonomy in a system is measured or evaluated based on a number of elements including the systems conformity to the VSM design, efficient resources (both capital and human) and the balance of variety and effective communication channels between elements of the system (Beer, 1995).

Recursion

Recursion means the next level in the system which contains all the levels below it (Beer, 1995).

Higher System and Lower System's Levels in VSM

VSM includes higher level system and lower level system. The lower system consists of the operational aspects of the system while the higher system consists of the management aspects of the system. The control, intelligence and policy (Systems 3, 4 and 5) are undertaken in the higher system level, while the operations and regulators (Systems 1 and 2) are undertaken in the lower level system (see Figure 3.2) (Beer, 1995).

The control function takes place in System 3. This system is the most critical of all as it is the intersection of the higher level system and the lower level system. That is it intersects System 1 to 3 and 3 to 5 (Beer, 1995). It appears on both groups of the systems level and more thought of as running the whole System-In-Focus (Hilder, 1995).

Usefulness of VSM

VSM helps experts to deal with complex problem contexts in a structured manner (Beer, 1995). It sees organisations as recursive systems, with self-organising sub-systems and self-regulating characteristics having the capacity to adapt to a changing environment (Beer, 1995). VSM is a tool for analysing, understanding organisations, redesigning, regulating and developing organisations when necessary (Beer, 1995). It is a powerful tool to steer interactions in directions that produce effective structures in systems. The structures, processes and communication feedback loops of the system are modelled using VSM. The model is also used to design the organisational structure of any viable or autonomous system (Beer, 1995).

In addition, VSM is used as a framework to design adaptive systems, responsive to environment changes. Structures, relationships and processes in an organisation can be modelled using VSM (Beer, 1995). Systems evaluators can use the tool to monitor the system's performance. It regards all systems as purposive and every individual is responsible and contributes to the effective organisational structure and performance (Hilder, 1995). The proper application of VSM increases efficiency in an organisation as the model does not rely on top-down approaches. Systems analysts can use VSM as a means to analyse and or

diagnose the systems problems, to design, regulate and develop all the systems or sub-systems that are present (Beer, 1995).

VSM for Modelling Systems

VSM models the functional, management, communication, and regulation aspects as well as the controls on variety, and the inter-relationships between the organisation and the environment (Hilder, 1995). Modelling focuses on "functions and activities, not physical entities" (Keating, 2000, 186). VSM follows the principle of recursive systems; each system is contained within higher-level systems, and also embodies lower-level systems. One of the first steps in modelling is the identification of the System-In-Focus. The result of VSM is the generation of graphical models given in Beer (1995), of which a generic form of Figure 3.2 is shown.

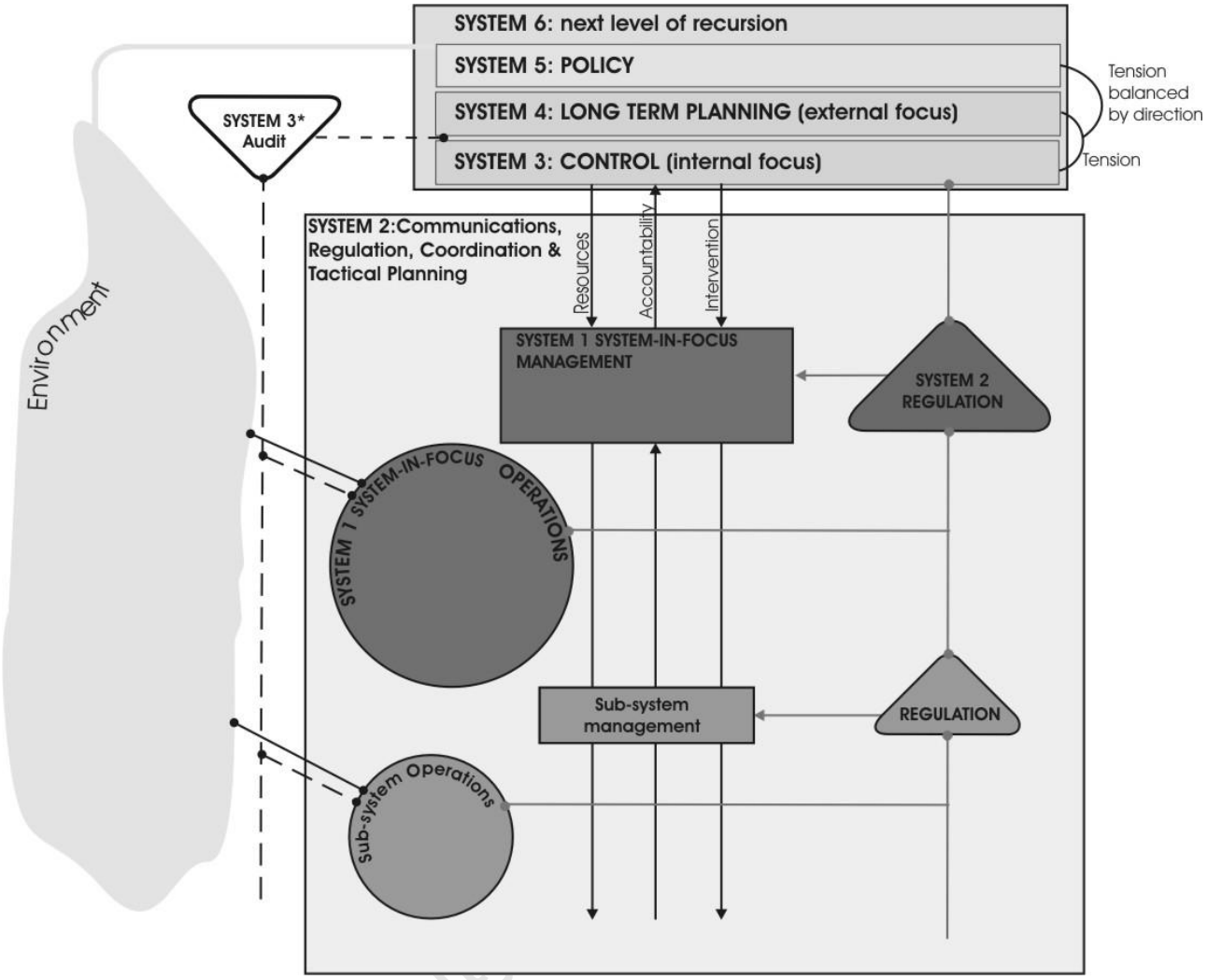

Figure 3.2 A complete VSM diagram (Mabesa and Whittal, 2011)

The idea behind VSM is to integrate for communication and interaction purposes, all aspects of the system both in and outside the system, which includes the customers, the partners/ stakeholders and the society as a whole, for which the organisation operations depend (Beer, 1995). The internal and external environment influences the functioning of the system. However, the system structure does not change due to the environment, but the environment can change due to the structure of the system (Beer, 1995). The emphasis is laid on the stakeholders of the system, who may benefit from effectiveness of the system or be victims of inefficiency of the system (Beer, 1995).

Ineffectiveness in the system is caused by poor transmission of policy, poor design in structure and ineffective communication channels (Hilder, 1995). VSM is used to design effective systems which are capable of maintaining viability and identity and adapting to a

changing, unpredictable and complex environment (Beer, 1995, Keating, 2000) even if those systems are bureaucratically governed (Hilder, 1995). Viability, or survival of the system in the face of change, is linked to the notion of sustainability.

Functions of a Viable System

A viable system needs to have five essential functions of viability, if it has to function effectively in its environment (Beer, 1995, Espejo and Gill, 1997). These are the operations/implementation, coordination/ regulation, control, intelligence/long term planning and policy elements. Beer (1995) also names these functions: System 1, System 2, System 3, System 4 and System 5. They are discussed briefly in this section and shown in the generic model of VSM demonstrated in Figure 3.2.

System 1: Operations/Implementation

This is where the operations of the system take place (Espejo and Gill, 1997). The goods and services are produced at each recursive level (sub-systems) as some of the overall activities of the system. This function is the core of the overall system. It determines the existence of the System-In-Focus (Espejo and Gill, 1997).

System 2: Coordination/ Regulators

Espejo and Gill (1997) emphasise that coordination in a system ensure and stimulate efficient flow of information and knowledge to optimise the systems performance and survival. This coordination is often well achieved through IT development for effective communication of the autonomous parts of the system. The technological and humankind driven links should enforce a sense of empowerment and autonomy and also ensure that relevant information is transmitted to everybody at the right time if the system is used effectively (Espejo and Gill, 1997).

System 3: Control

Supervision and monitoring of the operations of the system is an important function (Beer, 1995, Espejo and Gill, 1997). This ensures that goods and services are produced at each recursive level. Actions of the operations are controlled to ensure they adhere to the functions intended (Hilder, 1995).

System 4: Intelligence/Long term planning

This function emphasises that the environment in which the system is situated should be continually studied and understood (Hilder, 1995). The external environment is very important because it highly influences planning. Intelligence has to predict what the future of the environment may be like (Espejo and Gill, 1997, Hilder, 1995).

System 5: Policy

System 5 roles are to provide logical closure through policy making and policy transmission. This defines the identity of the System-In-Focus. It therefore, set purposes, values and direction for the System-In-Focus. This System also monitors the functions of Systems 3 and 4 (Espejo and Gill (1997, Hilder, 1995).

Elements in a Self-organising System

Self- organising systems have the following three elements: the operations, management and environment (Beer, 1995). These levels are shown in Figure 3.2.

Operation

This incorporates all elements which do things in a system. In this system, the inputs are transformed into outputs (Beer, 1995).

Management

Management in a system includes all the managerial activities that are needed for the system to operate. It controls all the doers/operations in the system. It ensures that the system survives and performs efficiently by ensuring that the relationships and interactions between the system's parts are maintained to achieve the objectives of the System-In-Focus (Beer, 1995).

Environment

The environment includes everything outside the System-In-Focus, but which has a relationship with the System-In-Focus (Beer, 1995).

Components of a Viable System

Viable systems compose of variety which gets increased and or decrease with the complexity of the System-In-Focus (Beer, 1995).

Variety in a System

Variety is a measure of the complexity management has to deal with in a system. It counts the number of possible states of a system. It is important that a self-organising system maintains balanced levels of variety if it is to operate effectively (Beer, 1995). Failure to balance variety between the system elements and between the system and the environment results in chaos in a system. Variety is underpinned by the principle of homeostasis from the science of cybernetics (Beer, 1995).

Variety Attenuators

A variety attenuator controls variety. It filters or attenuates variety. The environment has high variety, but management does not want to deal with aspects irrelevant to the System-In-Focus. The relevant aspects are retained and the irrelevant are filtered out. Variety is also amplified between the lower level and higher level systems e.g. in reporting processes (Beer, 1995).

Variety Amplifiers

Low variety input in a system is amplified to attain a balance. Management has low variety which is amplified between it and the operations and further amplified between operations and the environment (Beer, 1995). An example is a budget allocation by management which enables a variety of operations.

Analysing Systems Using VSM

Analysing systems using VSM enables an organisation to maintain a separate existence, be viable, adapt and survive in its constantly changing environment, while it maintains connectivity inside and outside the system (Beer, 1995). The model as depicted in Figure 3.2 is used to explore the design of systems to investigate whether they can be viable and carry out successfully the five functions of VSM viability (Beer, 1995). There are factors important to analysis of a viable system such as structural design of the system, the human and capital resources, monitoring, and variety present in the systems and communication channels.

However not all factors need be used to analyse the system. A researcher may use some aspects only, while systems are better analysed when they are in operation than when they are not (Hilder, 1995). Key informant's statements collected through a case study research strategy are important in informing the VSM analysis (Whittal, 2008).

3.8 Conclusion

This chapter has summarised theories and methodologies underlying research in cadastral systems. The case study strategy and social systems approaches are underpinned by critical realism as a philosophical approach to multimethodology. It is apparent from the discussion that these methodologies inform and focus each other. For instance, a narrative from case study research strategy informs systems (VSM and SSM) analysis. The case study research strategy and systems approaches to research contribute to knowledge and provides understanding of the case in question prior to analysis.

Chapter 4. The Land Administration Theory

4.1 Introduction

This chapter addresses the theoretical frameworks to research cadastral systems. The land management paradigm is proposed by Williamson *et al* (2010), as a suitable approach to understand land administration systems. This is developed to comply with good governance and the rights, restrictions and responsibilities (RRRs) frameworks, which are identified as best practices and important for effective cadastral system design.

4.2 The Theory of Land Management

This section presents theories underlying land management, including land policy and modern land administration systems.

4.2.1 Operating Concepts

Williamson *et al* (2010) state that there are currently few universally accepted definitions for the concepts in the field of land administration and cadastral systems, e.g. cadastre, cadastral mapping and land administration. This is because of the complex nature of these systems; the fact that they are dynamic and depend on the context within which they exist (Williamson *et al*, 2010). The following operating definitions are adopted:

Land Policy

Land Policy is "the framework for determining how land should be used and conserved in order to meet social and economic objectives" (UNECE, 2005: 99). As part of the national policy, land policy promotes the objectives linked to sustainable development such including the economic development, political stability and social justice (Enemark, 2005). Land administration offers support for the execution of land policy (Williamson *et al*, 2010).

Land Tenure and Land Tenure Systems

Land tenure is "the ways in which rights in land are held" (UNECE, 2005:31). The absolute owner of land in many countries is the State or Head of State. Two general types of tenure are freehold and leasehold. These are types of individual ownership and stimulate investments in land and underpin economic development, while insecure land tenure discourages foreign private investments, thus inhibiting economic development (UNECE, 2005). Many African

countries retain a complex dual tenure system established during a colonial period of occupation (UNECE, 2005). Typically, dual tenure regimes accommodate Western-style land parcel and tenure, alongside more traditional and communal styles of land holding (UNECE, 2005).

Freehold Land Tenure

Freehold is a type of tenure in which the owner of the land can do whatever he or she prefers with the land within the laws of a country, including alienation of rights through a deed of transfer (UNECE, 2005)**.** However, this is subject to many laws such as planning regulations applicable in a particular jurisdiction. In many instances, freehold ownership is not fixed since the State usually holds a right to attain the land or rights over such land in the interests of the public. Freehold tenure is the highest form of ownership and its duration is unclear (UNECE, 2005).

Leasehold Land Tenure

Leasehold implies that the freehold land owner (e.g. the State) has surrendered most of the rights in the land and transferred them through leasehold for a certain time period (e.g. 10, 90 or 99 years). The leaseholder can use the land for that time period and when it expires, the land returns to the freehold owner (Williamson *et al*, 2010).

Customary Land Tenure

Customary land tenure is the communal land right holding in accordance with customary laws, norms, and practices of a certain group of people. In customary tenure, land rights are accessed through tribal authorities and or chiefs (UNECE, 2005). This type of land holding allows strong exclusive residential rights for households, as well as communal rights to grazing land (may be seasonal) and access land. Rights of inheritance vary from country to country and tenure is generally long term although it is impossible to estimate. It also entails a flexible way of managing land relations and have, in many cases, proven to be better tailored to local conditions than centralised systems or ones inflicted from outside the region (UNECE, 2005). A customary tenure system is governed by both written and unwritten rules, administered by communal leaders and in most cases the major proof of ownership is active occupation or usage of a land parcel (UNECE, 2005).

Land Registration

Land registration is the formal recording of legally known land rights and it is typically an element of a cadastral system. A land register contains all legal documents regarding real property ownership (UNECE, 1996).

Cadastral Mapping and Surveying

A cadastral map is a map showing land parcel boundaries and land use forms such as settlements (UNECE, 2005). Cadastral surveying is the process of surveying and recording land parcel boundaries in support of a cadastral map and is also termed cadastral mapping (Williamson *et al*, 2010). It is undertaken in support of land registration systems. The process results in a cadastral survey plan that may be used to update a cadastral map (Williamson *et al*, 2010).

Cadastre as a Concept

The basic features of a cadastre are the land parcels and boundaries (UNECE, 2005). The cadastre is a kind of land information system that records land parcels consisting of a series of maps depicting the land parcel's size and location including a record of interests in land. People are of equal importance in cadastre as much as the maps (land parcels), technology and the law (Dale and McLaughlin, 1999). Cadastre includes the juridical cadastre, fiscal cadastre and multipurpose cadastre as well as the links between them (Williamson *et al*, 2010).

Juridical cadastre is "a register of ownership of land parcels" (UNECE, 2005: 96)

Fiscal cadastre is "a register of properties recording their value" (UNECE, 2005:96)

Multipurpose cadastre is "a register comprising many attributes of land parcels" (e.g. tenure, use, value, development) (UNECE, 2005:96).

Land Administration

Land administration is the process of managing land tenure, valuation, use and development, by either the government administration or private sector (Williamson *et al*, 2010). "Land administration is about land management" (Williamson *et al*, 2010:445).

Cadastral System or Land Administration System (LAS)

A cadastral system, which is sometimes referred to as a land administration system, is an entity which comprises all the sub-systems containing the processes of juridical, fiscal and multipurpose spatial information (UNECE, 2005). This is an infrastructure through which a country's land policy is implemented. The process of land administration (land tenure, value, use and development) which facilitates adequate distribution of RRRs in land are managed and delivered through this system. It is therefore, a land information system for a jurisdiction and its functions are related to the achievements of the countries sustainable development goals (UNECE, 2005, Williamson *et al*, 2010).

Juridical Cadastral Sub-System

The juridical cadastral sub-system portrays relationships between man and land. Land holding and registration of rights are emphasised in this type of cadastral system (Dale and McLaughlin, 1999). A well-functioning juridical cadastral sub-system should provide secure land rights, boost and monitor formal land markets, decrease land disputes, provide better conveyancing, security of credit, assist land reform and manage state land. It also supports the fiscal cadastre, development land control activities and the recording of land information (Dale and McLaughlin, 1999, UNECE, 2005).

Fiscal Cadastral Sub-System

The fiscal cadastral sub-system supports land administration and is based on the fact that land has economic value and is subject to valuation and taxation to benefit the common good (Dale and McLaughlin, 1999). The processes in a fiscal cadastral sub-system maximize revenue collection and promote land markets. This sub-system includes all elements comprising the inputs, structures, processes, management and outputs for property valuation and taxation, while also recognising the material or technical, personal and social aspects of the system (Whittal, 2008).

Multipurpose Cadastral Sub-Systems/LIS

A multipurpose cadastral sub-system is sometimes referred to as a Land Information System (LIS). The LIS facilitates the management of information relating to land and improvements. It underpins land administration (Williamson *et al*, 2010). LIS is therefore, a system which process, store and distribute land information. The components of the system involve; human resources, technical resources, processes together with land related data, to produce and convey land information for management purposes (Williamson *et al*, 2010).

Best Practices

"Is a set of practices or methodologies which is commonly and internationally believed to result in optimum performance" (Whittal, 2008:88). The current best practices in land administration systems involve the land management paradigm (LMP), good governance (GG), and the rights and restrictions and responsibilities (RRRs) frameworks (Williamson *et al*, 2010). Best practices are used in evaluation processes to measure performance of land administration systems (Whittal, 2008).

4.2.2 Land Management

Land management is the execution of land policy through a broad range of land policy mechanisms including land reform, land consolidation, land markets and land taxation (UNECE, 1996). These are implemented through both government and private initiatives. Essential policy decisions about the nature and degree of investments in the land are implemented. It also engages every day decisions made by land administrators and land information managers on operations (UNECE, 2005).

Various land management decisions have an effect on individual land parcels and land parcel owners have no control over such decisions (Williamson *et al*, 2005). For example, changes and improvements in land parcels involving subdivisions and consolidations may affect individual's land parcel boundaries (UNECE, 2005). However, decisions have to conform to policy, regulations and procedures stipulated by cadastral authorities and are relevant to land owners (UNECE, 2005).

Land management decisions may be regulated by different levels of government, depending on existing administrative structures and traditions within countries (UNECE, 2005). Government agencies must be consistent in the formulation and implementation of land

policy in order to facilitate integration and avoid conflicts (UNECE, 2005). Therefore, the systems of land management differ widely from country to country and depend on the judicial setting of the country (Williamson *et al*, 2005).

4.2.3 Land Policy and Cadastral Systems

Land policy influences the ways in which land parcels, property rights and transactions are regulated (UNECE, 2003). It also determines the processes of land administration such as land tenure, value, use and development (Williamson *et al*, 2010). Land policy plays a central role in the reform of cadastral systems and it is usually the first thing that needs to be addressed in creating an effective cadastral system. The need for high-level political support and recognition are important in cadastral systems reform (UNFIG, 1999, Williamson, 2001, Wallace, 2010, Williamson *et.al*, 2010).

Holistic approaches and an efficient legal framework are necessary to implement land policy and a sound and consistent land policy brings a bundle of benefits including greater efficiency and economic growth (UNECE, 2003). However, land policy cannot be effectively designed and motivated if governments do not understand how their land markets operate (Williamson *et al*, 2010). This is a challenge faced by developing countries in strive for socio-economic development (UNECE, 2003).

4.2.4 Modern Land Administration Systems

Modern land administration systems provide complete individual land parcel information (Enemark, 2005). This system facilitates the delivery of land rights, tenure security, effective land markets and credit. It also provides essential information concerning land development and environmental control processes, acting as a backbone for the people (UNECE, 2005, Enemark, 2005). Furthermore, modern LAS generate revenue from taxes on land transactions through ground rent collections, and through economic use. Land as economic good is demonstrated and its economic yield is improved by virtue of effective LAS (Williamson *et al*, 2010). Therefore, this system is important for the economic growth of any country.

4.2.5 Benefits of Good Land Administration Systems

Building a successful land administration system needs government support (UNECE, 2005, Williamson *et al*, 2010). It is expensive to create and maintain good land administration systems, although it produces lots of benefits (UNECE, 2005). The benefits are:

- Provision for land rights and security of tenure (juridical cadastre).
- Reduction in land boundaries disputes.
- Improvements in conveyancing to reduce the time and costs spent on land transfer.
- Development and stimulation of formal land markets e.g. through mortgages bonds.
- Regulation of the land markets which leads to improved land and improvements in valuation.
- Management of State owned land.
- Support for land reform.
- Support for fiscal cadastral sub-system (land and improvements valuation and taxation) for and revenue collection.
- Improvement in physical planning for land use and development control.
- Development of a multipurpose cadastre (UNECE, 2005).

4.3 Land Administration and Governance

Governance plays a central role in land administration projects. The land administration in any country is dependent on good governance and good governance is central to the delivery of appropriate, effective and efficient land administration (UNECE, 2005, Wallace, 2010, Enemark, 2010, Whittal, 2011).

4.3.1 The Role of Government in Land Administration Systems and their Reforms

Land administration systems operate within the existing State land policies and their management flows from the central government (UNECE, 2005). The role of the government is to create effective land administration policy which is consistent regardless of where (local or central) they are implemented (UNECE, 2005). Furthermore, the government is central to the reform of the system and it must continuously support LAS through effective policy transmission (Williamson *et al*, 2010). However, the systems continuing operations and maintenance may be financed through the revenues collected from land administration processes by the agency concerned. Performance indicators must also be placed and supervised both internally and externally (UNECE, 2005).

4.3.2 Good Governance in Land Administration

The manner in which land administration processes (land tenure, use, value and development) in a country are managed and administered to good effect is referred to as governance in LAS (Williamson *et al*, 2010). It includes decision making processes and effective policy implementation (Antonio, 2008, Samsudin, 2011). These can happen both in the formal and informal institutions of governance. Public participation in decision making is highly encouraged and government accountability and the adherence to the rule of law by society is emphasised (Williamson *et al*, 2010).

Good governance secures success, effectiveness and competency in land administration systems (UNECE, 2005). It ensures that work is accurate, timely and that enquiries are attended within a realistic period of time. Importantly, land administration processes are undertaken by skilled motivated personnel and that rewards are granted for good performance (Williamson *et al*, 2010). Ineffective professionals are disciplined or dismissed.

Furthermore, good governance in land administration increases security of tenure, reduces conflicts, decreases transaction costs and provides incentive for investments (FAO, 2007). These are envisaged to help reduce poverty, achieve economic growth and lead countries to sustainable development (FAO, 2007, Samsudin, 2011, Whittal, 2011).

On the other hand, weak government is associated with insecure tenure, high transaction costs, informal land transfers, informal property markets, reduced private sector investment and reduced state revenue (UNECE, 2005, FAO, 2007). These are then linked to poverty and low economic growth which are hindrance to sustainable development and economic growth (FAO, 2007). In fact, weak governance in land administration is said to be the reason why governments struggle and fail to achieve the goals of poverty reduction and sustainable development.

In addition, weak governance undermines efforts to reduce poverty and promote economic growth (Antonio, 2008), hence land administration system may be part of the problem of governance and therefore, need to be part of the solution (FAO, 2007). For instance, informal land transfer is linked to low income collection, whereby governments are unable to collect any income from such transactions (UNECE, 2005). In this case, land administration fails because of weak governance (FAO, 2007). Therefore, successful and efficient land

administration systems need effective governance to underpin sustainable development (Wallace, 2010).

4.3.3 Principles of Good Governance in Land Administration

Land administration is about good governance; the delivery of effective land administration depends on effective good governance (Williamson *et al*, 2008). There are many principles of good governance and most of them are inter-related (Samsudin, 2011). They include effectiveness, efficiency, transparency, security, clarity and simplicity, timeliness, fairness/equity, accessibility including cost and equity, sustainability, efficiency and effectiveness, completeness, and maintenance (Whittal, 2011).

4.4 Cadastral Systems Reform

Cadastral system reform is the process of designing and executing changes in an existing cadastral system in order to improve its operations for effectiveness and efficiency (Williamson, 2001). The assumption behind reform is that it leads to more secure land transactions and thus promote formal land markets (Williamson, 2001, Williamson *et al*, 2010).

4.4.1 Why Reform Cadastral Systems?

Williamson *et al* (2010) identifies a number of reasons for cadastral systems reform especially in developing countries. First, researchers and practitioners have the urge to explore new and advanced technologies. Most often, reforms include the use of information technology (IT) and information systems (IS). IT/IT is embedded in land administration processes for automation of processes and integration and this promotes e-governance. Secondly, it occurs when the existing system is ineffective and fails to satisfy users and or land administrators.

Another reason for cadastral systems reform is the need to improve the ease and security of transactions in land, as a means of fostering economic and social development. In many cases, current cadastral systems are not effective and efficient, hence there is high insecurity in tenure and high informal land markets. Insecure tenure (including customary tenure) cannot be used for collateral in banks. It also affects the functioning of formal land markets, hence reduced revenue expected from the operations of formal land registration system.

Lastly, existing systems are re-designed to keep up with the rapidly changing humankind-to-land relationship and needs of society (Williamson *et al*, 2010).

4.4.2 Land Administration Reform Processes

Land administration reform is concerned with processes and mainly institutions (Williamson *et al*, 2010). The processes used to deliver land administration need to be understood in country context first, before they are re-designed. In cases where these processes are well integrated and managed, the nature of institutions within which they function do not matter (Williamson *et al*, 2010).

The focus of many land administration researchers and practitioners has been on the need to understand and improve land administration systems in their contexts (Williamson *et al*, 2010). The design, building and managing of each land administration process is important (Williamson *et al*, 2010), hence cadastral systems reform must focus on the functioning of the cadastral processes (UNECE, 2005). The cadastral processes are to be integrated and well managed and these apply to both developing and developed countries. Reform of tenure processes often requires large projects involving the automation of a land title register or digitisation of hard copy map (UNECE, 2005, Williamson *et al*, 2010).

Furthermore, there is a need to establish the policy and institutional framework to capacitate local people to run the reformed tenure system (UNECE, 2005). Therefore, applying the theory of land administration to designing new systems, involves investigation of a suitable approach, and understanding the existing tenure processes used to organise land in a particular jurisdiction (Williamson *et al*, 2010). Reform projects should therefore, focus on the functioning of the existing cadastral systems as a basis for understanding and improving them. This is envisaged to result in more secure land tenure and simple land transactions processes, which ultimately translate into a better functioning land markets (Williamson, 2001)

The reformed system's maintenance is also important (Williamson *et al*, 2010). Tenure processes such as land transfers and subdivisions requires the systems to be updated. This requires maintenance of the processes after they are established and this is facilitated through capturing of post-registration changes in ownership and use patterns (Williamson *et al*, 2010).

4.4.3 Problems with Cadastral Systems Reforms

In developing countries, efforts to reform cadastral systems have not been successful, hence brought undesired results (Barry, 1999). The cadastral system's process such as land registration, can cause confusion and promote more uncertainty in a land tenure system than existed before (Barry, 1999). Problems are associated with land market improvements which may not surface at the level expected, as well as the formation of informal markets. These prevent the use of land as security for credit. Therefore, efforts to implement cadastral systems have repeatedly failed (Barry, 1999).

In addition, there are complex and interrelated aspects including culture, social, political, economic, legal and physical factors which may influence the users not to use the formal registration system (Barry, 1999). Informal land markets might replace the formal land market system and powerful people such as the wealthy may curb the cadastral system. Consequently, tenure security will decrease (Barry, 1999). These uncertainties affect the land value and the areas affected by this behaviour depreciate in value and may not be used as security for credit (Barry, 1999).

Furthermore, as land value is affected, the security of land for credit is affected and thus effect on land market (Williamson *et al*, 2010). They emphasise that it is critical to maintain and value all allied functions because failure to maintain the system will lead to it losing relevance and it then partly or totally be replaced by the informal systems (Williamson *et al*, 2010). For example, land owners would subdivide and transfer land outside of the formal system (Barry, 1999). These practices reduce revenue collected from land transaction processes.

These reforms are usually undertaken in developing countries and funded by international organisations such as World Bank and Millennium Challenge Corporation (UNECE, 2005). These organisations bring forth their expertise (as consultants) as package to the design of the reformed systems and the consultants are in most cases familiar with their own country's system which they want to implement in the recipient countries (Bogaerts and Zevenbergen, 2001, Whittal, 2008). In one country for example the system was found more expensive than the land itself (Bogaerts and Zevenbergen, 2001), while other systems causes disturbance of social life (distribution of public land to individual plots) (Rakai, 2005).

In addition, the over reliance of the reformed cadastral systems on IT/IS infrastructure, makes them more expensive to maintain (Whittal, 2008, Williamson *et al*, 2010). For example another country received an expensive computer system which could not be operated nor maintained by local people, as there is usually limited land administration knowledge in these countries (Bogaerts and Zevenbergen, 2001). LAS designs are expected to be more complex with the delivery of the sustainable development goals entrusted to them (Williamson *et al*, 2010). Total commitment to maintain these systems is critical for the sustainability of a secure tenure system (Williamson *et al*, 2010) as updating the systems reduces problems with undertaking land administration processes such as land transactions (Bogaerts and Zevenbergen, 2001).

4.5 The Land Management Paradigm (LMP)

The LMP is a conceptual framework with the aid of which land administration systems and their innovations are understood. The paradigm entails a set of principles, methods, techniques and practices which guides and shapes land management as a discipline. In this theory, land administration systems can be understood and re-designed for effectiveness and viability (Williamson *et al*, 2010). These principles and practices should relate to the four functions of land administration which are the land tenure, value, use and development functions. Figure 4.1 illustrates the LMP model as depicted in Enemark *et al* (2005). Williamson *et al* (2010) assert that the LMP is the cornerstone of land administration theory. In this theory, functions of land administration are of primary importance and are considered holistically.

Furthermore, the paradigm recognises that each country employs its own principles, techniques, tools and practices to deliver on land policy directives. Land administration in LMP is envisaged to be specific to each jurisdiction and the core ingredients, which are the cadastre and land parcel maps and registration system, remain the fundamental focus of a modern land administration system (Williamson *et al*, 2010).

The LMP holds good governance as a prerequisite to building land administration systems because the government is responsible for developing sound land policy. It therefore, recognises that government is responsible for building land administration infrastructure (Williamson *et al*, 2010).

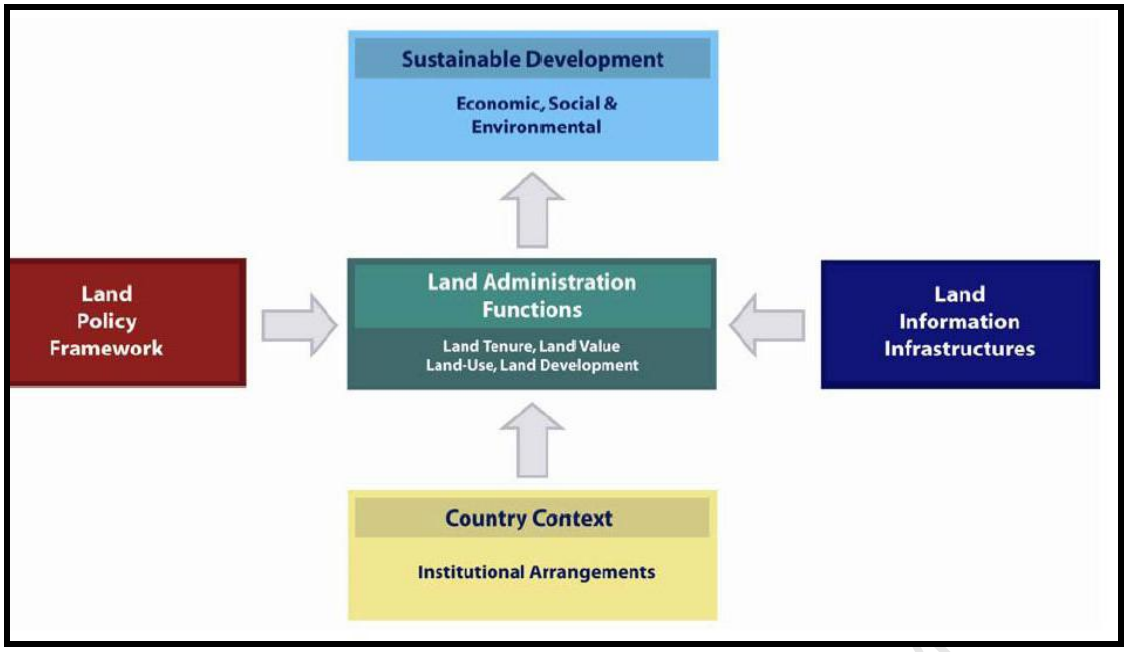

Figure 4.1 The land management paradigm (Enemark *et al*, 2005: 52)

4.5.1 Components of the Land Management Paradigm

LMP components are the four functions of land administration namely: land tenure, use, value and development (Williamson *et al*, 2010). The theory of modern land administration need that the LMP be implemented to guide the design, management and reform of cadastral systems which distributes land rights, restrictions and responsibilities (Williamson *et al*, 2010). It requires a holistic approach towards the land management, as a central asset in any country. LMP was developed from Dale and McLaughlin's (1988) model of land information management, although the LMP model is a new way to approach LAS holistically (Enemark, 2005, Williamson *et al*, 2010).

Furthermore, the model invites land administration systems designers to build systems which are capable of undertaking all land administration functions in an integrated manner (Williamson *et al*, 2010). The land value is affected by the economic, social and physical use of land and improvements as well as zoning and land use planning activities (Williamson *et al*, 2010). Future development is, however, determined by the land use planning and policies governing it (Williamson *et al*, 2010). Systems designed using LMP promote effective land markets (Williamson *et al*, 2010).

Land Tenure

Land tenure is the perception of security of the holding of rights in land. It may be formal, informal, or somewhere in between. The land tenure function is undertaken through land administration institutions and constitutes all the processes and institutions which deliver security of land tenure to land owners. These include transfer of land rights, surveying, recording, securing cadastral mapping, land parcel boundaries determination, creation of new land parcels, or alteration of some parcels, transfer of rights on land and improvements through sales, sub-lease or mortgage bonds as well as other formal and informal processes (Williamson *et al*, 2010). It also deals with land rights and parcel boundary disputes and adjudication of these. These processes may produce land holding titles such as leases. This is normally done in land tenure and cadastral surveying divisions of land administration institutions (Williamson *et al*, 2010).

Land Value

The land value function involves the valuation and taxation of land and improvements. The land administration institutions undertake these functions. It includes gathering information, calculation of land and improvements value, calculation and accumulating income by taxation. Land valuation and taxation disputes are also managed and resolved. This land value function, institutions and processes can be termed the fiscal cadastre (Williamson *et al*, 2010).

Land Use

The land use function is the planning and control of the ways in which land and improvements are used. These require adoption and enforcement of land use planning policies and rules at the national, regional and local levels. It also involves the management and adjudication of land use conflicts through the application of land use policies (Williamson *et al*, 2010).

Land Development

The land development function involves the implementation of land use planning or development proposals for building new urban neighbourhoods, new infrastructure and utilities. This function also manages change of use and improvements of existing urban or rural land use (Williamson *et al*, 2010). Planning regulations and development control

policies are implemented in this function and are facilitated by granting of building permits and land use permits, as well as the distribution of development costs.

4.5.2 The RRRs in Cadastral Systems

The cadastral system is seen as a distributer and manager of the information containing the rights, responsibilities and restrictions over a land parcel and its improvements (Bennett *et al*, 2005). Therefore, this system conceptualise the rights, restrictions and responsibilities related to people, policy and places (Williamson *et al*, 2010). The RRRs are delivered through the four functions of land administration which are the land tenure, value, use and development (Williamson *et al*, 2010). These therefore, need to be undertaken holistically. The RRRs are used to control the humankind activities on a land parcel and improvement (Bennett *et al*, 2006). The delivery of these is linked to achievement of sustainable development (Bennett *et al*, 2005). Sustainable development is achievable if land parcel rights, restrictions and responsibilities are best managed (Bennett *et al*, 2005).

The following interpretations of RRRs are adopted for the purposes of this research. These are governed by the existing laws in a jurisdiction.

Rights

The rights deal with the rights of ownership on a land parcel. This is basically provision of security of tenure through formal land registration in accordance to the laws governing tenure security (Enemark, 2007). The rights are delivered through the land tenure function of the land administration system (Williamson *et al*, 2010). The main rights are granted through freehold and long term leasehold (UNECE, 2005). These rights are normally best managed in developed countries and poorly managed in developing countries (Enemark, 2007). Rights deals with what the land parcel owner can do with the land parcel (Bennett *et al*, 2007).

Restrictions

Restrictions involve restrictions introduced through physical planning standards, land use and development control and other restrictions on activities on land, in line with existing legal framework (Enemark, 2007). These restrictions pertain to the land parcel owner (Enemark, 2007).

Responsibilities

Responsibilities of a land owner are largely relational and have to do with the interaction of the land owner and his/her neighbours, society and government institutions (Enemark, 2008). They can be active or passive. These responsibilities include such actions as maintaining property to avoid degradation of the environment and payment of taxes among many others and the collection of such taxes by the government (Enemark, 2008).

4.6 Conclusion

This chapter has presented a comprehensive view of concepts and theories underlying cadastral systems and their reforms and general land administration and management. In particular, the land management paradigm, good governance and RRRs as theoretical frameworks for cadastral systems are explained. Based on these theoretical frameworks, the description, understanding and analysis of the cadastral system in Lesotho are facilitated.

Chapter 5. Research Methodology

5.1 Introduction

This chapter introduces the methodologies, frameworks, tools and techniques preferred in conducting this research. Chapters 2, 3 and 4 form the bases for this discussion. The research questions and objectives (see Chapter 1) are addressed using a suite of methodologies and analytical frameworks identified suitable in this chapter. The primary objective of this chapter is to provide justifications and motivations behind the appropriateness to this particular research of the single case study research technique, social systems approaches, the land management paradigm and the framework for good governance in land administration.

These tools are identified as suitable in achieving the objectives of this research and are therefore, applied to observe and analyses the cadastral system and reform in Lesotho. Furthermore, the chapter demonstrates the research design and how the case of the cadastral system is conceptualised using the tools selected. It is important to note that single case study is used to investigate a case of land administration in its current and proposed forms. As such there is only one case, but two scenarios, a before (LSPP) and after (LAA) situation.

5.2 The Process of Choosing Methods and Tools

A number of theoretical frameworks and methodologies underlie the investigation of cadastral systems and their reforms. This thesis adopts critical realism (see Section 3.3) as a basis for mixed method approaches used in cadastral systems research. This chapter builds on the notion that cadastral systems compose of both natural and social aspects. This leads to the adoption of mixed method approaches and it facilitates a holistic investigation of the case of the cadastral system under study (Whittal, 2008).

The choice of methods of investigation and analysis in this thesis are central to holism (critical realism). For example, modern land administration systems theory (LMP) advocates holistic investigation and analysis of the existing cadastral systems to ensure that new designs are undertaken so as to minimise failures and ineffectiveness (Williamson *et al*, 2010). Likewise, the case study strategy is a holistic strategy in that it relies on multiple sources of evidence in investigations. Social systems approaches also inquire and analyse the systems in a holistic manner. They incorporate both hard engineering aspects such as hardware and software as well as soft aspects such as social, cultural and political aspects (Whittal, 2008).

These approaches are incorporated in this thesis in attempt to obtain triangulated results. The research process is demonstrated in Figure 5.1.

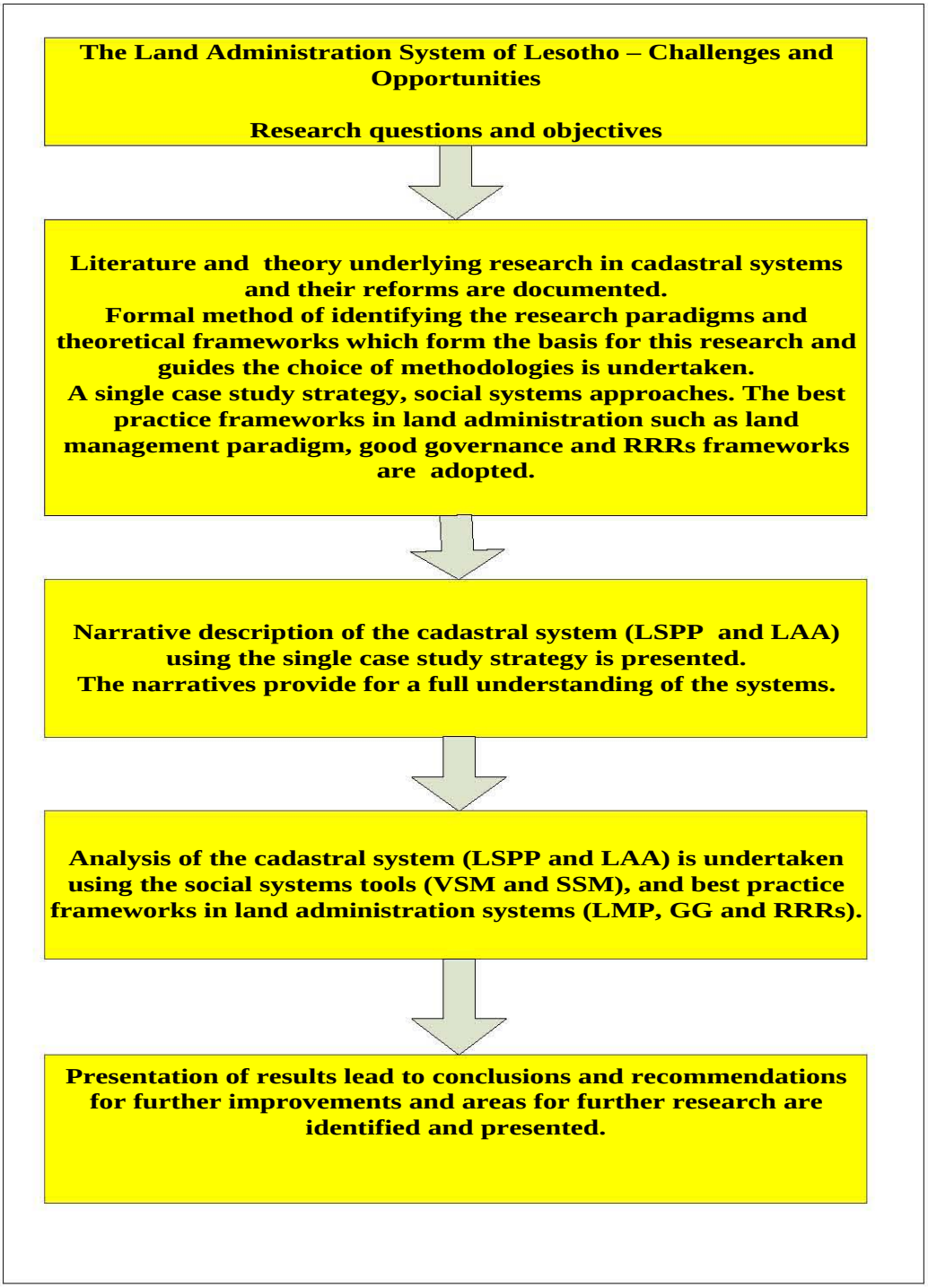

Figure 5.1The Lesotho land administration systems' case study research process

5.3 Suitability of Critical Realism

Chapter 2 discussed cadastral systems research which has successfully used critical realism (see Section 2.2.1), while Chapter 3 documented a detailed description of critical realism (see Section 3.3). Critical realism is appreciated in cadastral systems research because it allows the combination of both the natural and social realities and their underlying factors which influence their existence and whose effects can be observed (Whittal, 2008). Drawing from Chapter 3, critical realism provides a basis for a multimethodological approach (see Section 3.3); this is preferred over single methodologies because it allows for an exploration of hard and soft issues in a situation (Whittal, 2008). This is achieved through combining case study strategy, hard systems, soft systems methodology, viable system modelling and the land management paradigm.

Critical realism also allows triangulation of results (from different methods) to improve construct validity (Mingers, 2006) which is also common in case study research strategy (Yin, 2003).

5.4 Suitability of Multimethodology

The multimethodological approach adopted in this case study, is based on critical realism (see Chapter 3). Chapter 2 reflects similar research which has analysed the technical and social situations in cadastral systems and reforms at multimethodological level, using multimethodology successfully. Mingers' (2006) definition of multimethodology as documented in Chapter 3 (see Section 3.4) is used throughout the case study. This approach includes the use of case study research strategy, social systems approaches and modern land administration theory (LMP). These tools of investigation describe, model and analyse the land administration system (both LSPP and LAA) in Lesotho. The aim is to provide an in-depth understanding of the situation. This also forms a basis for guiding improvements of the land administration system as highlighted in the objectives of this thesis.

Whittal (2008) identified a suite of methodologies suitable for guiding and analysing the cadastral systems research. These include case study strategy, soft systems methodology and viable system modelling. This suite of methods and tools has been identified by Whittal (2008) based on their combined strengths. For example, she found that VSM is strong in

conceptualising organisational structures, processes and relationships, SSM strength is seen in its ability to address the personal, beliefs, and social aspects of the situation, and hard systems methodology strength is seen in its ability to analyse the material aspects of the system (Whittal, 2008). All these systems methodologies are underscored by case study strategy and a mix of them strengthens construct validity of cadastral systems research (Whittal, 2008). They also contribute knowledge and understanding of the cadastral system (Whittal, 2008). This research uses the same suite of mixed methods identified by Whittal (2008).

5.5 Suitability of Case Study Strategy

Case study strategy is favoured because it is an appropriate methodology to collect empirical data (Whittal, 2008) in such cases of cadastral system research. The case study is suitable to investigate complex situations which lack evident boundary between the case and its environments such as those found in cadastral systems (Yin, 2003) (see Chapter 2). In this case study, there are no definite boundaries between the case of the cadastral system and its environment, hence the inclusion of the environment of the case in the narratives as in Chapter 6 for the LSPP and Chapter 7 for the LAA and analysis of the cadastral system in Chapter 8 for LSPP and Chapter 9 for the LAA. In addition, the researcher favours this method because she is allowed to maintain holistic and important characteristics of actual life events in the cadastral system organisational and managerial processes (Denzin and Lincoln, 1998).

5.5.1 Motivation for Single Case Study

As opposed to multiple case studies, the author chooses the single case study strategy (see Section 3.5) because the cadastral system under study is deemed unique. Lesotho has unique physical, geographical, socio-economical, cultural and political settings (see Chapter 6), which distinguishes it from other countries in the world. The case is also unique in that it is currently undergoing a reform process from the former LSPP to the LAA.

This case study is an intrinsic single case study which aims at providing a rich description of the cadastral system (both LSPP and LAA) through a narrative (see Chapter 6 and Chapter 7) for understanding purposes only, rather than to build theory or, in the process, improve on the system as would be the case in action research. In addition, single case study is preferred for

rare cases. The case of the cadastral system in Lesotho is a rare case because it is undergoing a major process of change (reform from LSPP to LAA).

5.5.2 Data Collection in the Case Study of the Lesotho Cadastral Systems

Multiple sources of data documented in section 3.5.2 are used to collect empirical data in this research so as to ensure rigour. Interviews are limited to the key informants only (see section 3.5.2). Interviews with stakeholders and clients of the LSPP were not formally conducted as the researcher is also a participant in the LSPP system and has first-hand experience of the views of stakeholders and clients of the LSPP which are in harmony with well-documented stakeholder and client data reflected in case documentation. The LAA narrative, being a proposed system under implementation during the course of the study, is informed mostly by documentation and interviews are limited to key informants of the LSPP and the MCA consultants. This is because LAA was still recruiting its staff during the writing up of this thesis and the system as proposed rather than as executed, could only be analysed. Interview and documentary evidence was collected and reported over a time period of three years (2009 - 2011) which allowed for refinement of the data collection process and data saturation to be achieved (Yin, 2003).

In-depth Direct Interviews with Key Informants

In-depth open-ended interviews were directed specifically at key informants (see section 3.5.2.) is the preferred interview style in this case study because deep information about a system, even the most sensitive system, can be gained (Yin, 2003). Therefore, the interviewee's social and personal experience of the cadastral system was explored, while also providing general knowledge and a shared view of the case. This set of interviews was conducted during the initial stage (June 2009) of the research. Nineteen interviews were conducted with key informants. The interviews were unstructured in-depth interviews in which the key informants were prompted to discuss operational, structural, communications, management and other aspects related to the functioning of the LSPP and the proposed LAA. These interviews varied in length from 30 minutes to over an hour. Key informants were able to follow up with the researcher after these interviews should they wish to inform her of any other aspects not adequately covered in the face-to-face sessions. Field notes were produced as answers were provided.

Key Informants Described

The key informants in this research are people who the case can be well known and identified (Whittal, 2008). They are employees in LSPP both at Head Office and District Offices, the Deeds Registry Department and individuals involved in the land administration reform activity, including the consultant Project Implementation Unit (PIU). The PIU implements the policies, strategies, plans and functions of the LAA land management system in Lesotho. They are capable of providing deep insight into the case (Yin, 2003, Whittal, 2008).

The statements derived from the key informants in this particular study are referenced in such a way that the identity of the key informants is kept confidential (e.g. use of Key Informant Interviewee(s) A, B, C, D, etc). This is for confidentiality, protection and respect of human beings as sources of data in accord with the University of Cape Town (UCT) Code for Research Ethics (UCT, 2010). It is common knowledge who works in which division or department, hence it is ethical that the researcher uses symbols to give identity to the interviewees. However, field notes contain the details of the interviewees and are kept confidentially and are only accessible to the researcher, the supervisor and may be accessed by the Faculty of Engineering and Built Environment (EBE) UCT Research Committee on request.

Physical and Cultural Materials

These are other unique and important sources of evidence in this case study research (Yin, 2003). They include the materials, objects, and technological tools used in the study. They imply the types of survey equipment used, the computers, hardware and software used in the cadastral system.

Observations

Observations entail participant observation and direct observation as defined in Yin (2003). They both require the presence of the researcher in the system with the purpose of doing the actual processes and also observing every step of the functions performed in the system (Yin, 2003). For this particular research, the researcher (author) plays both the role of the participant and direct observer and a brief account of the researcher's status, which could have bearing on the research process, is explored in this section.

The researcher has been an employee of the current cadastral system under study since September 2004 till present. She maintains experience in different positions, different divisions and in different settings of the systems. Initially (2004 - 2005), she worked as Lands Officer at the Head Office where she gained land tenure operations experience. With land administration decentralisation, she transferred to start land tenure operations at the Thaba–Tseka District in 2006 where she joined the then Principal Technical Officer (Physical Planning Division), who after five years (2004 - 2009) of service resigned for greener pastures. In 2009, she was promoted to the position of Physical Planner in the Division of Physical Planning, and is still employed in this position today.

The researcher has extensive firsthand experience of the views and perceptions of the case and its context by the clients and stakeholders of the LSPP. Over years she has directly observed their reactions and frustrations with regard to the functioning of the land management systems in Lesotho. She therefore, did not conduct interviews with the clients of the system as their views are incorporated in documentation reports (e.g. Swedesurvey, 2006) and are corroborated by her (participant observer) evidence over time. To a certain extent, the researcher shares the same views as documented in these reports.

This background indicates that the experiences and contacts of the researcher may influence the research process as well as the results, but the bias of the researcher is geared towards assisting in the research process rather than detracting from it through the use of rigorous research design (Whittal, 2008).

Documentation

Documentation dominates over other sources of empirical data in this research and information derived from it is acknowledged in the case study narratives in Chapter 6 and Chapter 7. Earlier studies, such as those of (but not limited to) the Lesotho Government (Land Policy Review Commission, 2000), UN-Habitat (2008), Swedesurvey (2006) and Urban Institutes (2008) form the major data sources in this research. The Millennium Challenge Corporation (MCC), in particular, has, in preparation for the reform of the land administration system in Lesotho, conducted a study and compiled a baseline report for the status of the LSPP (Swede Survey Report of 2006) and produced the technical report on the establishment of an autonomous land administration system (Urban Institute Report of 2008). The information derived from these reports validates the data from key informants and the

participant observer's perspectives on the case. These facilitate triangulation of data and ensure rigour in research (Whittal, 2008).

5.5.3 Reporting the Case Study

The result of the case study is a lengthy report in the form of a case study narrative. For this research, two narratives are produced; the first one presents the current cadastral system, the LSPP (see Chapter 6), while the other narrative presents the newly established cadastral system, the LAA (see Chapter 7). The statements gathered from the key informants interviews, observations and documentation are compiled into a report to describe the case and facilitates a deep understanding of the case in a holistic manner.

Since the researcher has much experience of LSPP under conditions of complexity, it should be expected that the researcher's life experiences in LSPP, as well as her ontology and epistemology have bearing on the research process and reporting. The case study reports (narratives) are presented from a critical realist perspective which can accommodate both the natural and social aspects of the case study, and to view the case holistically (Whittal, 2008). In the process of converting case study data into the case study narrative, the author reflects information which has a bearing on the study's research questions. This can be a somewhat subjective process. Consequently, not everything about the case is reported and analysed. This is accommodated by the chosen paradigms and methodologies guiding this research (see Chapter 3).

5.5.4 Triangulation of Case Study Results

Qualitative triangulation of results (Denzin and Lincoln, 1998) is applied in this case study. They include data triangulation, methodological triangulation, theoretical and paradigm triangulation and discipline triangulation (see Section 3.5.5). Triangulation increases trustworthiness and validity of the results in a case study (Yin, 2003). Evidence from sources is corroborated with evidence from other sources and results from different tools of analysis corroborate each other which are a benefit of the mixed method approach.

5.5.5 Presenting the Case Study Results

The single case study narrative is undertaken simultaneously with data collection through explanation building demonstrated in the narratives. This facilitates answering of the why and how questions in Chapter 1, as in the framework of Yin (2003). Both the LSPP and LAA

narratives are produced. Data collected improves understanding of the system; hence knowledge about what further data is required. The narratives inform the analysis of the case in case study strategy. They also facilitate the processing of the single case study through systems tools as demonstrated in Chapter 8 and Chapter 9.

5.5.6 Analysing the Case Study Results

The analysis of the case study narratives is undertaken using the suite of tools and methods described in section 5.4 and are based on a critical realist theoretical framework. This contributes to holistic understanding of the problematic situation and of the interactions and relationships which exist within the cadastral system. The narratives may be analysed from different perspectives and may give similar or different results, depending on the particular tool of analysis used. The various tools are sensitive to different aspects of the case study. The results of the analysis in Chapter 8 and Chapter 9 are then triangulated to strengthen construct validity.

5.5.7 Generalisation of Case Study Results

Naturalistic generalisation is applicable to this case study. The main purpose of this research is to understand the land administration system in Lesotho, both in its present form (LSPP) and in its proposed form (LAA) as stated in section 5.1. Furthermore, this case study is also intrinsic. This means that it provides a description of the case in its contexts for understanding and knowledge only, therefore, the interest of the researcher is not to generalise the results, but to critically analyse the case. Moreover, the research also contributes to understanding of the case which could lead to improving the problem situation down the line. Drawing from section 5.5.1 this case study is also unique and critical and is classified as a single case study under the classification of Yin (2003). Yin (2003) motivates that generalisation with such cases is not the main aim of the research but rather that understanding of the case is, in itself, knowledge creation.

However, research on the Lesotho cadastral system also contains elements of analytical generalisation (see Sections 3.5.4 and 5.5.7), in that the case (LSPP and LAA scenarios) is analysed using systems theory and the LMP theoretical framework. Results of this analytical aspect contribute to the general understanding of the use of systems theory in cadastral systems research and in the applicability of LMP, good governance and RRRs frameworks in analysing cadastral systems. However, the conclusions from this research should not be

generalised to all cases without consideration of the results of other researchers testing both systems theory as a modelling tool and the LMP and alternative theories as a framework for cadastral system design in their context.

The narrative form of the case study report as in Chapter 6 and Chapter 7 allows any future researcher to use naturalistic generalisation to analyse the findings of the case and apply these findings to other cases with consideration of the case study similarities, differences, and contexts.

5.5.8 Observer Bias in this Research

Bias in this study is presented through the use of participant and direct observations. The role of the researcher as both the reporter and writer can pose a threat to rigour. The personal biography of the researcher, coupled with ontology and epistemology pose bias (Whittal, 2008). It is important to note that due to critical realism paradigm and methodologies used in this research (see Section 3.3) the researcher stands on a certain world view and is influenced by work experiences, perceptions and ontology.

5.5.9 Managing Observer Bias

In reporting the case study through the medium of the narrative and analysing the results, the researcher attempts to avoid subjectivity. This can be hard to achieve, especially with the involvement of the researcher as participant observer. However, the researcher is guided by the theoretical frameworks and tools of observation adopted in this research to ensure rigour while also aiming to attain the research objectives.

5.6 Social Systems Approaches in Lesotho's Cadastral Systems Case Study

Social systems approaches are used in this thesis as tools of analysis which facilitate understanding of the cadastral systems under study. Chapter 2 reflects the need to accommodate the technical, social, political, economical, cultural and organisational aspects of cadastral systems and argues for a holistic approach to the study of cadastral systems for full understanding of the system in its environment (see Chapter 2 and Chapter 3).

An insight into the nature and complexity of the cadastral system as a phenomenon is provided for by systems thinking (see Chapter 2 and Chapter 3). The systems approach includes the cadastral system environment in modelling the system. This includes the technical, social, cultural, beliefs, political and economic factors. It also incorporates physical

artifacts, institutions and their environments (Whittal, 2008). The application of hard systems methodology, soft systems methodology and viable systems modelling in combination is shown to be useful by Whittal (2008).

5.6.1 Suitability of Hard Systems Methodology (HSM)

Hard systems methodology is used in combination with other methodologies to understand the problem situation in a cadastral system (Whittal, 2008). Theory and literature (see Chapter 2 and Chapter 3) in cadastral systems research indicates that cadastral systems involve the tangible, hard materials such as computers and software (Whittal, 2008). The tools of hard systems thinking are suitable in this research because the cadastral system under study includes these aspects.

5.6.2 Suitability of Soft System Methodology (SSM)

SSM is deemed suitable for research in the cadastral domain as has been extensively argued in Chapter 2 and Chapter 3. SSM is a preferred methodology for understanding complex situations and as a diagnostic tool for ill-structured complex problems (Checkland, 1990). Cadastral systems have interrelated elements which make them complex. The cadastral system of Lesotho is no exception.

Modelling Using SSM Tools

SSM is a system thinking tool (Jacksons, 2003) and one of a suite of methodologies found suitable to guide and analyse cadastral systems research (Whittal, 2008). It analyses the historical, cultural, social and political situation of a cadastral system informed by the case narratives in Chapter 6 and Chapter 7.

In the context of this thesis, SSM is used to analyse and model the relationships and interactions within the Lesotho cadastral system, thereby identifying problematic, ill-structured and messy situations encountered in the system. The cadastral system in Lesotho, like any other cadastral system, involves the interactions between people who have different perspectives (Whittal, 2008). These role players perceive the world in accordance with their experience and beliefs. They make judgments about the system using standards and values which may not be shared by others (Checkland, 1990). SSM is useful in that it endeavours to capture the system from multiple perspectives.

Only a few tools of SSM are used to diagnose the cadastral system. The same tools were used to analyse the case of the fiscal cadastral system, GV 2000 project by Whittal (2008).

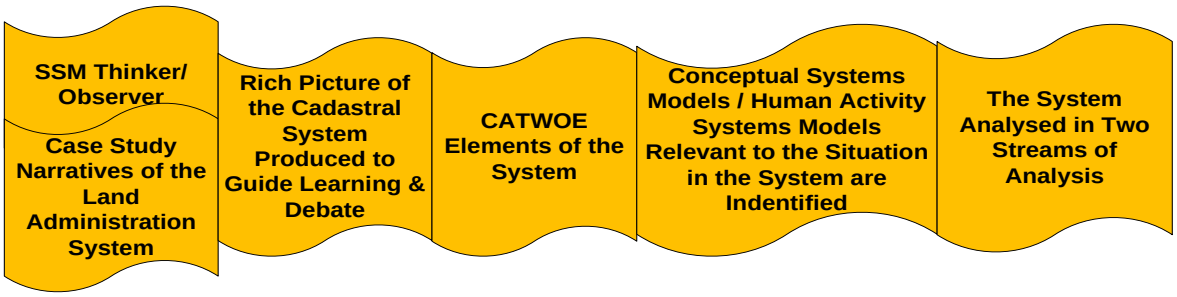

Figure 5.2 SSM process of inquiry about the land administration system under study (Mabesa, M. J. 2011)

Figure 5.2 illustrates the SSM process of inquiry about the situation in the cadastral system under study (LSPP and LAA). The initial stage of the research starts with the rich description of the cadastral system which takes place in Chapter 6 from which the rich picture of the problem situation is constructed. The CATWOE elements are also produced from the rich description and rich picture. A number of human activity systems models related to the problem situation in the cadastral system are identified. The identification of conceptual models pertinent to the problem situation facilitates the examination of the situation in the SSM two streams analysis (cultural based stream and logic based streams of analysis).

Since SSM models the social aspects of real world problems, Whittal (2008) suggests that it be used in combination with other methods including, but not limited to hard systems methods and viable systems modelling. This advice is followed in this study.

Rich Picture of the Cadastral System

The rich picture tool is used to represent the relationships and interactions which dominate the cadastral system through free drawings. The system and its environment are holistically represented through the rich picture development. The picture includes the land administration system's problems, the stakeholders, actors involved in the systems environment and the world views influencing the situation presented. The picture contributes to holistic understanding of the problem situation. However, the rich picture is the image of the situation in a cadastral system under study as seen and perceived by the observer

(Checkland, 1999). A rich picture can be drawn from multiple perspectives, but for this particular research, only one rich picture is used and that is the situation in LSPP, and not LAA, and based on the case study narrative evidence. This is because LAA is not yet in operation, hence the researcher does not know how it will interact with its customers and environment, and therefore, she cannot portray it in picture-like form.

The CATWOE Elements

The statements derived from the descriptions of the cadastral system in Lesotho as provided for in Chapter 6 and Chapter 7 facilitate the formation and development of the CATWOE elements of the cadastral system. These elements are used to form the conceptual human activity systems necessary for the analysis of the system in the context of SSM (Checkland, 1999).

The Relevant Human Activity System

The relevant human activity system models of the problem situation in the cadastral system in Lesotho are selected and produced based on a certain world view. They give an insight into the problem situation and facilitate the structuring of the situation expressed in the rich picture and, CATWOE elements. In this research, these systems models are developed based on a shared world view that cadastral system should facilitate the achievement of certain global agendas including sustainable development and poverty reduction. The human activity systems are conceptual systems chosen for their ability to facilitate understanding of the cadastral system from a social systems perspective.

Analysing Using the Two Streams of Analysis

The two streams analysis, described in section 3.7.2 and illustrated in Figure 3.1, facilitates the structuring and analysis of the complex socio-political situation in the system and its environment. Relevant human activity systems models developed are explored and compared to the real world situation as perceived by the observer. It further facilitates diagnosing of the systems operations based on the socio-political situation in Lesotho. These facilitate understanding of the LSPP current cadastral system as well as the newly-established LAA system. The gaps between the current situation and an ideal situation are revealed.

The Cultural Based Stream of Analysis

This stream structures and analyses the socio-economic and political aspects of the situation of the cadastral system in the context of Lesotho. It also comprises Checkland's (1999) analysis one, two and three namely: the intervention, social and political analysis of the situation in a cadastral system. Their results are compared to the real world situation and therefore, guide culturally desirable improvements (Checkland, 1990).

Analysis One, Two and Three

Chapter 3 explains theory underlying this type of analysis and it is used in this thesis to analyse the culturally based situation of the cadastral system as expressed in the narratives in Chapter 6 and Chapter 7. Drawing from Chapter 3, analysis one encompasses the interventions, analysis two holds the social aspects and analysis three reflects the political aspects of the system's context (see Section 3.7.2). However, for this research only analysis two and three are used. The researcher leaves out the intervention because she does not aim to intervene, but aims to facilitate learning and debate about the problem situation with an aim to understand the situation and, where possible, direct or guide a desired action that needs to be taken. The relevant systems models used are those selected in this section.

Logic Based Stream of Analysis

The logic based stream of analysis (see Figure 3.1) is guided by the thinking about of tasks and issues related or affected by the operations of the system as identified from the rich descriptions provided in Chapter 6 and Chapter 7 and constructed as conceptual systems models or relevant human activity systems. It provides learning, facilitates debate about the problem situation and provides a systematically desirable change in the cadastral system (Reid *et al*, 1999). It also defines action to be taken by the interventionist, which is rather beyond the scope of this thesis.

5.6.3 Suitability of Viable System Modelling (VSM)

VSM is appropriate for use in this thesis because the researcher recognises it is a powerful tool for understanding, analysing and diagnosing structural and operational deficiencies in the cadastral system in Lesotho. It is therefore, used to unfold and evaluate the designs of the LSPP and the LAA. Drawing from Beer's (1995) definition of VSM, the model is used to design the organisational structure of any viable or autonomous system, hence the researcher

finds the model helpful for the purposes of steering towards a more effective and viable cadastral system which is desirable for the stakeholders.

Modelling Using VSM

A complete generic viable system model diagram is depicted in Figure 3.2 of this thesis. This is used to model the structures and processes of the cadastral system. It facilitates analysis of the underlying structures, relationships, processes and management of the LSPP and the LAA, based on the principle of recursive systems (Beer, 1995). It also seeks to assess viability, effectiveness and self-organisation in the systems. The VSM models, especially the anti-oscillation charts, map necessary improvements to be made on the cadastral system so that it meets the criterion of viability.

Diagnosing and Analysing Using VSM

It is impossible to analyse the full autonomy of the LAA as it has not yet started functioning. In VSM, systems are better analysed when they are in operation as effectiveness and viability depend on a number of aspects such as policy transmission including resource flow, performance and communication channels (Hilder, 1995) (see Section 3.7.3). Some of these are only visible when the system is in operation. The evaluation and diagnosis of the LAA can only reflect its design and not its performance level, since it is not yet in operation.

For the current LSPP system a full VSM diagnosis is possible. Autonomy of the LSPP is evaluated based on design and performance (effectiveness vs. ineffectiveness). The VSM modelling of the LSPP and the LAA is derived from the case study narratives.

5.7 The Land Management Paradigm as Theoretical Framework

Modern land administration theory emphasises a holistic approach towards the design and implementation of land administration systems (LAS). The LMP is holistic, including four main functions of land administration: land tenure, value, use and development. The rights, restrictions and responsibilities (the RRRs) in land are managed by the land administration system, which should manage the humankind-to-land relationship and include all who have an interest in the land (see Section 4.5). A systems understanding of the processes and structures in land administration follows principles of holism and sees the whole system as containing properties which are more than the sum of the properties of parts of the system (Mabesa and Whittal, 2011).

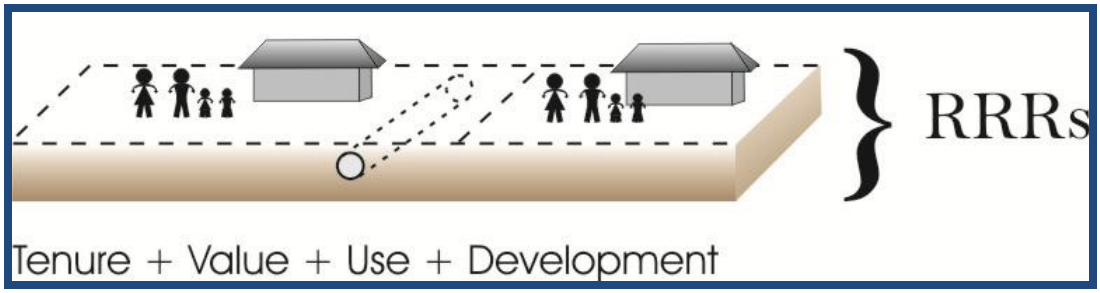

Figure 5.3 The RRRs in land management paradigm (Mabesa and Whittal, 2011)

5.7.1 Suitability of the LMP Framework for Analysing Case Study Results

The LMP framework is suitable in this study as an analytic tool because it is declared by Williamson *et al* (2010) to be a holistic framework appropriate for studying and designing cadastral systems. Figure 5.3 illustrates the Rights, Restrictions and Responsibilities (RRRs) of the LMP. Theory underlying this analytic tool is documented in Chapter 3. The holistic nature and neutrality of the framework towards the study and design of cadastral systems, which are anticipated to lead all countries to sustainable development regardless of their level of development, makes it favourable to the researcher.

The LMP is also favoured because it provides direction on how the system can be designed or improved so that it meets the broader land administration policy which is geared towards a goal of sustainable development (Williamson *et al*, 2010). This is in line with the poverty reduction strategy especially important in developing countries. Integrated operation of the core functions of land administration (land tenure, land value and land use) are promoted by the LMP. In addition, in line with multimethodology, the LMP advocates systems thinking and a systems approach.

5.7.2 Analysis Using the LMP

The current cadastral system (LSPP) as well as the newly-established (LAA) are critiqued against the LMP framework. The proximity of the LSPP and LAA to LMP design is therefore, investigated based on the ability of the system to deliver the RRR's and to perform the four functions of land administration effectively and in a holistic manner (see Section 4.5).

5.7.3 Suitability of Good Governance Framework for Analysis

Good governance principles are an accepted framework to use in evaluation of governance in land administration system (FAO, 2007). Although the good governance indicators are many and integrated (see Section 4.3.2 and 4.3.3), this thesis adopts some of the principles of good governance listed in Whittal (2011). Therefore, the cadastral system in Lesotho (LSPP and LAA) is analysed based on Whittal's (2011) interpretation of the principles of good governance in a land administration system. This evaluates the land administration system's performance against principles of good governance, and also contributes to in-depth understanding of the land administration system from the perspective of good governance.

5.7.4 Suitability of RRRs Framework for Analysis

The management and delivery of the RRRs in accordance with the LMPs will be investigated and analysed. The LSPP is assessed as to whether it adequately facilitates the RRRs (see Section 4.5.2).

In the context of this thesis, the RRRs are conceptualised as those relating to the land parcel and property rights, restrictions and responsibilities. A cadastral system is a land information system which should contain up-to-date records of information about the land parcel (extent, tenure, control, value, improvement) including rights, restrictions and responsibilities (UNECE, 2005).

5.8 Conclusion

This chapter has justified the choice of mixed methods approaches (multimethodology) in this research and has further explained why and how the mixed methods are used to study and analyse the land administration systems of the LSPP and the LAA. The ultimate aim is an in-depth understanding of the systems. The use of these methods in combination strengthens rigour in the research through methodological triangulation.

Chapter 6. Narrative Description of the Current Land Administration System (LSPP) in Lesotho

6.1 Introduction

This chapter presents the narrative description of the phenomenon of the current land administration system, the LSPP in its context from multiple perspectives. Identification of methodologies for such an investigation has been dealt with in earlier chapters. Therefore, a single case study strategy facilitates this description. The narrative presents the geographical context of the case, the background of the land tenure system in Lesotho and a detailed description of the LSPP including key processes and challenges from multiple perspectives.

6.2 Geographical Context of the Land Administration System

A case of a cadastral system is best understood in its physical, social, economic, political and organisational contexts. This section describes these contexts to facilitate understanding of the setting of the cadastral system in Lesotho.

6.2.1 The Physical Context of the Case

The LSPP is found in Lesotho. Lesotho is a country located in Southern Africa and land locked by South Africa as shown in Figure 6.1. The beautiful "Mountain Kingdom" is found between 29º to 30º South and 28º to 30º East (UN-Habitat, 2005). It is small in size with the total area of 30,355 square kilometres and its population is between 1.8 million and 2 million (Lesotho Government, 2007). Most of its area comprises the highlands with plateaus, hills and mountains to the East and the lower lands to the west. Thabana – Ntlenyana is the highest peak with the height of 3482 meters (Lesotho Government, 2006). This country is divided into ten administrative Districts (see Figure 6.1) each with its own town. Maseru is the capital town (Lesotho Government, 2000).

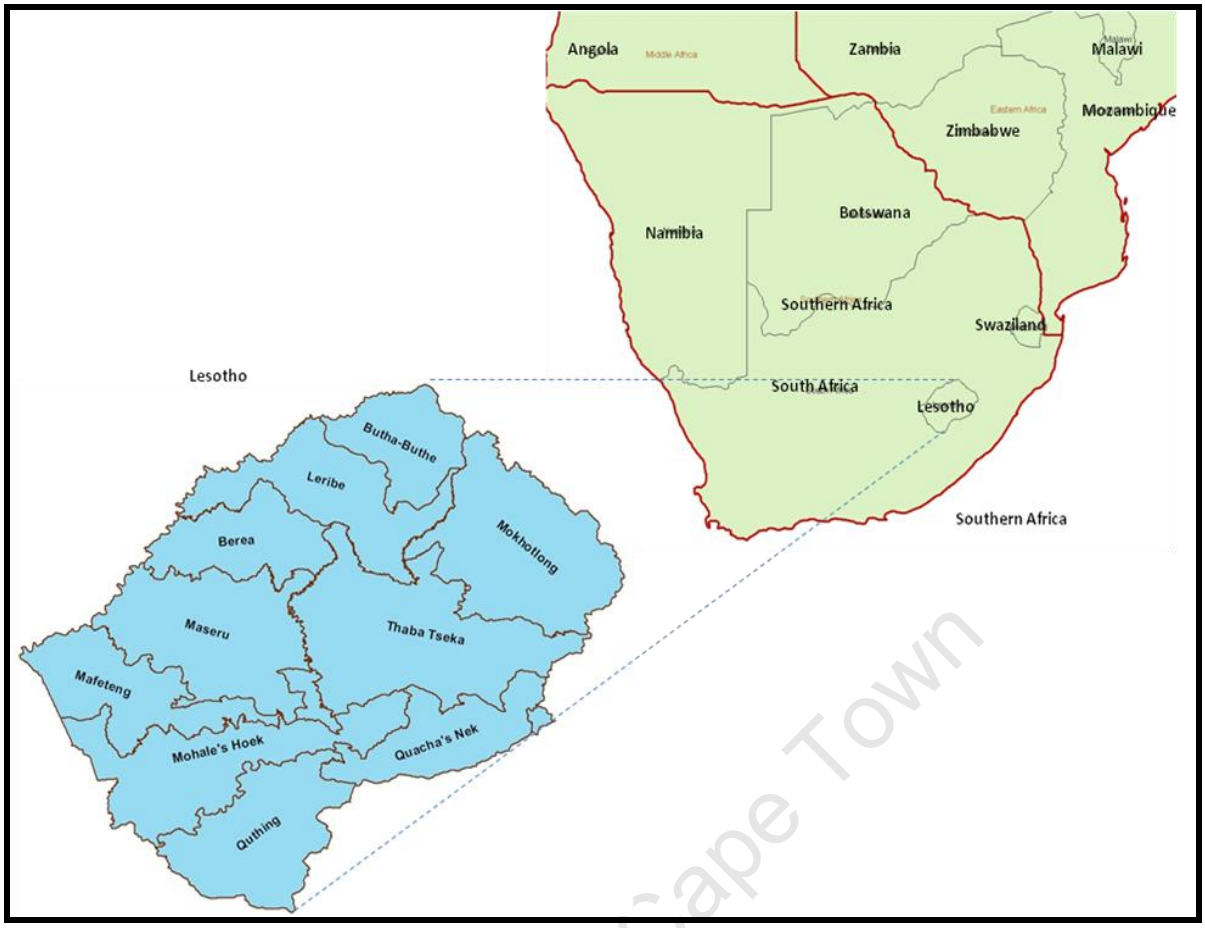

Figure 6.1 Map of Lesotho showing all Districts (ESRI Data and Maps, 2006)

Pressure of Urbanisation on the Periphery of Urban Land

There is rapid and uncontrolled urbanisation in all towns of Lesotho especially in the peri-urban areas. These areas are mainly agricultural land (Lesotho Government, 2000). This is caused by many factors including a need for better life opportunities provided by urban areas. Although the majority of Basotho (70%) stay in rural areas, migration has caused population pressure on urban peripheries (Lesotho Government, 2000, Un-Habitat, 2005).

The definition of what is urban in Lesotho is blurred, as every part of Maseru for example, falls under its rural Chief (UN-Habitat, 2005). Therefore, implementation of laws which control land acquisition and development, such as the Land Act of 1979 and Town and Country Planning Act of 1980 has been difficult (Lesotho Government, 2000). Not only has this affected control of development, but has also affected formal land registration (lease process) as it is not clear which title is correct and which land allocation authority is

legitimately authorised to grant the land title for such jurisdictions (Lesotho Government, 2000, UN-Habitat, 2005).

Furthermore, informal land acquisition in urban peripheries resulted in many unplanned settlements. Many households in urban Maseru (70% - 90%) have acquired land through bypassing of formal land acquisitions (Lesotho, Government, 2000, UN-Habitat, 2005). Although the majority occupies land informally, it is neither of the form of slums or shacks (UN-Habitat, 2005). However, the meaning of formality and informality is not clear because the majority of urban residential land has been, and is still, obtained through informal procedures (UN-Habitat, 2005). These areas suffer lack of services including proper roads, streets and sewage lines. They are thus unattractive to investors in property development (UN-Habitat, 2005).

6.2.2 Government and Legislative Context

Lesotho is a Kingdom headed by King Letsie III who is the Constitutional Monarch, while the Prime Minister is Dr Pakalitha Mosisili. The legislative power is vested in the two Houses of Parliament which are the Senate and the National Assembly. The Senate is made up of the 22 Principal Chiefs and 11 Senators who are advisors of the State Council. The National Assembly is made up of 120 elected representatives of the political parties called the Members of Parliament (MPs). Legislation is initiated outside Parliament but is passed by Parliament (UN-Habitat, 2005).

6.2.3 Socio-Economic Context of Lesotho

Lesotho is declared a poverty stricken country with low economic activity (Lesotho Government, 2000, MCC, 2008). This has led to its engagement in poverty reduction strategies supported by international organisations such as the International Monitory Fund (IMF) and the Millennium Challenge Corporation (MCC) (Lesotho Government, 2007, UN-Habitat, 2005). For instance, half of the population lives on less than $1 a day (Lesotho Government, 2007). The rural Basotho survive on subsistence farming and do not usually use financial services such as banks. Consequently, this way of survival does not add value to the government's weak revenue stream (UN-Habitat, 2005).

Furthermore, there are high unemployment rates in the country, caused mainly by retrenchment from South African mines and lack of capacity by the Government of Lesotho (GoL) to absorb the work-force (Lesotho Government, 2006). Low levels of private sector

activities (low economic activity) also increase unemployment rates in this country (Lesotho Government, 2006).

Overall, the socio-economic context in which the land management systems in Lesotho operate is very poor.

6.2.4 The Organisational Context of the Case

Many organisations in Lesotho are involved in land administration. Therefore, the LSPP is not an end in itself in land administration processes. Other departments which fall under the management of the Ministry of Local Government and Chieftainship (MOLG) also touch on land administration processes (Swedesurvey, 2006). Figure 6.2 illustrates the organisational chart of these organisations. Their operations directly and indirectly affect operations of the LSPP in its mandate to manage and administer land in Lesotho. These departments include the Deeds Registry, Maseru City Council (MCC), District Councils (DC), Community Councils (CC), District Administrations (DA), Lesotho Housing and Land Development Corporation (LHLDC) and Chieftainship (Key Informants Interviewees A, B, D, G, H, I and N, 2009).

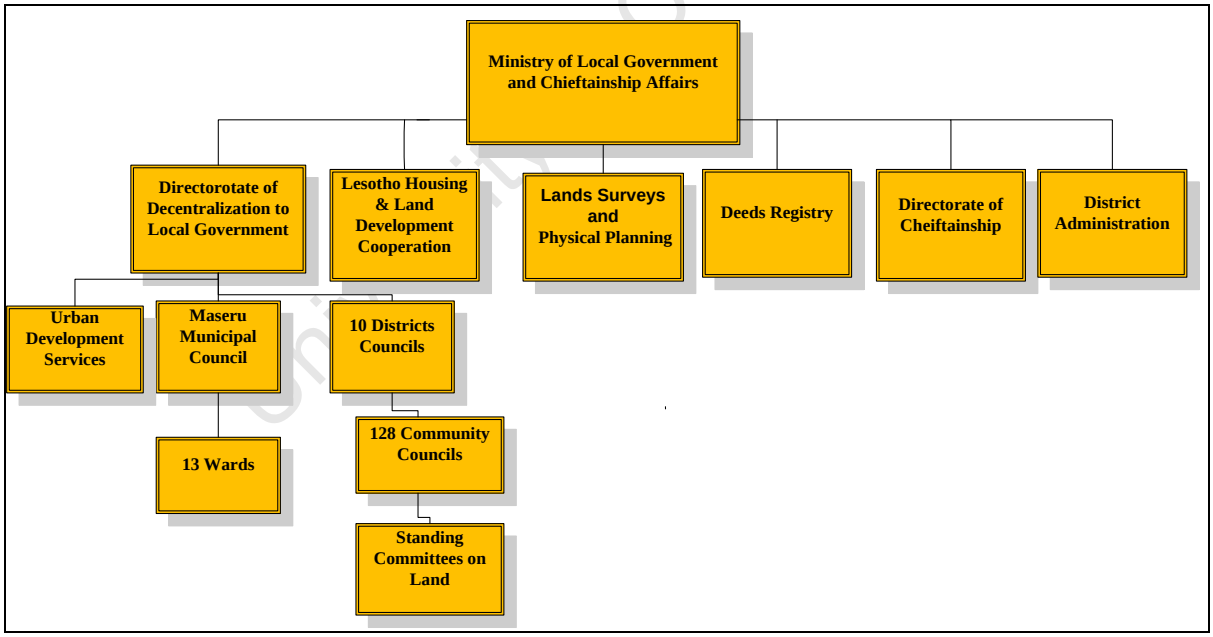

Figure 6.2 Organisations involved in land administration in Lesotho (Swedesurvey, 2006:6)

Maseru City Council

The Maseru City Council (MCC) is the only municipal council in the country created under the Urban Government Act of 1983 (UN-Habitat, 2005). This is a small organisation and it is under the management of the MOLG.

The MCC undertakes many functions including land administration functions. It has the Urban Land Committee on which the LSPP has one to two representatives depending on the capacity of the Office. This Committee is involved in urban land allocation and also deals with lease preparation for both residential and commercial use. The Council's other land administration functions include the title verification as parts of the lease process and the inheritance process. It also undertakes processes of development control and physical planning in accordance with the Town and Country Planning Act of 1980 (UN-Habitat, 2005).

However, MCC lacks resources to undertake its land administration processes. Due to shortage of capacity, the Council depends largely on the LSPP regarding planning and development control (Swedesurvey, 2006).

As of the Local Government Act of 1997, the MOLG established 128 Local Government Community Councils (CCs). These are administered by their respective District Councils who directly report to the MOLG. These Councils, like the MCC, are also expected to carry out similar land administration functions under the training and support of the LSPP's staff from Head Office and District levels (Swedesurvey, 2006). But, this has not taken place (Key Informants Interviewees A, C, D and F, 2009). However, their most important tasks are allocating land and managing communal land on behalf of their respective communities (Swedesurvey, 2006).

Community Councils (CC) face challenges when performing their land administration functions. They run short of capital and human resources. Poor capacity of the CCs, results in delay of land administration processes especially those which demand the engagement of Urban Land Committees. Such processes include title verification and inheritance. Delays cause ineffectiveness of the CCs. Furthermore, majority of the CC members are not educated enough to understand the land administration processes such as planning. It is also hard for them to understand the need for planning (Key Informants Interviewees N and O, 2009). Therefore, such processes are reportedly slow and difficult to implement (Key Informants

Interviewees A, B, C, F, G, H and I, 2009, Swedesurvey, 2006). It can be argued that these impact negatively on the LSPP operational processes, making it inefficient.

The Deeds Registry

The Deeds Registry is a small organisation headed by the Deeds Registrar under the administration of MOLG. The lease and land transaction processes prepared by the LSPP are registered in this Department. It also registers partnership agreements and anti-nuptial contacts (Key Informants P, Q and R, 2009, Swedesurvey, 2006).

However, upon a land transaction (transfers/mortgage), all subsequent registrations of dealings in leases are registered as deeds which are endorsed on each of the three copies of the original leases, i.e. the copy belongs to the lessee, the Commissioner's copy and the copy in the Deeds Registry (Key Informants Interviewees P, Q, and R, 2009, Swedesurvey, 2006). Registrations are made in books. Ledgers are used and no computerisation has taken place. All leases are archived in lease number order and deeds registration number order. On availability of complete and correct information in the lease or deed, the transfer/mortgage is registered within a few days. The volume of registrations is not high; there are less than 1000 registrations per year. In 2006, the total number of registered leases was around 10 000 (Swedesurvey, 2006).

The Deeds Registry Department faces challenges in operations. The Key Informants have shown concern over the fragmented lines of reporting within the MOLG management (Key Informants P, Q and R, 2009). There is little coordination between the Deeds Registry and the LSPP. The Deeds Registrar reports directly to the Principal Secretary, rather than to the Commissioner of Lands. Under the existing legislation, the Minister is personally responsible for issuance of consents to transfers of interests in land, mortgage consents exceeding five hundred thousand Maloti (M500, 000.00) (Maloti is equivalent to Rands / M1.00 = R1.00) and some allocations of land. This adds to the already lengthy processes and hence delays in delivery of the products of land administration processes (Key Informant Interviewees P, Q and R, 2009, Swedesurvey, 2006).

6.3 The Background of Land Tenure in Lesotho

Land in Lesotho was traditionally governed by customary law whose roots are reflected in the Laws of Lerotholi (UN-Habitat, 2005). The Chief was the custodian of land for all Basotho people; it did not belong to individuals, hence could neither be bought nor sold (UN-Habitat,

2005). Table 6.1 depicts the land tenure history of Lesotho since 1967 (post-independence) (UN-Habitat, 2005).

Under customary law, no documentation existed as a form of security for land holding. Land rights were socially acquired. However, the 1973 land reform introduced a form of land title called the Form C as under the customary land tenure system. This was facilitated through the passing of Land Act No 20 of 1973 (UN-Habitat, 2005). This type of allocation followed certain procedures. Upon allocation, the Chief was to issue a Form C and keep a register of the allocation as well as the copy of the issued title.

In 1979, the land reform was undertaken to reduce corrupt practices among the Chiefs; they were producing fraudulent Form C and double allocation of land parcels was a prominent dispute (UN-Habitat, 2005). Hence, the Land Act No 17 of 1979 repealed the Land Act of 1973 (Lesotho Government, 2000), and abolished the Form C by introducing title certificates named, Form C1, Form C2, Form CC2 and Form C3 in replacement of the Form C (see Table 6.1) (UN-Habitat, 2005). However, the Form C was only abolished in theory; in practice it is still, issued. It is then backdated to suit the times when it was legitimate. These title certificates, including the Form C and title deed (see Table 6.1), were to be converted into the lease brought by the Land Act of 1979 (UN-Habitat, 2005).

Tenure Period	Type of Tenure	Type of Title Used	Type of Land Use	Location
1967 (Post Independence)	Customary	None	Residential	Rural
	Communal	None	Agricultural	Rural
	State Owned	None	Official/ Public	Urban
1973 - 1979	Customary	Form C	Residential	Rural
	Communal	None	Agricultural	Rural
	State Owned	None	Official	Urban
1979 - Present	Customary	Form CC2	Residential	Rural
		Form C2	Commercial	Rural
		Form C1	Agricultural	Rural
	Modern Non Customary- Leasehold	Lease Form C3 is a Registrable Title	Residential	Urban
			Agricultural	Urban
			Commercial	Urban
	Customary	License	Transitional Land Uses	Rural Peri-Urban
	State Owned	Certificate of User	Official/ Public	Urban

Table 6.1 Summary of the history of land tenure types in Lesotho (UN-Habitat, 2005: 39)

6.3.1 Land Acquisition in Lesotho

Lesotho has dual land tenure systems; they are customary law which introduced customary land and Roman Dutch Law (UN-Habitat, 2005) which came with leasehold tenure systems. Both systems provide tenure security to the Basotho people as shown in Table 6.1. Each system has formal procedures that need to be followed in land acquisition. Customary land tenure (Laws of Lerotholi) and leasehold tenure (Land Act of 1979) are equal in status in the courts of laws. Both informal and formal land holdings are legitimate in the courts of laws (Lesotho Government, 2000).

However, customary tenure systems are no longer favoured globally including Lesotho due to a need to respond to global agendas including sustainable development goals. Sustainable development is thought to require formal land registration in replacement of customary tenure to enable formal land markets which boost economic growth (UN-Habitat, 2005).

Informal land acquisition is a major land holding in Lesotho, as many as 70-90% of land owners, particularly in Maseru, have obtained land through informal means. This is evidenced by existence of massive informal settlements in Maseru (UN-Habitat, 2005). The encroachment of settlements into agricultural land has left the government with no choice but to declare such areas (the peripherals of Maseru including Khubetsoana, Matala and Tsolo) as the urban areas. This is a result of informal allocation of land by the field owners along the urban peripheries. In addition, informal land acquisition is a country problem as it took place both in rural and urban areas of Lesotho. No urban area is immune to this type of land acquisition and not even the youngest town Thaba-Tseka (declared in 1980) has managed to survive this infection (Key Informants Interviewees O, M and N, 2009).

The reader is spared from details concerning the deeper consequences of the unplanned settlements, although it is highlighted that those areas suffer from lack of services including proper roads, streets, water and electricity supply. These discourage the functioning of land markets; hence impact negatively on economic growth (Key Informants Interviewees M, N and O, 2009).

6.3.2 Land Holding in Lesotho

The historical presentation of land tenure development in the country, adapted from UN-Habitat (2005) is presented in Table 6.1. As mentioned in this section, Lesotho has a dual tenure system: customary and leasehold. Both systems are interdependent and equal in the eyes of the law and courts (UN-Habitat, 2005). They are, however, unequal in benefits. Both land tenure systems are based on the Roman Dutch Law (UN-Habitat, 2005). The majority of land is held under customary tenure systems and this is mostly in rural areas where majority of the people live (UN-Habitat, 2005).

Women have for a long time been minors under customary law (Lesotho Government, 2000, UN-Habitat, 2005. They were discriminated and denied access to landholding and land services. They could neither be allocated land, inherit land nor make decisions regarding the use of land (UN-Habitat, 2005). However, this changed largely with the Legal Capacity of

Married Persons of 2006. Although, it has changed, unequal distribution of land profound, most land is held by men. This leaves women disadvantaged, hence their participation in land related economic activities remain low.

The Customary Land Tenure System

Table 6.1 indicates and that the majority of land holding in Lesotho is in customary form of tenure. Section 6.3 provides background to this type of tenure system. The Form C has been, and is still, secure land title as it is accepted in courts of laws (UH-Habitat, 2005).

However, customary land tenure systems are argued to be impediments to Lesotho's economic development, hence do not meet the socio-economic changing needs of the Basotho people (Swedesurvey, 2006). Even so, the traditional customs remain part of Basotho culture regardless of the level of education and adopted western life style (UN-Habitat, 2005).

The Leasehold Land Tenure System

The Land Act of 1979 introduced the leasehold tenure system. This tenure system is intended to modernise the customary tenure systems to formal systems (through a lease document) to increase security of tenure (Lesotho Government, 2000). This form of land holding applies to both rural and urban areas. It provides security of tenure which gives lease holders opportunities to use land as collateral in banks through the mortgage bonds process (Lesotho Government, 2000).

Leases differ in type and duration. Residential leases are for a period of 90 years, commercial leases last for 60 years, while industrial leases extend for a period of 30 years. The agricultural lease can be a 10 to 90 year term.

6.4 Background of the Lands Surveys and Physical Planning

The LSPP was established in 1974 (Lesotho Government, 2000). The overall goal of this organisation is to administer and manage land in Lesotho by formalising land registration through the leasehold tenure system (UN-Habitat, 2005). This is achieved through a number of laws but mainly the Land Act, No 17 of 1979. It delivers its land administration functions through its four Divisions. They are Land Tenure (including Valuation), Survey, Physical Planning and Land Use Planning Divisions. These Divisions are described in details in section 6.5.

6.4.1 The LSPP Current Legal Framework

The process of land management discussed in this chapter is guided by various laws and the narrative reflects upon these. The LSPP operates through the following legal framework: the Constitution of 1993, Land Act of 1979, Land Regulations of 1980, Deeds Registry Act of 1967, Deeds Registry Regulations of 1967, Transfer Duty Act of 1966, Stamp Duty Act of 1972, Land Survey Act of 1980, Town and Country Planning Act of 1980, Valuation and Rating Act, Local Government Act of 1997 and Sesotho Customary Law (Swedesurvey, 2006).

6.4.2 The LSPP Described

The LSPP is a bureaucratically governed organisation. It is governed under the Ministry of Local Government and Chieftainship Affairs. The Commissioner of Lands (CoL) heads the LSPP. He/she is responsible to the Minister of MOLG and the Principal Secretary (PS) to the MOLG. The LSPP Head Office operates from the capital town, Maseru. With decentralisation, some of its functions are found in ten Districts of Lesotho. The LSPP has four functional Divisions as mentioned earlier in this section. The Heads of Divisions are the Chief Lands Officer (CLO), Chief Surveyor (CS), Chief Physical Planner (CPP) and Chief Land Use Planner (CLUP) respectively (Swedesurvey, 2006, Key Informants Interviewees A, B and C, 2009).

6.4.3 The Organisation Structure of the LSPP

The LSPP structure of line management is reflected in a standard organisational in Figure 6.3). This chart depicts the LSPP both at Head Office and decentralised in ten Districts; this is evidenced by the reflection of the District Council Secretary and District Administrator dual line management in the chart.

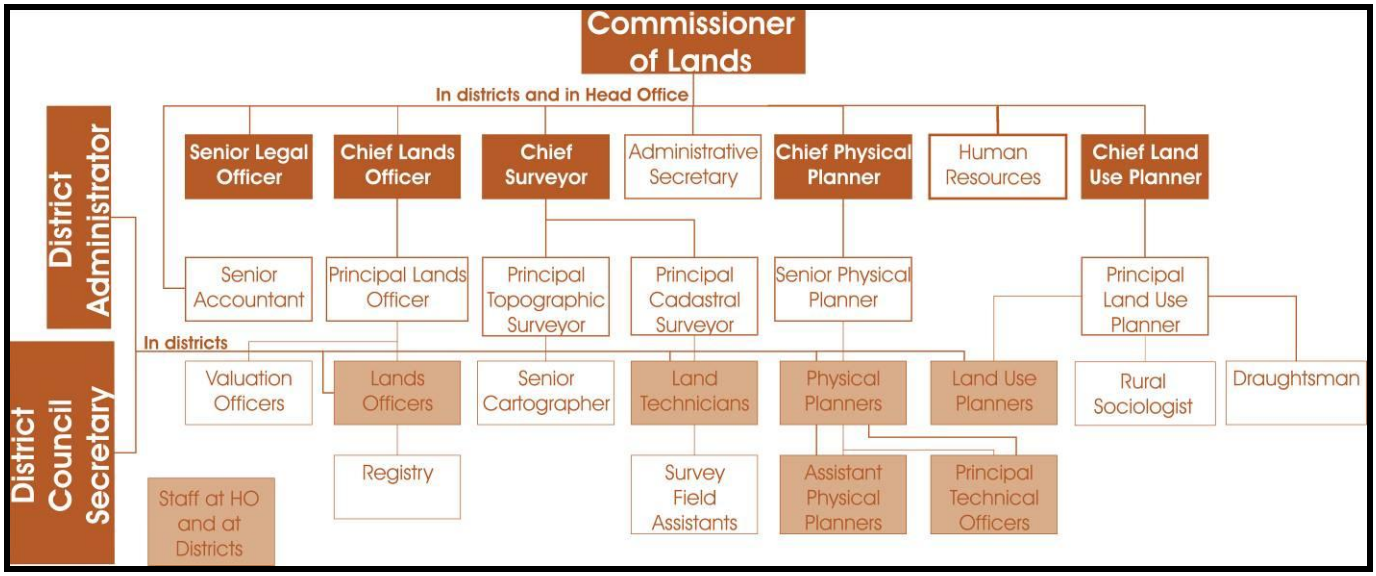

Figure 6.3 LSPP organisational chart (Mabesa and Whittal, 2011).

The LSPP at Head Office

The LSPP Head Office is situated some distance from MOLG Head Office. Only three of the LSPP Divisions (Land Tenure, Survey and Physical Planning) are nested inside the LSPP Head Office building, while the Land Use Planning Division is located in another distant building. The Commissioner of Lands Office is based at Head Office although he/she heads both Head Office and District Office.

The LSPP at District Level

The government of Lesotho decentralised LSPP (see Section 6.4.2) to promote local government, and serve the rural people better. This was also done to encourage increases in the number of people who use the formal land registration services. The aim was to promote secure tenure and boost economic growth through the land market (Swedesurvey, 2006).

At Districts, the LSPP Offices are located in urban areas either separate from, or within the Offices of the District Administrator (DA) or the District Councils Secretary (DCS) or both. One typical example of such a placement is the LSPP Office at Thaba-Tseka. This Office is embedded within the two separate DA and DCS buildings. The operations of Land Tenure and Physical Planning (undertaken by the Physical Planner who is this researcher) at Thaba-Tseka take place at DA's Office block. The budget for this office is controlled by the DA. Another Physical Planning Office is found in the DCS Office's building where Assistant

Physical Planners (APPs), whose budget is controlled by the DCS, undertake similar functions to those at Office in the DA's building.

The Officers have overlapping and multiple levels of line management, both at District and at Head Office. Head Office management includes the Principal Physical Planner, Chief Physical Planner and Commissioner of Lands, while District line management involves Administration Managers and the DCS or the DA.

The directives from their management are, in most cases, even conflicting because of confusing institutional structure and poor communication (Key Informants Interviewees E, F, G, H and N 2009). Each Head (DA and DCS) regards himself/ herself superior in power with regard to managing the LSPP District Office. This confusion results in problems such as conflicting/ mixed messages which lead to Officers hearing only what they want to hear (Key Informants Interviewees E, F, G, H and N 2009).

Furthermore, this Office suffers from a shortage of human and capital resources, especially transportation to facilitate work processes (Key Informants Interviewees E, F, G, H and N 2009). Key informants share the same views as this researcher (participant observer) regarding this situation. The findings of Swedesurvey (2006) also support this notion.

6.5 The LSPP Functional Divisions Described

The LSPP four functional Divisions, as mentioned in section 6.4 are described in this section. The processes undertaken by these Divisions are discussed and the challenges of each respective Division stipulated.

6.5.1 The Land Tenure Division Described

The Land Tenure Division undertakes formal land registration. Customary tenure is converted to leasehold and formal land transactions are processed through the Land Act of 1979. This division is popularly known as the "Lands Division" and is managed by the Chief Lands Officer (CLO) who is assisted by the Principal Lands Officer (PLO). The CLO coordinates the functions of this division, while PLO regulates through a set of standards and rules to ensure that the objectives are met. Lands Officers mainly perform the work of the Division (Key Informants Interviewees A, B, C, D, and E, 2009).

At Head Office, Lands Division operates through eight Lands Officers, while at District level one to three Lands Officers operates in each District. Thaba-Tseka no longer has a Lands

Officer as its long term Lands Officer (participant observer) was promoted to a senior post in the Physical Planning Division since 2009. However, that Officer has since been dealing with all LSPP operations where possible and as required by District clients.

This Division has a registry which stores client's (lease and land transaction application) files and is operated by three to four staff members at Head Office. There is also a "typing pool" for typing of lease drafts, printing of forms and all other word processing necessary for the Division to deliver its services. This section operates with two word processing staff.

All Lands Officers in this Division (including the management CLO) are engaged in land administration processes such as lease and land transactions (Key Informants Interviewees A, B, C and D, E and F, 2009). Monthly reports including the number of registered leases and land transactions are produced in this Division.

The Valuation Office is embedded in this Division and performs valuation of land parcels and improvements mainly for transfer operations. This Office is operated by three Valuation Officers (Key Informants Interviewee J, 2009).

The Key Land Administration Processes in the Division

The key processes in this Division are delivered through a set of objectives as required by the Land Act of 1979. Modernisation of customary land tenure prompt formal land market through efficient control over dealings in land (land transactions processes). Land tenure processes are manually carried out and computerisation is only for printing of forms and typing of lease drafts by the word processers people (Swedesurvey, 2006). Although the Division's objectives are many, the main processes involve production of leases and processing of land transactions. The following are the operations of the Division:

- Process applications for leases for the whole country for conversion of customary land tenure holding to leases for both urban and rural areas.
- Issue survey instructions to private surveyors.
- Facilitate land dispute resolution.
- Process applications for consents to transfer, mortgage, sublease, change of land use and subdivide land.

- Maximise revenue for the government through collection of ground rent and land transaction fees.

- Facilitate the acquisition of land for public purposes or for Selected Development Area (SDA- Declaration).

- Perform valuation of land and building for acquisition of land and for calculations of transfer duties, as well as for making the rent assessments for government properties and for when government rents from private owners.

- Provide technical support to the Community Councils on their mandate to carry out land allocation as provided for by Local Government Act of 1997 (Key Informants Interviewees A, B,C, D , E, F, G and H, 2009 and Swedesurvey, 2006).

The Lease Preparation Process

The lease process is undertaken in accordance with the type of land holding title that already exists (see Table 6.1) and regulated through the Land Act of 1979.

The unplanned settlements in Lesotho are held in customary land tenure (Forms C, CC2, C2, C1 and title deed) and are through the lease process converted into leasehold on application by land holder (Swedesurvey, 2006). This type of lease process takes longer than any other type, especially for the urban customary land holders. It involves many statutory steps and is considered lengthy and costly. The rural land tenure lease is relatively quick (Swedesurvey, 2006, Key Informants Interviewees, A, B, C, D, F and P, 2009). In general the conversion of customary tenure to leasehold has not been successful.

The lease process for non customary tenure (planned settlements in urban areas) involves few statutory steps and is considered quicker when compared to the processing of leases for land held in customary tenure in the urban areas (Swedesurvey, 2006, Key Informants Interviewees A, B, C, D, E, F, H, I, J, K, L, M, N, O, P, Q, R, and S, 2009). The lease preparation process takes place in LSPP, before the lease registration can take place.

Although the lease process is important in the context of sustainable development, it is considered a lengthy process and this becomes a disincentive to land holders (Lesotho Government, 2000, Swedesurvey, 2006, Key Informants Interviewees A, B, C, D, E, F, H, I, J, K, L, M, N, O, P, Q, R, and S, 2009).

The Valuation Process

The process of land and property valuation in the LSPP is undertaken by the Valuation Office. The process is undertaken for calculation of stamp duties (by Deeds Registry) upon land and property transfer only. The property value is based on the type of land use, location (distance away from the Central Business District in towns) and the property type (Key Informants Interviewees E, F and G, Swedesurvey, 2006). This process is undertaken in urban areas for ratings purposes by the Maseru City Council (MCC) (Swedesurvey, 2006). However, property rates are currently not collected in the country (Lesotho Government, 2000).

Challenges Faced by the Division

Delivering land tenure service prompts many challenges. Many of them are linked to lack of support by the government, hence the ineffectiveness and inefficiencies in delivering land administration services.

The first challenge relates to shortage of human resources in the Division which indicates lack of support from the government. The Division is under-staffed, hence few Officers undertake the processing of many volumes of lease and land transactions applications. In most cases, only applications whose owners check often, or pay bribes are processed. As a result, clients have lost trust in the Division because of lack of transparency and corrupt practices. Shortage of human resources is a major impediment to satisfactory performance and leads to ineffectiveness. This is evident at both Head Office and District Offices (Key Informants Interviewees A, B, C, D, E, F, G and H, 2009).

Shortage of capital resources is also reported a profound problem. For instance, Districts Offices lack vehicles designated specially for LSPP functions including site inspections, development control and delivery of processes for authorisation in the Head Office. This impedes on effective service delivery.

The second challenge ties in a lack of ICT infrastructure in the processing of Divisional land administration operations. These processes (lease and land transaction) are manually undertaken and involve many statutory steps and many actors. This causes delay and duplication of work which contributes to ineffectiveness. Other than delays, this also hinders transparency. Computerisation of land administration processes is envisaged to facilitate

quick and transparent services (Williamson *et al*, 2010). Furthermore, volumes of process applications undertaken manually by an under-staffed Division are reported to result in human error, which also adds to the time the process takes to the end product (lease and or registered land transaction). Ineffectiveness is a result of non-computerised tenure processes.

The third challenge is associated with poor Divisional and overall LSPP management. This frustrates land administration processes. They claim that their Heads (mangers) are too engaged in actual land administration processes to have time and resources to manage the operations. This result in poor communication, lack of coordination, lack of regulation and monitoring which contributes to the failure of the Division to cope with the variety of work required (demand of land administration products e.g. leases and land transactions). Furthermore, as a result of poor management, Divisional meetings are rarely held and Officers are neither trained nor motivated (Key Informants Interviewees A, B, C, D, E, F, G and H, 2009, Swedesurvey, 2006).

The fourth challenge links to a poor filling system. Files are reported to be missing all the time. This causes for another file to be opened, resulting in duplication of work. Client's applications are postponed resulting in clients losing confidence in the Division (Key Informants Interviewees A, B, C, D, E, F, G and H, 2009).

The fifth challenge is linked to decentralisation. Decentralisation has, instead of stimulating efficient service delivery as expected by the government, added to delays. This is because all land administration processes (leases, land transactions) in the country, whether prepared in Districts or Head Office are authorised only at the Head Office. This arrangement is a frustration to Districts Lands Officers as, upon any query encountered, the CLO or CoL stalls the process until the District Land Officer comes to the Head Office. This is often after only one month due to shortage of transport and subsistence allowance at District level. This frustrates both the Officer and the clients as it causes unnecessary delays in the processes (Key Informants Interviewees E, F, G and H, 2009).

Furthermore, clients consider the system unnecessarily expensive. They often hesitate before progressing and refuse to pay for fees such as land survey fees charged by private surveyor and stamp duties for transfer of land rights. Clients complain and insist that land registration should not be paid for as land is free gift from God and that the customary system does not allow selling of land. They normally raise this when they are faced with paying for service

fees. Many never return after being instructed to engage a private surveyor. Ultimately many land transfers happen outside of the formal system (LSPP). This has caused the government loss of revenue which is an accepted revenues stream linked to transfer of land rights.

The sixth challenge remains that of poor translation and understanding of land policy by Officers and clients resulting in delay of lease process. Key informants complain that policy outreach is lacking, and they also fail to understand some aspects of the law. This inhibits effective performance as process bottlenecks and mistakes are experienced (Key Informants Interviewees A, C, D, 2009).

Lastly, clients regard valuation as a disincentive for gaining formal land rights and to transfer property formally. An informal land market results and transfer taxes are thus avoided impending revenue generation for the state (Key Informants Interviewees E, F and G, 2009).

6.5.2 The Survey Division Described

The Survey Division undertakes the processes of cadastral survey and topographic survey as determined by the Land Act 1979 and Land Survey Act 1980 (Swedesurvey, 2006). It delivers these through two streams namely: the cadastral survey stream and topographic survey stream. The Head is the Chief Surveyor. She/he is assisted by the two Principal Surveyors (Principal Cadastral Surveyor and Principal Topographic Surveyor). The two streams are regulated independently by the respective Principals, while the Chief Surveyor coordinates their functions. Officers in this Division are referred to as Surveyors, Land Technicians and Cartographers (see Figure 6.3).

The Cadastral Survey Stream has decentralised its cadastral survey services to only three Districts namely; Mafeteng, Leribe and Botha-Bothe. The reason is lack of capacity (shortage of human and capital resources (e.g. survey knowledge and survey equipment) to distribute to other Districts. However, this Stream is currently giving in-house training to newly employed Land Technicians who will be placed at each LSPP District if equipment is sufficient at the District level. The Topographic Stream is based at Head Office only (Key Informants Interviewees J, K and L, 2009).

In addition, the LSPP Surveyors survey government plots, while Private Surveyors survey individual land parcels on lease application and the clients pay the survey costs. However,

there are cases where the LSPP Surveyors undertake private work and charge clients (Key Informants Interviewees J, K and L, 2009).

Furthermore, the Survey Division is computerised in so far as processing surveying data and calculations. Officers use ESRI's Arc View 3.1 Geographic Information Systems (GIS) to view and analyse the geographic data. It facilitates identification of the location of land parcel (Swedesurvey, 2006) but, this cannot be updated nor edited (Key Informants Interviewee L, 2009). ReGIS is "a tool to calculate the coordinates based on measured field data" (Swedesurvey, 2006: 44). It is used for accessing the cadastral layer including the cadastral plan showing the area of the land parcel, and length of sides. Microsoft Access is used as data-base which contains the owner's name, the plot number, application number and location of the land parcel (Key Informants Interviewees J, K and L, 2009). The Division key processes include the survey process.

Key Land Administration Processes in the Division

Survey processes precede the drafting of leases. Figure 6.4 shows an example of a cadastral map. The main land tenure processes in the Survey Division (Key Informants Interviewees J, K and L, 2009; Swedesurvey, 2006) are delivered through the following objectives:

- Determine land parcel boundaries through surveying.
- Produce and update topographic and cadastral map series.
- Advises all government ministries and agencies on mapping requirements and specifications for the development activities within the country.
- Maintain and keep record (custodian) of all copies of national maps, aerial photographs and survey records as provided for under the Land Survey Act of 1980.
- Establish and maintain national geodetic control networks for mapping and cadastral surveys.
- Maintain professional conduct and standards by regulating the licensing of surveyors under the provision of the Land Survey Act of 1980.
- Survey designed layouts/plans of settlements to produce cadastral plans upon receipt of survey instructions from Physical Planning Division.

- Survey of land parcel boundaries upon the lease process request.
- Produce land parcel unique numbers and use as lease numbers.
- Check for overlaps and encroachments and also liaise with Land Tenure and Physical Planning Divisions to check the legal status of surveys.
- Assist in boundary dispute resolutions.
- Map new land parcels and properties (interests) in the cadastre through subdivisions and consolidations (Key Informants Interviewees J, K and L, 2009; Swedesurvey, 2006).

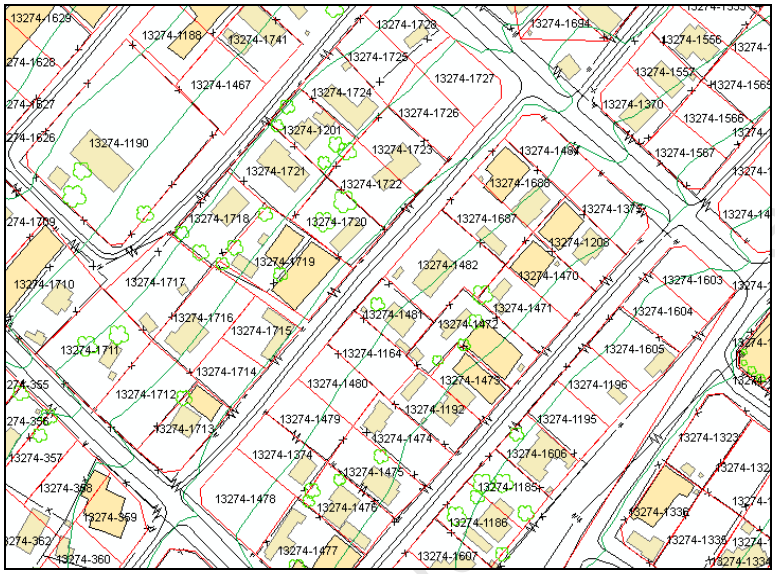

Figure 6.4 An example of a cadastral map (Swedesurvey, 2006: 32).

The cadastral survey is undertaken by cadastral survey operations stream and is a prerequisite to a lease preparation process. It involves the use of hard-ware and software as mentioned earlier in this section. The survey process involves the surveying of land parcel boundaries in accord with the specified land rights. The product of cadastral survey is a cadastral map bearing plot number, area, location and name of the land parcel owner (Swedesurvey, 2006). The plot numbers are used as lease numbers in the Land Tenure Division. This is a crucial step in the lease process (Key Informants Interviewees A, B, G, H, I, J, K and L, 2009).

Challenges Faced by the Division

Similar to the Lands Division, this Division faces challenges and ineffectiveness is linked to many problems.

Firstly, the government does not support Divisional activities. Shortage of human and capital resources indicates lack of support, hence poor policy transmission. The profound shortage of qualified surveying professionals to carry out reliable surveys of land parcels is highlighted earlier in this section. The Division depends on only three qualified survey professionals including one Survey Examiner for the whole country. The qualified local Surveyors are operating as registered Private Surveyors. As a result, double allocation of same unique identity plot number and overlaps are commonly reported (Key Informants Interviewees J, K and L, 2009). This causes disputes over land parcels and delays in delivery of survey services.

Shortage of human and capital resources also contributes to lack of updated maps. The LSPP depends on maps which are five to ten years old (Key Informants Interviewees J, K and L, 2009). These affect the operation of the organisation as a provider of land information.

Secondly, there is an alarming shortage of survey equipment and the available equipment is outdated. This is an impediment to efficient survey services. All Districts except Maseru and Leribe depend on Head Office equipment which causes delay in service provision even for government activities and disputes resolutions (Key Informants Interviewees J, K and L, 2009).

Lastly, the survey data-base is not up-dated with the changes or improvements in the Land Tenure Division. It is hence not in accordance with the actual lease holdings which appear in the Lands Division records. The Surveyors retrieve land parcel information from hard copy files stored in cabinets to create information in the MS Access data base (Swedesurvey, 2006). Furthermore, the land technicians use old software such as Arc GIS 3.1, while the Arc GIS 9.1 is only used by the Chief Surveyor although he/she is not involved in actual survey processes. This is a very outdated information system which contributes to inefficiency in the Division (Key Informants Interviewees J, K and L, 2009).

6.5.3 The Physical Planning Division Described

Physical Planning Division undertakes the processes of physical planning of settlements and development control as required by the Town and Country Planning Act of 1980 (Physical Planning Division, 2000). The Division is managed by Chief Physical Planner who is assisted by the Principal Physical Planner. Officers in this Division are referred to as Physical Planners, Principal Technical Officers and now also Assistant Physical Planners (APPs).

Physical Planning has, since 2008, placed many Assistant Physical Planners (APPs) in Districts. The aim was to have APPs for each of the 128 Community Councils. The APPs functions are to carry out duties as required by the Town and Country Planning Act of 1980, Development Control Code of 1980 and more particularly, to implement the National Settlement Policy Plan of 2007. The emphasis is on the design and overseeing of implementation of Community Council settlement plans (Lesotho Government, 2009, Key Informants Interviewees M, N and O, 2009).

Proper planning of land allows easy provision of infrastructure such as roads. This has knock-on effect enhancing of business development and delivery of services in planned areas. The key processes of this Division are discussed below (Key Informants Interviewees N and O, 2009).

Key Land Administration Processes in the Division

The Division has the following objectives:

- Develop strategic planning and local planning.
- Oversee all planning, construction planning, land development and facilitate sustainable human settlement.
- Facilitate effective development control through provision of planning permits and building permits to ensure that developments conform to the planning standards, and to approved plan and legally binding plans.
- Implement national settlement plans for community councils.
- Determine ideal places for social, economic and environmental activities in a spatial environment for optimum location.

- Provide technical professional advice to all stakeholders including government, private sector, business community, individuals, local communities and local councils (Physical Planning Division, 2000).

The Planning Permission Process

This is a land development control process which is undertaken by the Physical Planning Division through the Town and Country Planning Act of 1980. It is done to ensure that land developments conform to the existing layout or plans. This process is important as it promotes sustainable human settlements.

Challenges Faced by the Division

The Physical Planning Division, like any other LSPP Division, is not immune to challenges and problems which inhibit it to deliver effective land administration processes.

Firstly, the Division lacks government support. For a long time, the Division has been accorded a low status in the country and undermined with shortage of human and capital resources (Key Informants Interviewees N and O, 2009). This low status contributes to ineffective functioning of the Division. The Division has, most of the time been forced to operate under its required budget. This has caused it to fail to meet its clearly defined objectives. In addition, poor salary structure (low salaries) has caused the Division loss of professional planners. The Division has failed to retain human potential and skilled personnel over the long term. It has suffered professional brain drain largely to South Africa (Physical Planning Division, 2000). As a result of failure of the government to strengthen institutional capacity for the Division, sustainable human settlements development remains elusive (Key Informants Interviewee N and O, 2009).

Secondly, uncontrolled development, which resulted unplanned settlements, remains a challenge. These settlements are a result of informal land allocation which boomed as a result of illegal change of use, subdivisions and land allocation by field owners. This is most pronounced in former agricultural land along the urban peripheries where it is a common practice in urban and peripheral areas and now also in rural areas (Key Informants Interviewees N and O, 2009). This encroachment make it difficult to implement development control, planning standards and the Town and Country Planning Act of 1980, not to mention the challenges posed by chieftaincy of such areas (see also Section 6.2). The implementation

of such laws on urban areas such as Ha Tsolo, Ha Matala and Khubetsoana, which formed as a result of uncontrolled encroachment has, to a large extent failed (Key Informants Interviewees N and O, 2009).

In general, the processes of development control and planning have not been successfully implemented in Lesotho. This is demonstrated by massive unplanned settlements (sometimes referred to informal, although legitimate) in the both urban and rural areas (Key Informants Interviewees N and O, 2009). This inefficiency is linked to lack of political support, shortage of human and capital resources in the Physical Planning Division as already documented in this section.

6.5.4 The Land Use Planning Division Described

The Land Use Planning Division is managed by the Chief Land Use Planner (CLUP) who is assisted by the Principal Land Use Planner (PLUP). The Division operates with few staff members who are commonly known as Land Use Planners. Unlike other LSPP Divisions, it is located separate from the LSPP Head Office.

Similar to the Survey Division, the Land Use Planning Division has little representation at District level. Butha-Buthe and Quthing are the only Districts with Land Use Planners. The rest of the Districts depend on Head Office capacity (Key Informants Interviewee M, 2009).

Key Land Administration Processes in the Division

The Land Use Planning Division mandates are to promote harmony among various uses of land to enhance productivity and facilitate access to basic services. It also protects the destruction of arable land, wetlands, watersheds and other sensitive ecosystems from destruction or degradation (Lesotho Government, 2007, Physical Planning Division, 2000). It oversees the implementation of the land use planning process as a strategy to provide Basotho with sustainable human settlements (Lesotho Government, 2007). This operation also advises the Physical Planners on proper planning for different land uses, change of existing land uses to others and monitors that the land uses are in line with the suitability assessments (Lesotho Government, 2007, Physical Planning Division, 2000, Key Informants Interviewee M, 2009). The objectives of this Division are as follows:

- "Formulate land use plans and zone each type of land to specific use in accordance to its geological state.

- Formulate broad land use plans indicating the best land use option, through zoning of land use types.
- Develop a national land use planning data base for internal use and for use in land information system.
- Map and document land cover classification and suitability to indicate best land use options at national and local level for guiding policy formulation.
- Formulate land use models to meet general goals of equity, security of income, communal cohesion.
- Develop a system for translating, aspiration at community level into Districts level and for national programmes.
- Ensure institutional efficiency and effectiveness of the Division.
- Produce community land use plans" (Physical Planning Division, 2000:15).

Challenges Faced by the Division

Land Use Planning Division like other LSPP Divisions is not exemption from challenges. The operations of this Division are not common in the country because of lack of clear policy. Also, land use process is a fairly new subject in the country, hence it has not been widely understood nor appreciated (Physical Planning Division, 2000, Key Informants Interviewees M, N, O and P, 2009). Therefore, the functions of Physical Planning and Land Use Planning have for a long time overlapped and even conflicted; it is only recently that their Heads set down to delineate boundaries (Key Informants Interviewee M, 2009). Similar to other LSPP Divisions, Land Use Planning also suffers shortage of staff and lack of capital resource. In an interview with key informants in the Division, the researcher observed bitterness regarding poor working conditions (Key Informants Interviewee M, 2009). Problems are linked to the following:

- Legislation to legalise binding the legality of land use plans and enforcement mechanisms are lacking.
- Lack of support from government: shortage of resources to support uncontrolled settlements and other land use activities.

- Poor management of the Division and of LSPP as a whole (Key Informants Interviewees M, N and O, 2009).

- Lack of cohesion between the Division and Ministries dealing with land use activities such as the Ministry of Agriculture and Food Security, the Ministry of Forestry and Land Reclamation and the Ministry of Natural Resources. Each of these ministries implements its own objectives and policies in a vacuum (Key Informants Interviewees M, N and O, 2009). This results in conflicting, overlapping and parallel policies and contradicting land use practices.

- Low staff turnover, with underpaid members who get de-motivated by low salaries (Key Informants Interviewees M and N, 2009, Physical Planning Division, 2000).

These problems indicate that better management of land use is an unforeseeable goal for the LSPP.

6.6 General Land Administration Processes Linked to the LSPP Processes

The LSPP, like any other land administration system, performs various processes to deliver its goals and these are underpinned by various laws and regulations delivered through its Divisions. The significance of each process in the broader goals of land management in Lesotho, as derived from multiple perspectives has been highlighted. Some of these processes are demonstrated in diagrams.

This section discusses other land administration processes which are linked to the LSPP processes discussed in Section 6.5. These are the lease registration process, transfer process and the revenue and ground rent collection process.

6.6.1 The Lease Registration Process

The Lease registration process is the continuation and finishing of the LSPP lease process. Registrations of leases are undertaken by the Deeds Registry and lease ledgers are used to record the registered leases.

After registration, the lease ledger records information on lease number (land parcel or plot number), date of registration, name of lessee, payments date, receipt number and the name of the registrar. One copy of a lease is archived in number order in the filling sleeves and two

copies (Commissioner's copy and client's copy) are send back to the LSPP (Swedesurvey, 2006, Key Informant Interviewee P, 2009).

6.6.2 The Transfer and Mortgage Processes

The transfer process is the passing of one's land and improvements rights to another through formal land registration system. The process depends on availability of a lease as secure land title. This process involves many actors such as the LSPP Land Tenure Division, the LSPP Valuation Officer or Private Valuer, Private Conveyance, the CoL, Principal Secretary (PS), Minister of Local Government and Deeds Registrar. However, the PS and the Minister are final signatory in the transfer and mortgage transfer (Swedesurvey, 2006 and Key Informants Interviewees P, Q and R, 2009).

Two conditions upon transfer application are a prerequisite. The first condition includes firstly, declaration of current entitlement (landholding capacity by the transferee). This is done to evaluate the total landholding of the individual. If the transferee's land holdings exceed the statutory limits, the transferee must justify the reasons for a transfer (Swedesurvey, 2006, Key Informants Interviewees P, Q and R, 2009).

The second condition is that valuation of land and property must be undertaken to provide information for the calculation and payment of stamp duties. The lessee can either involve a private or the LSPP (government) Valuation Office for this process. The choice is made by the client (Swedesurvey, 2006, Key Informant Interviewee P, 2009).

Most clients use Private Valuer for this process. The LSPP Valuation Office leaves clients with no choice but to engage Private Valuer. A major problem in this office is conflict of interests and moonlighting. Client's applications stall and processes are delayed on purpose because officers in this operation conduct private work, sometimes in office hours. This private work is valuation of land and property, hence is of the same type as the employee is routinely employed to conduct for the LSPP. For this reason those clients who do not choose the private root, often suffer delays.

Upon meeting the two conditions, the lessee pays the transfer application fee and stamp duties to the Accounts Office for this transfer process (Swedesurvey, 2006, Key Informant Interviewee P, 2009).

There is a Deeds Registry ledger to record deeds of transfers and mortgages. The information recorded includes the registration number, date of registration, nature of deed document, the registrar' signature, value of stamps affixed, payment date, receipt number, date of cancellation of deed. The receipt issued by the accounts section on payment of registration is sent into the government revenue account at Central Bank (Swedesurvey, 2006, Key Informant Interviewee P, 2009).

6.6.3 The Revenue and Ground Rent Collection Processes

The LSPP, like any other land administration system, is a business system (Williamson *et al*, 2010) and it is expected to collect revenue for the government to boost economic growth. Revenue in the LSPP is collected from the following service fees: ground rent fees, valuation fees, survey fees, lease preparation fees, statutory fees, lease registration fees, building permits fees, map sales, consent fees, stamp duty fees, planning permits fees, other title preparation fees (user certificates for government ministries) and ground rent fee (Swedesurvey, 2006).

Above all other taxes levied on land administration processes, there is ground rent which is tax levied on occupational rights. Payment of ground rent is paid by lease holders (both rural and urban) on an annual basis, unless an exception has been granted. Ground rent, like other fees, contributes to the country's revenue (Swedesurvey, 2006). However, lessees only come forward when they wish and when they want to lodge application to transact in land. Settling of outstanding ground rent balances is a prerequisite to start land transaction process (Swedesurvey, 2006).

However, the LSPP has failed to collect revenue of any significance from service delivery. This is blamed on lengthy and expensive land administration processes which discourage engagement with the LSPP by citizens and businesses and leads to a lack of comprehensive land information data (Swedesurvey, 2006).

Furthermore, ineffectiveness of the LSPP motivates informal land markets. These markets also inhibit the optimum functioning of the LSPP as business organisation, hence it fails to accomplish its mission of generating revenue for the country (Key Informants Interviewees A, B, C, D, E and F, 2009).

As for the collection of ground rent fee, the LSPP has no enforcement mechanisms to initiate its payment, hence clients pay when and, if they wish. These are some of the reasons that have made the government declare LSPP ineffective and unable to lead the country towards sustainable development (Key Informants Interviewees A, B, C, D, E, F).

6.6.4 Summary

These LSPP functions are performed through various processes which lack clarity, takes time and are confusing (Lesotho Government, 2000, Swedesurvey, 2006). The Land Act of 1979 lease process and land transaction processes are typical examples of processes which involve too many confusing forms and many statutory steps. In addition, there are process checking points and various institutions involved during the lease process and transfer processes (Swedesurvey, 2006). An example is the involvement of allocating authorities in the affidavit form and the involvement of the Minister and the Principal Secretary in the transfer consent process (Swedesurvey, 2006). Due to these factors involved, it takes long time for a client to receive a lease from the time of application. Swedesurvey (2006) found out that it can actually take five to six years to register a lease. The observation of the researcher and the perspectives of the key informants indicate that it takes even longer. Lesotho is characterised by insecure land tenure as most of the land and improvements are trapped in informal land holding as a result of poor structural arrangements (Lesotho Government, 2000, Swedesurvey, 2006, UN-Habitat, 2005).

There are many processes involved (e.g. land allocation, survey, valuation, ground rent billing and planning permission processes) but given the scope of this research, it is impossible to discuss all the processes, hence the researcher covers only a few processes to highlight the main issues in land administration in Lesotho.

The main processes, such as lease applications, emanate from the land allocation processes, although the land allocation process is not included in this study. Lease processes are shown to be lengthy and costly. These lengthy, costly and un-computerised processes contribute to the ineffectiveness of the organisation. These definitely impact largely on the current state of Land Surveys and Physical Planning. The processes discussed in this section contribute to the understanding of the operational aspects of the land management system in Lesotho.

6.7 Challenges and Problems by Key Informants Synthesised

This section presents a synthesis of perceived problems, issues and challenges as derived from in-depth interviews with the key informants conducted in 2009. It is important to note that the nature of those interviews did not focus much on transparency issues and corruption practices as the researcher thought they were a bit too sensitive to the key informants, although some key informants openly came forward and declared that they participate in corrupt practices. In addition, documentation states that the LSPP services are not transparent and Officers are corrupt (Swedesurvey, 2006).

Incidentally, some of the statements presented in this section might sound familiar (similar to those presented as challenges faced by the LSPP Divisions). This is because that information was derived from the operators of the Divisions who are the key informants. However this section presents the key informant's views of the LSPP problems in more detail. Those problems are seen in the light of the LSPP administration, policy translation and transmission, communication channels, process integration, socio-economic contexts and technical issues.

6.7.1 The LSPP in Government Bureaucracy

The LSPP lacks government support. Shortage of human and capital resources is indicative that the government does not recognise LSPP and the importance of its operations to the overall socio economic development of the country. The key informants indicated that this is frustrating them as the government expect LSPP to operate effectively and deliver efficient services to the nation within the constraints of human and capital resources. They further noted that although they budget for their respective activities yearly, they are not granted funds to support such activities. They therefore blame the ineffectiveness and poor performance of their organisation on the government negligence and motivate that the government should fully support LSPP with resources if land administration functions are to be efficient in the country (Key Informants Interviewees A, B, C, D, E, F, G, H, I, J, K, L, M, N, O and S, 2009).

6.7.2 The LSPP and Land Policies

Lack of knowledge about the land policy and misinterpretation thereof is common among key informants working for the LSPP and its clients. This is one of the challenges facing LSPP. The increase in informal land transactions (off-register land and property rights transfers and

subdivisions) and uncontrolled change of land use and development are indicative of the lack of enforcement of land policy. Enforcement mechanisms are either poor or lacking due to limited capacity in the LSPP.

6.7.3 The LSPP Management

The LSPP is poorly managed (Key Informants Interviewees A, B, C, D, F, G, I, J and K, 2009). The key informants argue that the LSPP management (the Minister, Commissioner of Lands, the four Divisional Chiefs and the four Divisional Principals) cannot concentrate their time on management of the organisation since they are engaged in the processes of land administration as final signatory. The involvement of all line managers in processing land transactions causes duplication of functions and lengthy and unnecessary delays. Management tasks, such as organising meetings, workshops, staff mentorship and training, are left by the wayside (Key Informants Interviewees A, B, C, D, F, G, I, J and K, 2009).

Furthermore, there is confusion of line management. For instance, those in the Maseru Head Office of LSPP, such as the Lands Officers and Land Technicians, report to the Principals and thereafter to the Chiefs who are all based in the Head Office. In the District Offices they have this line of management but also report to the District Administrator and District Council Secretary (see Figure 6.3), who are equal in status. District Officers thus have more than two Heads to report to causing confusion and even conflict of interest at times (Key Informants Interviewees A, C, D, E, F, G, H and K, 2009). Streamlining of workflow processes and line management is essential.

6.7.4 The LSPP Communication

A sense of frustration is expressed on issues of communication and integration in LSPP. A top down approach typifies the communications and effective communication is thus inhibited (Key Informants Interviewees A, B, C, D, E, and H, 2009). Meetings are rarely held, even at the Division level. The key informants argue that Officers at District level are poorly informed of issues at the LSPP Head Office. Official communication channels are lacking and information about land administration processes is poorly communicated. Interpersonal communication is the major source of information, and rumours, misinformation, and lack of information abounds (Key Informants Interviewees A, B, C, E, G, I, and J, 2009). This type of communication environment is also influenced by power relationships and social outsiders may be excluded from information sharing (Heffron, 1989).

Furthermore, there are few opportunities for bottom-up feedback to management levels, and there are no platforms to discuss issues, progress or difficulties in delivering of services. This has resulted in misunderstandings which further led to internal conflicts between staff members. Poor dissemination of information discourages the effectiveness of Officers. They no longer perform to the best of their abilities because the work environment discourages personal incentives to perform and there are few institutional incentives for staff to perform to the best of their ability (Key Informants Interviewees E, H, I and J, 2009).

In addition, the key informants report that telecommunication facilities in the LSPP are insufficient. The Officers are not allowed to make phone calls to clients. In cases where they encounter a process query, they have to file the job until the client returns at some later stage to enquire about the status of their land process. The key informants observe the frustration of clients as the processes takes an unnecessarily long time. The end result is loss of trust and confidence in the system (Key Informants Interviewees B, C, E, G, H, I, and J, 2009).

6.7.5 The LSPP Processes Integration

Integration between the LSPP Divisions is minimal at best. The LSPP Divisional Officers state that they lack knowledge as to how other sub-systems at the same level in the organisation function, and there is little communication between Divisional Offices. They claim that this is mainly because they are not introduced to the LSPP as whole organisation. They are only introduced to the functions and processes of their Division and not others. For instance, the Lands Division has reported serious backlog of lease applications which needs subdivisions and change of land use, although the Physical Planning Division does not have knowledge of such (Key Informant Interviewees A, B, D, F, G, H, I, K, N and O, 2009).

There are also perceptions of superiority and inferiority between the Divisions. Some Divisions perceive themselves to be the most senior in importance and look down upon other Divisions. They see themselves as the best positioned to deliver the goals of the system. Furthermore, integration of the LSPP District Offices with Head Office is not good. Flow of work between Head Office and District Office is poorly managed and often requires District Officers to travel to the Head Office to check up on “their” applications (Key Informants Interviewees, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O and S, 2009).

Consequently, ineffective processes have resulted in uncontrolled development and encroachment of settlements on agricultural land, which ultimately resulted in large areas of unplanned settlements (Key Informants Interviewees N and O, 2009).

6.7.6 The LSPP Technical Issues

Poor information technology and information system (IT/IS) in LSPP poses problems in the general operation of the system. For the LSPP, all land administration processes, except for cadastral survey process are manually undertaken. Multiple forms are manually filled in hence human error in these processes is a common and prominent problem. The key informants indicate that, most often than not, the queries which are returned to them for corrections are as a result of human error. This error requires that a new form is completed from scratch, adding to an already lengthy process and delays (Swedesurvey, 2006, Key Informants Interviewees A, B, C, D, E, F, G, I, K, L, N and O, 2009).

Computers are used in the Survey Division to process land survey results, but in other Divisions they are limited to word processing and printing forms and materials used in land processes.

Even in the Survey Division, the IT support system is reported to be a frustration. It is often out of order and repairs are not undertaken in good time. In addition, the ReGIS is no longer supported as the manufacture no longer exists (Swedesurvey, 2006) and the data security for stored data is reported to be very weak (Key Informants Interviewees A, B, C, D, E, F, G, I, K, L, N and O, 2009).

6.7.7 The LSPP Social and Economic Environment

Key informants state that the current social and economic context in which the LSPP operates is very poor. Conversion of customary land title leasehold is not happening at a good rate; hence security of tenure is very low. This argument is based on the notion that, at a certain level, Basotho society seems to be a close knit one (Key Informants Interviewees A, B, C, D, E, F, G, I, K, L, N, M, O and P, 2009. As a result, land transfer is often between people who know each other or are related in such instances the need to effect formal land transfer is not apparent to the buyer and seller.

Moreover, key informants observation also suggests that the costs of registering and transferring land rights are expensive to most people. This is a conclusion from the fact that

most lease applicants never come back to check the status of the processes (Key Informants Interviewees, A, B, C, D, E, F, G, H, I and M, 2009).

It is also assumed that clients reject their applications upon hearing that they have to engage a private surveyor to carry out the survey of their land parcel boundaries to allow the lease process to carry on. Key informants overheard some clients complain and raise the notion that "land is a free gift from God" and they should hence not incur costs for it. This behaviour indicates that people still feel secure in their customary tenure and that even without land titles there is a social security because evictions due to lack of a land title do not happen in the country (Key Informants Interviewees, A, B, C, D, E, F and G, 2009).

Another challenge facing the land administration system in Lesotho is that clients are dishonest about the nature of the land transfer. They normally claim to be relatives and transfer free of consideration or often lower the amount of consideration. The observation of the key informants is that the clients dodge to pay the land transfer stamp duties which are calculated based on the valuation of the transferred property. For this reason, the process happens twice. This means that clients come to the Office to "formalise" the transfer which has already taken place. In this case, formal land transfer follows after the informal land transfer. This is a common practice among clients and this behaviour inhibits the government from collecting a reasonable amount of revenue from such land transfers (Key Informants Interviewees P, Q, R and S, 2009).

Furthermore, cases of land disputes over land boundaries (overlaps) and ownership are observed and reported. Some cases are easily solved out of courts while others are settled in the courts. Land dispute cases occur due to double allocation of land, which is outside the limits of this thesis, although such issues have direct effects on the operation of the LSPP (Key Informants Interviewees A, B, C, D, E and O, 2009).

6.8 Effects of the LSPP on Lesotho's Socio - Economic Development

The LSPP has had a significant effect on the lowering of the socio-economic status of Lesotho. Various reports, papers and books have reported on the effects of LSPP on economic development of the country. In a recent study by Swedesurvey (2006), the ineffectiveness of LSPP is generally blamed on institutional aspects, processes, technology, policies, resources and costs of LSPP services. Some of these opinions are shared by the Key

Informants and this participant observer. This section discusses the effects of the LSPP on economic development of the country as seen from multiple perspectives.

6.8.1 Access to Land and Property Information

There is lack of a comprehensive land information system in Lesotho (Swedesurvey, 2006). Land information in the LSPP is found in the lease files which are held manually and stored in filing cabinets. Land parcels cannot be easily identified. The filing and retrieval system is also poorly managed making it difficult for clients to access land information (Key Informants Interviewees A, B, C, D, E and F, 2009).

In addition, lack of complete and reliable land information system (LIS) makes it difficult it difficult to check an individual's landholding and leads to unequal distribution of land. It also fuels corrupt practices in land allocation, land registration and management. In the process, the land registration takes place with no knowledge of how much of land an individual holds, nor of the value of property, because there is no register of such data. Multiple allocations of the same land rights and land disputes result (Swedesurvey, 2006). Also, in the absence of such information, it is not possible to introduce the fiscal processes for development projects (Lesotho Government, 2000).

Furthermore, there is also lack of public outreach to explain existing laws and land ownership. Information is not disseminated to the public and lack of knowledge on existing land laws is widespread (Swedesurvey, 2006).

Based on the above statements, lack of a comprehensive land information system becomes a huge discouragement to development of the land markets as information is not easy and readily accessible to the clients. This hinders the socio-economic development in Lesotho (Swedesurvey, 2009). The LSPP therefore, fails to deliver as a land information system. This adds to the already existing administrative delays in delivery of land administration services.

6.8.2 Security of Tenure

The LSPP is seen as the source of massive insecure land holding (customary tenure holding) in the country (Swedesurvey, 2006). Customary land holding is regarded a less secure land holding which also does not promote land markets and hence boost economic growth. Insecure tenure is related to the lengthy processes, incompleteness and lack of transparency which inhibit provision of security to the majority of commercial and residential properties in

the country. There are also only 15 000 leases in the Deeds Registry for a population of 1.8 million citizens (Donker, 2010); hence security of tenure in Lesotho remains a serious threat to sustainable development and a constraint to economic development (Swedesurvey, 2006).

Finally, there is lack of enforcement of land laws which is also caused by shortage of human and capital resources. The legislature framework cannot be used to underpin efficient land administration processes (Lesotho Government, 2000).

Ultimately, an informal land market provides greater access to land and operates in the presence of the formal land market. This happens in many ways. At times, only a verbal agreement of sale of land is made between the buyer and the seller, or where titles exchange hands and Form C remains in the names of the original holder. Also, the most common practice is seen where the chief produces another Form C for the buyer, while the original holder retains the original (1st) Form C. The ultimate result is double allocation of same plot to different land holders resulting in dispute over land title.

6.8.3 Access to Property Rights and Land Holding

Obtaining property rights in Lesotho is a lengthy and uncertain process (Swedesurvey, 2006). In addition to lengthy processes and prolonged time schedule to get a lease, a Ministerial consent to land dealings involving transfer of land interests, mortgage applications, subdivisions and subleases is required. This adds to the prevailing strain caused by lengthy time to get a lease and a land transaction (Swedesurvey, 2006).

Furthermore, restrictive land holding in Lesotho discourages foreign investments. The Land Act of 1979 restrict foreigners from acquiring and holding land rights in Lesotho other than through partnership or business arrangements where they cannot be majority owners (UN-Habitat, 2005). This is clearly a remarkable constraint to foreign investment because in most cases, Basotho do not have capital to hold 60% partnership share with foreigners (UN-Habitat, 2005, Swedesurvey, 2006). This is the reason many foreign investors reside in the nearest South African towns, while they run businesses in the Mountain Kingdom. This contributes to loss of revenue.

Finally, the Land Act of 1979 restricts landholding through the land holding ceiling. For example, commercial landholding is restricted to three leases aggregating to 3000 square meters, while residential land is restricted to five leases aggregating to 5000 square meters

(Swedesurvey, 2006). This is observed as another serious constraint to development of a property market and private enterprises. However, exception for estate development and hotels exists (Swedesurvey, 2006).

6.8.4 Effects on the Mortgage Market

The Mortgage market is slowly developing in the capital town and, to some extent in the low-lands towns such as Hlotse and Mohaleshoek (Swedesurvey, 2006). However, the ineffective land registration system in Lesotho is a serious constraint to mortgage market. Many other aspects discussed in-depth in the earlier sections (see Sections 6.5 and 6.7) contribute to the poor mortgage market.

An example is insecure land tenure; lots of properties are trapped in unregistered land titles (customary tenure). Additional contributing factors are delays in acquiring consents for new leases, transfers and mortgages (see also Section 6.8.2). The Minister's consent to transact in land adds to administrative delays in LSPP and it is considered an unnecessary step (Swedesurvey, 2006). It could take almost more than five months to get mortgage consent (Swedesurvey, 2006) and this discourages people from applying. In this manner, the economic development of the country is therefore, compromised.

Moreover, access to the land and property market information mentioned in Section 6.8.3, affects the mortgage market and thereby results in scarce foreign investment (Swedesurvey, 2006).

6.8.5 Summary

LSPP failures are linked to lack and shortage of resources, complicated procedures, state bureaucracy, de-motivated Officers, corruption, brain drain, decentralisation, transparency issues, restrictive policies, slow, expensive and inefficient services (Lesotho Government, 2000, Swedesurvey, 2006, Key Informants Interviewees A - S, 2009). It therefore, hampers investments, and does not bring revenue to the State as it creates dysfunctional land markets and thus promotes informal land markets. LSPP cannot operate as a successful business system. Based on these problems, the study suggests that the LSPP can neither provide secure rights to the majority of Basotho people nor lead Lesotho to sustainable development as required by the government and by global agendas.

6.9 The State of Relationships between LSPP Head Office and LSPP District Office

This section provides a brief presentation of the relationships which exist between LSPP Head Office and the LSPP District Offices.

The key informants indicate that ineffective management of the LSPP results in poor communication between the LSPP Head Office and Districts (Key Informants Interviewees E, F, G, H and N, 2009). They further express that once an Officer is placed at District Office, the LSPP management forgets about her/his existence as the technical Officer in the District. This frustrates the District Officers who often feel isolated and neglected. As a result, an internal conflict between the Officers is experienced, this adds to ineffectiveness of the system (Key Informants Interviewees E, F, G, H and N, 2009).

Key informants argue that Officers at District level are poorly informed of issues taking place at the LSPP Head Office. Also, key informants at Head Office indicate that lots of activities happen at Head Office and are only known to management. They hear about them second hand or simply observe them taking place. For example, the simulation of the LSPP reform process took place with the presence of MCC consultants (working on process of the reform of the land administration system) in the LSPP Head Office building. Officers rely on informal communication channels. It took more than a year to inform the staff about the land administration reform project (Key Informants Interviewees A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, R and S, 2009).

6.10 Participant Observer's Perspective of the LSPP at District Level

The Participant observer holds wealth of experience as the LSPP Officer serving the highlands of Lesotho (Thaba-Tseka District) since 2006.

Since her operation in the District, she observed that the members of the community are willing to register their land formally, especially the business community who may even want to transact on their land parcels. Urban lease applications increased in numbers in a very short time because of willingness for formal land market development.

In her experience, the LSPP management and operations have been nothing but a pain to its clients and the community at District level. The inefficiencies, delays and incomplete processes made clients to lose trust in the Office. Production of leases is very low if not non-

existence, hence jeopardising the formal land market. The Researcher observed client's frustration as the Office failed to deliver as expected and some resistance to formal land transfer has been observed. Consequently, uncontrolled development on agricultural land, illegal change of land use such as changing commercial development to institutional, agricultural to residential and commercial development is observed.

Furthermore, lack of planning results in cases of disputes over boundaries. These cases are also resulting from the booming informal land market through informal transfer of land rights in the District.

Participant observer shares the same views as those discussed in Sections 6.5 and 6.7. Inefficient land administration services in Thaba-Tseka results from shortage of human and capital resources and is detrimental to the delivery of services. Furthermore, this Office suffers poor management. The two Heads at District level, equal in power regarding the management of LSPP, causes structural inadequacy. These two Heads often lack understanding of the functions performed by the LSPP and this result in LSPP goals beings often lost between the two Offices. The desperation to acquire resources such as subsistence capital and transport to perform duties are not supplied, and these resources are not released even in cases where the budget have been provided because of lack of understanding and interests to comprehend the importance of supplying such an Office with resources by these two Heads.

In addition, the working conditions are very poor with lack of direct telephone line, lack of internet and shortage of transportation. There is no special vehicle dedicated to the LSPP activities including undertaking of site inspections, other duties requiring field work and submission of land administration prepared processes (leases and land transaction) for authorisation in Maseru.

Moreover, poor land allocation process, which are also blamed on ineffective land administration services in Lesotho, has hit the Thaba-Tseka urban area. Although Thaba - Tseka was declared a town in 1980, land allocation in the urban area took place as though it was rural (e.g. granting a rural land title such as the Form CC2 to urban land holders) and contributed to delays of LSPP to process the leases. This kind of allocation requires that title verification (a process of verifying affidavit and Chief's letter as form of land holding e.g. in cases where title do not exist in urban areas) be carried out in the Form of CC1 before the

lease process continues. The process (title verification) is undertaken by Urban Land Committee which is responsible to the Community Councils.

The Council sits once a month and activities other than the land management take their time. The land title verification process can take even longer than two months, adding to the already existing lengthy lease process periods. Verification of land title Urban Land Committee minutes serves as a proof that titles have been verified. Title verification minutes take longer to reach the clients and or the LSPP Office. The Form CC1 preparation is dependent on the availability of committee minutes. It is only upon release of such minutes that the Lands Officer prepares Form CC1 for the Commissioner of Lands to append his/her signature. This effort has not been successful for reason not known to the Lands Officers; it took more than two years to have the Forms approved. This has angered the clients.

Upon poor service delivery at District level, the observer noted anger, frustration and received harsh views from the clients, especially the business community, who desperately needed leases for mortgage application. They had lost trust in the system as result of ineffectiveness and most probably blame the Officer who interacts with them daily. Unfortunately, this symptom has been reported to be general in other Districts as observed by key informants. The inadequacies in land management systems have ultimately frustrated the people.

In conclusion, working as a land administrator at LSPP especially at District level is a frustrating, but challenging experience. The LSPP working conditions do not give this participant observer a chance to use her skills and knowledge to the best of her ability because of organisational disfunction.

6.11 Participant Observer's Perspective of the LSPP at Head Office

In the observer's perspective, the LSPP Head Office Officers face many challenges like District Offices. Perhaps the challenges and problems are quite similar to those expressed in Section 6.5.

Firstly, Officers are frustrated by the red tape in land administration processes. The preparation, checking and authorisation of these processes take too long and many people are involved in the checking of the processes before the actual signing and registration takes place.

Secondly, Divisions are under staffed and overloaded with land administration processes applications and this adds to ineffectiveness as delays are experienced. Furthermore, poor working conditions abound in the Divisions. Workshops, trainings and mentorship are rarely undertaken although Officers are expected to keep up with the technology and demands from the public, and to perform to the best of their abilities even in poor working conditions.

Third, the filing system in the lands registry is poor and loss of documents is reportedly a common case, adding to delays in services delivery. It can take a day or more to look for a client's file without success. Upon searching, clients are normally dismissed and instructed to check after two weeks. Consequently, clients lose confidence in the system.

The fourth challenge relates to poor management. The LSPP management is also a problem as the CoL and the Divisional Chiefs do not show leadership skills. They are not democratic, and manage the system without diplomacy. The researcher observed that some Officers are favoured over others e.g., a particular Officer in the Land Tenure Office was always chosen to represent the Land Tenure Division for matters outside the Office (e.g. in Parliament).

The fifth problem relates to lack of control and regulatory mechanisms for the staff of the organisation. Officers come and go as they wish. Clients wait for a long time in a queue. It can probably take more than two hours for a client to be attended to, because of absent Officers.

Finally, communication channels are not open and, if there, they are slow. There are no platforms for audits and regulation of performance. Delays in service delivery have led to clients nicknaming the LSPP Land Tenure Division in particular the "check after two weeks Office", as they are often told to check after two weeks. They claim they check their application processes every two weeks to no avail, complaining that sometimes the two weeks turn into two or more years. Hence, whenever they hear that "check after two weeks", they know that they are just being dismissed. Another issue is that of information sharing, which is informally transmitted. Lease and land transactions applications are not tabled and shared between respective Divisions. Each Division conducts its business in a vacuum and only consults another operation if information cannot be otherwise obtained. Clients of the system are the most frustrated as they regard the system as inefficient and lacking transparency.

6.12 Synthesis of the LSPP Problems from all the Perspectives

Studies like those of the Swedesurvey (2006) summated the LSPP failures in the context of complicated processes, institutional deficiencies, shortage in human and capital resource capacity, lack of equipment to manage and maintain records about land rights and managerial problems. The study goes further to indicate that the inadequacies in the LSPP have caused the country to lose revenue that could have been collected from the LSPP services. This has contributed to slow economic growth and thus poverty. The participant observer and many key informants share the same views.

The current LSPP has failed to accomplish its objectives as could have been expected. The government of Lesotho declared the LSPP as problematic and incapable of supporting and leading the country through its mission to deliver sustainable development. To mention a few reason, the LSPP fail to respond to economic needs of the country because its processes are deemed costly to be afforded by the majority of Basotho.

6.13 Conclusion

Investigations in this chapter suggest that ineffectiveness and inefficiency in the LSPP result from poor institutional structure, shortage of resources, poor socio-economic status, cultural beliefs context, deficiency in legal framework and lack of knowledge of land laws. These findings are very important in this study as they have added value to the understanding of the LSPP in its context.

This narrative facilitates a holistic understanding of the LSPP. This is one of the objectives of this research. This chapter informs analysis of the LSPP through social systems approach and from the perspective of land management paradigm, good governance and RRRs as accepted frameworks in land administration system. However, many aspects of this narrative appear repeated. This is due to data compatibility from multiple sources and perspectives, verifying internal validity.

Chapter 7. Narrative Description of the New Land Administration Authority (LAA) in Lesotho

7.1 Introduction

This chapter presents a narrative description of the LAA from multiple perspectives. It adopts a single case study strategy to facilitate understanding of the LAA in its context. It sets the scene with a brief background to the land administration reform activity in Lesotho. It draws on the geographical, socio-economic and organisational context presented in Section 6.2, instead of repeating it here. The LAA description including the government expectations of the LAA, its vision, strategic goals and objectives are stated. Moreover, the LAA functional departments are explored and then, the key informants' perspectives of the LAA are presented.

In-depth interviews with the key informants (LSPP, Deeds Registry Officers, and MCA Consultants) were conducted simultaneously with data collection for the LSPP which started in 2009. Therefore, data on operation and organisation of the LAA through stakeholders, clients and participant observation was not possible to collect as the LAA was still a proposed organisation during the data collection phase. In such case, documentation including the studies of the Urban Institute (2008) (Technical Report for the Establishment of the LAA) and the Lesotho Government (2010) (Land Act of 2010 and LAA Act of 2010) are major sources of data.

The LAA Act of 2010 was passed in June 2010, during the analysis phase of this research. At the time of writing up this research, the LAA was still recruiting management staff. As such, this research sees the LSPP as the current land administration system and the LAA a proposed or newly established system. Since the establishment of the LAA took place during course of this research, and since it is too new to review in operation, this narrative and subsequent analysis in Chapter 9 is based on the proposed features of the LAA.

7.2 Background to the Land Administration Reform Activity in Lesotho

Sustainable economic growth and internal stability demand land policies and exercises that boost transparency, accountability and confidence in the land administration system (MCC, 2008, Williamson *et al*, 2010). In line with delivery of a good land administration system, international funding agencies such as the United States of America's Millennium Challenge Corporation (MCC) funds land tenure and land administration reform projects in the developing world, including in Lesotho (MCC, 2008).

The Government of Lesotho and the Government of United States of America entered into an agreement to help reduce poverty in Lesotho through economic growth. In July 2007, they signed a $362 million compact (a compact is a large five year grant) (Urban Institute, 2008). In this compact, three areas of importance are addressed. These are the water sector, health sector and private sector development.

Since the date of signing, Lesotho established an agency called the Millennium Challenge Account - Lesotho Authority (MCA). The authority is entrusted with the implementation of the programme and projects directed to the compact objectives (Lesotho Government, 2006). It engaged in preparatory activities to commence implementation. Compact implementation came into effect on the 17th of September 2008 and will come to end in 2013 (Lesotho Government, 2006).

As part of the private sector development component, both parties agreed to a $21 million land administration reform sub-component (Lesotho Government, 2006). Based on these statements, Lesotho, like many other developing countries, embarked on land administration reform as a path towards poverty reduction (Lesotho Government, 2006).

The MCA engaged Swedesurvey Consultants to undertake an inquiry into the LSPP and to identify suitable support to land administration (Swedesurvey, 2006). Based on their reports, the land administration reform activity was selected as part of the MCC component (Urban Institute, 2008).

7.3 The Land Administration Reform Activity Objectives

The land administration reform activity in Lesotho is designed to meet the following objectives: Land policy and legislative reform was the initial step. Then, regularization and registration of land and real property rights of informal land settlements through mass

registration was planned. Training and outreach was also to accompany the process. Institutional reform was then planned to establish the new LAA (Lesotho Government, 2006).

7.3.1 Land Policy Reform

Like any other externally funded development project, the land policy reform was a condition to be met by the government of Lesotho before funds could be released. Land policy reform is usually the starting point in land administration reform (Urban Institute, 2008). Therefore, many laws that are concerned with, and have effect on, the functioning of the current land administration system in Lesotho, were revised (Urban Institute, 2008).

The MCC funded the technical support to assist in the revision of the Lesotho Land Bill 2004, the Land Act of 1979 and the drafting of the new land policy. The new land policy was to promote the use of land as collateral and economic good. This will encourage a dynamic land market and improve the security of tenure for all land holders in Lesotho (MCC, 2008). It was on these bases that the new land policy, in the form of the Land Act of 2010, was enacted.

7.3.2 Systematic Regularization of Land in Urban Areas

Systematic regularization and upgrading of informal settlements in urban and peri-urban areas commenced in Maseru and will expand to other towns after the initial pilot phase (Urban Institute, 2008). This will be facilitated through public outreach and training. Registration and improvement of rural land allocation will also take place after the urban areas have been covered. Community Councils will be assisted to improve their land allocation records and adjudication processes and procedures (MCC, 2008). This part of the reform activities involve registration of land rights and is carried out by the Ministry of Local Government and Chieftainship with MCA funds.

7.3.3 Land Administration Institutional Reform

The institutional and administrative reform of the land sector was another condition for supporting land administration reform that helps reduce poverty and promotes economic growth (MCC, 2008). Failure of the LSPP to deliver effective land administration systems and generate revenue to promote economic growth has led Lesotho to engage in modernization and improvement of land administration system (Urban Institute, 2008). The

activity resulted in the establishment of an effective system capable of capturing complete and reliable land tenure rights throughout Lesotho (Lesotho Government, 2006).

Therefore, a new land administration system called the Land Administration Authority (LAA) was established under the LAA Act of 2010 (Lesotho Government, 2010). This organisation aims to unify cadastral and legal registry records. It is also expected to simplify the land administration work flows and processes, reduce costs towards land administration processes (land registration, transfers, sales, mortgages, allocations, parcelling projects) and perform other land administration related activities tailor-made to the Lesotho context (Urban Institute, 2008). It also aims to be highly technological, in that its land administration processes will be automated and up-to-date land information maintained.

7.4 The LAA Design

The LAA is designed along the model of the Lesotho Revenue Authority (LRA), although the model is somewhat different (Urban Institute, 2008). For the LAA, the two Divisions of the LSPP, namely Land Tenure and Survey, are dissolved and merged with the Deeds Registry Department of the Ministry of Local Government, to form the LAA. These form the three LAA Operational Departments. The implication of these on LSPP is that the Physical Planning and the Land Use Planning Divisions of the LSPP remain with the Ministry of Local Government (Urban Institute, 2008).

7.4.1 Implication of the LAA on Existing LSPP and Deeds Registry Staff

Upon the LAA establishment, the Officers of the dissolved Divisions (see Section 7.3) do not automatically transfer into the LAA. The LAA is designed to operate in an autonomous manner and it recruits its staff. Therefore, the LSPP and Deeds Registry staff members will apply for positions in the LAA and, when absorbed, they will be deemed to have retired from the public service (Urban Institute, 2008). Those who do not apply for positions in the LAA will be deployed into other areas of the public service.

7.5 The LAA Described

Drawing from Section 7.3.3, the LAA is a newly established autonomous organisation of the Government of Lesotho, under the Ministry of Local Government and Chieftainship Affairs (MOLG) (Lesotho Government, 2010). It was established on the 15th June 2010 under the LAA Act of 2010 (Lesotho Government, 2010).

The LAA has five functional departments. Among them, three deal with operations, while two are corporate. Figure 7.1 illustrates the standard organisational chart of the LAA. The LAA is identified through its vision and objectives.

However, in order for the LAA to achieve its vision and maintain identity, it has to operate through a certain legal framework. Its legal framework is the following: Land Act of 2010, LAA Act of 2010, Deeds Registry Act of 1968 and Land Survey Act of 1980 (LAA, 2010).

7.5.1 The LAA Vision and Objectives

Like any other organisation, the LAA has vision, mission and objectives. Its vision is to promote economic growth through provision of security of tenure to the citizens of Lesotho. It will also provide land administration services which are effective and customer friendly (LAA, 2010). Furthermore, the LAA will deliver cost effective services which are efficient. It will also be professionally managed, accountable and operate in a viable manner (Lesotho Government, 2010).

The LAA was also established to support Lesotho in its mission to achieve global agendas such as sustainable development and the Millennium Development Goals (MDGs), while it maintains autonomy. In the context of sustainable development goals, the LAA will help reduce poverty and promote economic growth. At the national level, the LAA has come to be a corrective measure to the LSPP failures (Urban Institute, 2008).

The strategic objectives of the LAA are, among others, to calculate ground rent fees, deliver bills and collect payments to improve land information system in the country and to strive for excellence. It will also advise the Minister and the Government about land administration laws and land policies (Lesotho Government, 2010).

The LAA will undertake the following general objectives as derived from the LAA Act of 2010:

- Undertake surveying and mapping.
- Register all land title through issuing leases to land parcels, register all land transactions requiring registration and maintain a record of these.
- Establish and maintain accurate and complete database containing information on land holding in Lesotho.

- Administer the land registration system through granting consents for the land transactions whenever necessary.
- Reduce the land transactions costs. The intention is to attract local and foreign investment.
- Improve access to credit, reducing barriers to trade and providing information on land holding and land dealings upon request.
- Initiate research for improvement of the efficient functioning of the land administration system.
- Recruit highly skilled personnel and ensure that staff is highly trained and well prepared to conduct the daily operations by applying international best practices in the field of land administration (Lesotho Government, 2010).

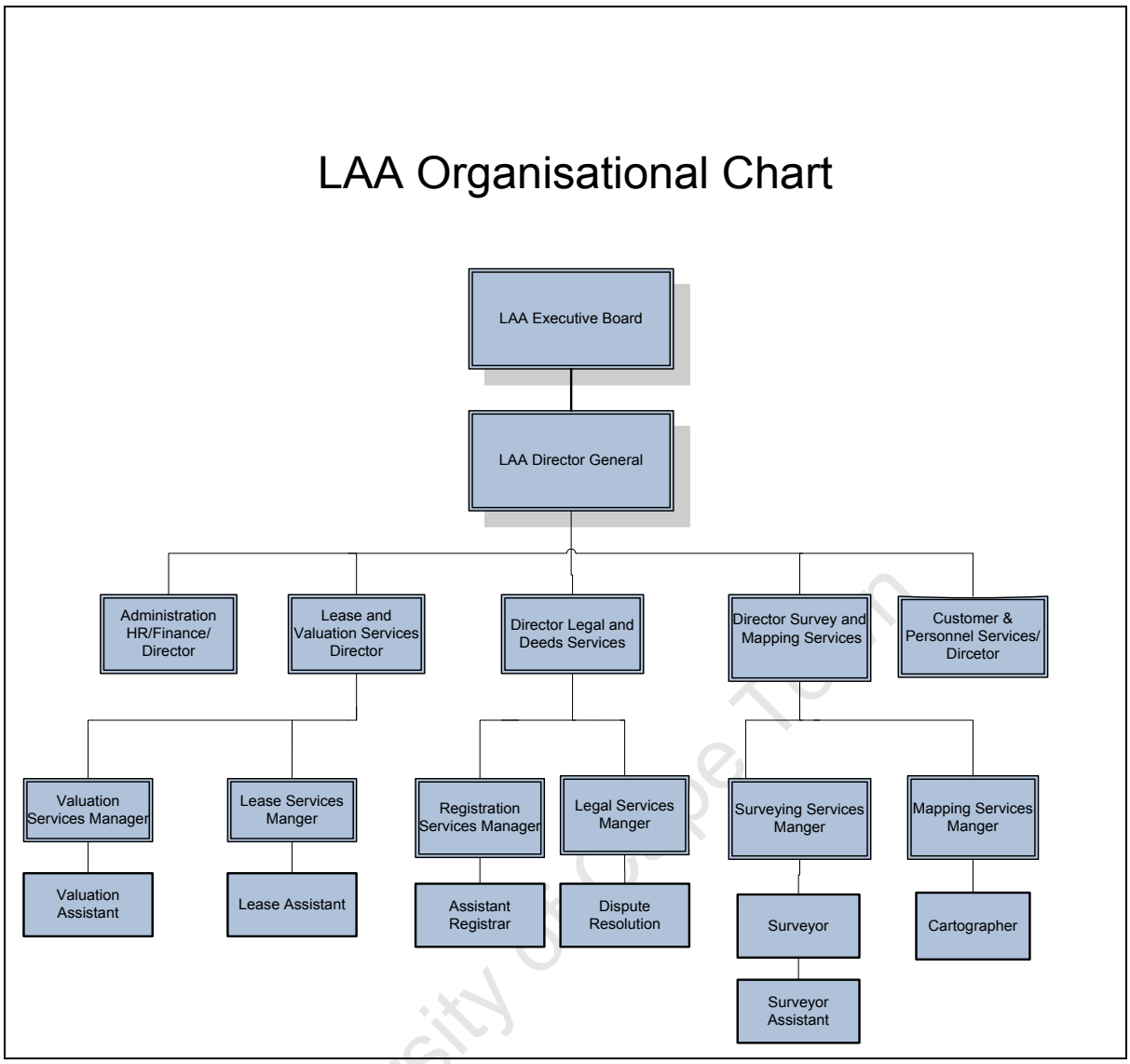

Figure 7.1 Organisational structure of the LAA (LAA, 2010)

7.5.2 The LAA Functions

The LAA will, through its objectives, perform corporate and operational functions. Its main function is to improve the land administration services in Lesotho, aimed at improving access to credit and, thereby, boosting economic growth. Its functions will therefore, be delivered through the five departments as already stated in this section. Figure 7.1 shows the organisational chart of the LAA. Although the LAA land administration services are underlined by corporate functions, this chapter focuses on LAA land administration functions.

The effectiveness of the LAA will be measured in terms of undertaking its functions of the land administration systems (Lesotho Government, 2010). This will be seen in the LAA's ability to provide information on land holding, land dealings provided upon registered land and transactions. Also, in its ability to initiate research aimed at improving the systems performance and effectiveness (Lesotho Government, 2010).

7.5.3 The LAA Operational Departments

The three operational Departments are the Lease and Valuation Service, Survey and Mapping Service and Deeds and Legal Service Departments (LAA, 2010).

The operational functions will be integrated through a well planned and simplified workflows and business processes with appropriate support departments (Urban Institute, 2008). The support departments will be the human resources, finance, and information technology (Urban Institute, 2008).

The Lease and Valuation Department

The Lease and Valuation Department is managed by the Director of Lease and Valuation Services. The Lease Manager and Valuation Manager assist the Director of this Department as shown in Figure 7.1. This department is to process the conversions of customary land holdings (e.g. Form C, CC2 and C2) to leasehold tenure. It will also process land transactions and value land parcels and property. The valuation process is mainly for land tax fees, especially for stamp duties on transfers of land parcels and property rights. Valuations rolls for leased land parcels for Maseru will also be maintained (Lesotho Government, 2010).

The Lease and Land Transactions Processes

Under the Land Act of 2010, the Director of Lease and Valuation Services will issue leases and grant consents to land transactions whenever necessary. He/she will authorize these processes by appending signature on leases and transactions before registration by the Director Deeds and Legal Services (Lesotho Government, 2010).

The Mapping and Surveying Department

The Head of the Mapping and Surveying Department is the Director of Survey and Mapping Services. He/she is assisted by the Survey Manager and Mapping Manager as shown in Figure 7.1. This Department is to provide up-to-date cadastral information, integrate it into

the land information system and to provide this to the public and stakeholders (Urban Institute, 2008). The cadastral index map should be designed in such a way that it allows for an efficient and correct cadastre, updating and quality improvement, and in time, should become legally binding. To undertake all these tasks, the department's main functions are the following:

- Update, complete and maintain the cadastral index map of Lesotho.
- Cadastral surveying and approval of survey plans.
- Subdivide and consolidate land parcels.
- Integrate the cadastral index maps.
- Examine and maintain data.

Furthermore, this department is set to lead in the establishment of the National Spatial Data Infrastructure (NSDI) and define standards and procedures for exchange (Urban Institute, 2008). It also provides and sells geographic information data to clients and stakeholders (Urban Institute, 2008). NSDI will be delivered through the following functional activities:

- National geodetic reference networks.
- National, regional and communal boundary layers.
- Photogrammetry, cartographic works, global positioning systems stations, remote sensing.
- Procurement and update of base maps, orthophotos, etc.
- Licensing private surveyors and companies for carrying out cadastral, engineering and precision surveys (Urban Institute, 2008).

The Deeds Registry Department

The Deeds Registry Department is headed by the Director of Deeds and Legal Services. The Director is assisted by the Manager Deeds Services and the Manager Legal Services (see Figure 7.1). This Department is responsible for registration of land parcel and property rights and land transactions. It also records on the cadastre index map, all leases, consents and other proprietary rights and responsibilities in the land registration system (Urban Institute, 2008). After the processing of leases and land transactions in the Lease and Valuation Department (see Section 7.4.2), the Deeds Registry registers transactions on leases, mortgages and servitudes related to each land parcel. Finally, it undertakes land dispute resolution (Urban Institute, 2008). The processes (registration of leases and deeds) are authorized by the Director Deeds Registry.

7.5.4 The LAA Management and Governance

The LAA like any other agency is governed by the Government of Lesotho and its parent Ministry is the MOLG. It also has an Executive Board. The LAA is under the general supervision of the MOLG. The MOLG responsibilities are to determine the land policy and ensure effective coordination of the policies regulating the land administration system in Lesotho (Lesotho Government, 2010) such as the Land Act 2010 and the Town and Country Planning Act 1980.

The LAA management comprises the Director General (DG) or Chief Executive Officer as the Head of the LAA. The Director General is responsible to the Executive Board. He/she will be directed to provide the Board with the LAA reports. Each functional Department has its own management, each led by the Director (see Section 7.4.2.1) (Urban Institute, 2008).

The Director General's responsibilities are to be accountable for daily operations of the LAA, manage funds, administer and control the LAA Officers, draft and implement all the LAA policies and strategies including the financial and business plans (Urban Institute, 2008 and Lesotho Government, 2010).

The functional Department's Directors are responsible for overseeing and regulating their respective Departments to ensure compliance with the standards and procedures (Lesotho Government, 2010 and Urban Institute, 2008).

LAA is also governed by an Executive Board and this Board is responsible to the MOLG (Lesotho Government, 2010). This Board will consist of a number of representatives from both the government and the private sector including the Non Governmental Organisations (NGOs). They include the MOLG which is the parent Ministry governing land administration system in the country, the Ministry of Agriculture and Food Security, the Ministry of Forestry and Land Reclamation, the Ministry of Trade and Industry, the Lesotho Business Sector, the Association of Bankers, the Association of Surveyors, the Association of Notaries and Conveyancers, Lesotho Housing and Land Development Corporation (LHLDC), Director LAA and the LAA Legal Officer who will be the secretary of the Board (Lesotho Government, LAA Act 2010). However, at the time of writing, the LAA Board Members had not yet been appointed because the LAA has not yet started functioning fully (Urban Institute, 2008).

The LAA Executive Board will be responsible for the governance and overall policy making and changes where necessary. It will observe that the LAA adheres to good governance principles. It will also make executive decisions directed at improving performance of the LAA (Urban Institute, 2008). Moreover, the Board will ensure that the LAA activities are monitored and evaluated (Lesotho Government, 2010 and Urban Institute, 2008). The LAA will also advise on procedures necessary for land administration processes, such as land transactions applications in a manner enabling the system to operate and carry these functions efficiently. The Board will also determine the different fees levied for various land administration processes in the LAA, while also determining necessary exceptions where and when required (Urban Institute, 2008).

7.5.5 Government Expectation of the LAA

The LAA is expected to lead Lesotho to sustainable economic growth. As such, its purpose will be to support the Government of Lesotho and the private sector in land administration and development (Urban Institute, 2008). Its operations will promote economic growth. For instance, it is expected that the number of registered land parcels and property will increase as security of land tenure improves, and that the land market will improve to reflect land as an economic good (Urban Institute, 2008, MCC, 2008). The government, therefore, expects that the LAA will improve the existing situation, in contrast with the LSPP, which failed to promote the land market. The LAA is also expected to minimise land disputes and indirectly support alleviation of poverty (Urban Institute, 2008). Finally, LAA is expected to provide

the country with Spatial Data Information (SDI) as documented in its objectives while also bringing the Lesotho Cadastral System to that of international standards (Lesotho Government, 2010).

7.5.6 Funding the LAA

A land administration system should be financially sustainable in order to function effectively (see Section 4.4). Therefore, for the LAA to perform its functions and be sustainable, it requires long term investment and support. Therefore, it will seek to achieve this by generating funds from revenue collected from fees and ground rent levied for service provision, grants from external sources through donations or loans. It also assumes investment of some of its revenue (Urban Institute, 2008, Lesotho Government, 2010).

However, the Government of Lesotho is expected to fund the implementation phase of the reform activity until such time that the LAA becomes financially sustainable (Urban Institute, 2008, Lesotho Government, 2010).

7.5.7 The Centralisation and Decentralisation of the LAA

The LAA Head Office is in the capital town, Maseru. It will also have a representative hired on contractual terms in each of the ten Districts of Lesotho (Urban Institute, 2008). The representative must be a managerial and operational authority. These Satellites Offices will receive and review lease and land dealing applications within their Districts and will advice local Community Councils and give advice to the LAA customers on the procedures and other requirements for accessing the different types of LAA products and services, (Urban Institute, 2008).

7.6 The Key Informants Perspectives of the LAA

In section 7.1, it is stated that interviews with the Key Informants were conducted to investigate their views concerning the proposal to establish the LAA. The interviews were conducted with Key Informants whose divisions will dissolve to form the LAA, and those whose divisions will be left in government administration under the MOLG, and finally the land administration reform activity consultants (PIU) (see also Section 5.4.2).

7.6.1 Key Informants whose Divisions are to be dissolved to form the LAA

The implication of the LAA on this group has been stated in section 7.3.1, in a nutshell, the LAA will recruit its staff and the affected LSPP Officers will have to apply and compete to secure jobs in the LAA.

Bitterness was expressed by these Key Informants. They stated that they assumed they would automatically transfer to the LAA as they bear a wealth of experience in the lease, survey and deed registry processes. They further claimed they worked with compassion under harsh conditions, yet the LAA does not recognise them important. They are pessimistic about securing jobs in the LAA, as the high technical skills (IT/IS based skills) emphasised by the LAA structure, make them feel totally inadequate. They are short of such skills. They also feel that LAA was not designed to benefit them or include them (Key Informants Interviewees A, B, C, D, E, F, G, H, I, J, K, L and P, 2009).

Furthermore, they indicated that opportunities such as the ones in the LAA are very rare. They expressed bitterness that they waited many years for such opportunities which would bring about better benefits compared to those in the public service. It is therefore, disappointing to know they will have to compete to get into the LAA (Key Informants Interviewees A, B, C, D, E, F, G, H, I, J, K, L and P, 2009).

7.6.2 Key Informants whose Divisions remain in government administration under MOLG

Bitterness was expressed by the Key Informants whose Divisions fall outside the LAA boundaries (LSPP Physical Planning and Land Use Planning Divisions). They expressed some frustrations over their Divisions being left out of the reform process. Their main concern is that their Divisions suffer inefficiencies as badly as the dissolved Divisions. They also believe their functions are interrelated to those of dissolved Divisions and so they fail to comprehend why their Divisions were left out, and without promise of incorporating them in future (Key Informants Interviewees M, N and O, 2009).

This group also faces institutional problems. They claim that even with the land use settlement plan processes undertaken by their Divisions; the implementation is very slow because of lack of support by the government (shortage of capital resource). They admit that it has been their wish to have a better system. They feel neglected, as though their division's activities have no importance to the country's economic development. The changes in the

LSPP therefore, have left them resentful and disillusioned (Key Informant Interviewees M, N and O, 2009).

7.6.3 Key Informants who are the Land Administration Reform Activity Consultants

The MCA consultant's perspectives of the LAA were gathered to gain understanding of how LAA came into being, how it is to operate and the benefit to Basotho. Their perspectives (Key Informants Interviewees Q, R and S, 2009) are found similar to those of the Urban Institute (2008) and the Government of Lesotho (2010) as documented throughout this chapter. There is thus a saturation of data and their views are thus not reported separately.

7.7 Conclusion

This chapter describes the LAA as seen from multiple perspectives. One of the objectives of this research is to facilitate a full understanding of the LAA as part of the single case study through the use of single case strategy. This chapter informs the analysis of the LAA in Chapter 9 through social systems tools and the best practices standards frameworks of land administration (land management paradigm, principles of good governance and the RRRs).

Chapter 8. Analysis of the Current Land Administration System – LSPP

8.1 Introduction

This chapter analyses the current land administration system in Lesotho (LSPP) using the theoretical and analytical frameworks discussed in Chapter 3 and Chapter 5, and is informed by the case study narrative description of the LSPP as documented in Chapter 6. However, there are issues raised in Chapter 6 which may not form part of the analysis, but were important in contributing understanding of the case in its context. In this analysis, the structures and processes of the LSPP are modelled using soft systems methodology (SSM) tools and viable system modelling (VSM). These systems tools are used to conceptualise the LSPP as viewed from different perspectives. This contributes to understanding of the system, while also facilitating diagnoses of the current problems in the LSPP with a view to directing improvements, where required. Furthermore, the LSPP is analysed using the land management paradigm (LMP), good governance and RRRs frameworks in order to analyse how the LSPP design compare to international best practices in land administration system. The analysis facilitates analytical triangulation. Only parts of these analysis tools are adopted based on their suitability in addressing the research questions.

8.2 The LSPP in VSM

Unlike the LSPP organisational structure presented in Chapter 6 (see Figure 6.3) which only indicates line management and the person responsible for system performance and failure to perform, the VSM diagrams of the LSPP fill the gap in analysis and design. VSM analyses the structures, processes, relationships and communications within a system in order to assess effectiveness and viability (see Sections 2.2 and 5.6).

The first step in modelling using VSM is identification of the System-In-Focus. In this case it is the LSPP. Figure 8.1 and Figure 8.2 present LSPP using VSM as revealed through the strategy of single case study research. Figure 8.1 shows the System-In-Focus and the hierarchy of systems both above and below the System-In-Focus and the relationship of the System-In-Focus to other systems at the same level. Figure 8.2 provides an in-depth analysis of the LSPP System-In-Focus (VSM Diagnostic Chart 2) and the relationships between the elements of the environment, operations, management, regulators and audit mechanisms.

The Operations of the System-In-Focus are Land Tenure, Survey, Physical Planning and Land Use Planning (Figure 8.1 and Figure 8.2). These are modelled as sub-systems since they form the four Divisions of the LSPP (Figure 8.2). Each sub-system is equal in status and relationship to the LSPP System-In-Focus; they all share a common level of recursion below the LSPP System-In-Focus. Each Operation has a Regulator. This person or body provides the link to Management of that system or sub-system. The Regulator of the LSPP System-In-Focus is a combination of the Chiefs of four LSPP Divisions. Each Operation is managed. The Commissioner of Lands is the Head of the LSPP and hence is its Management. The context in which LSPP operates is called its Environment.

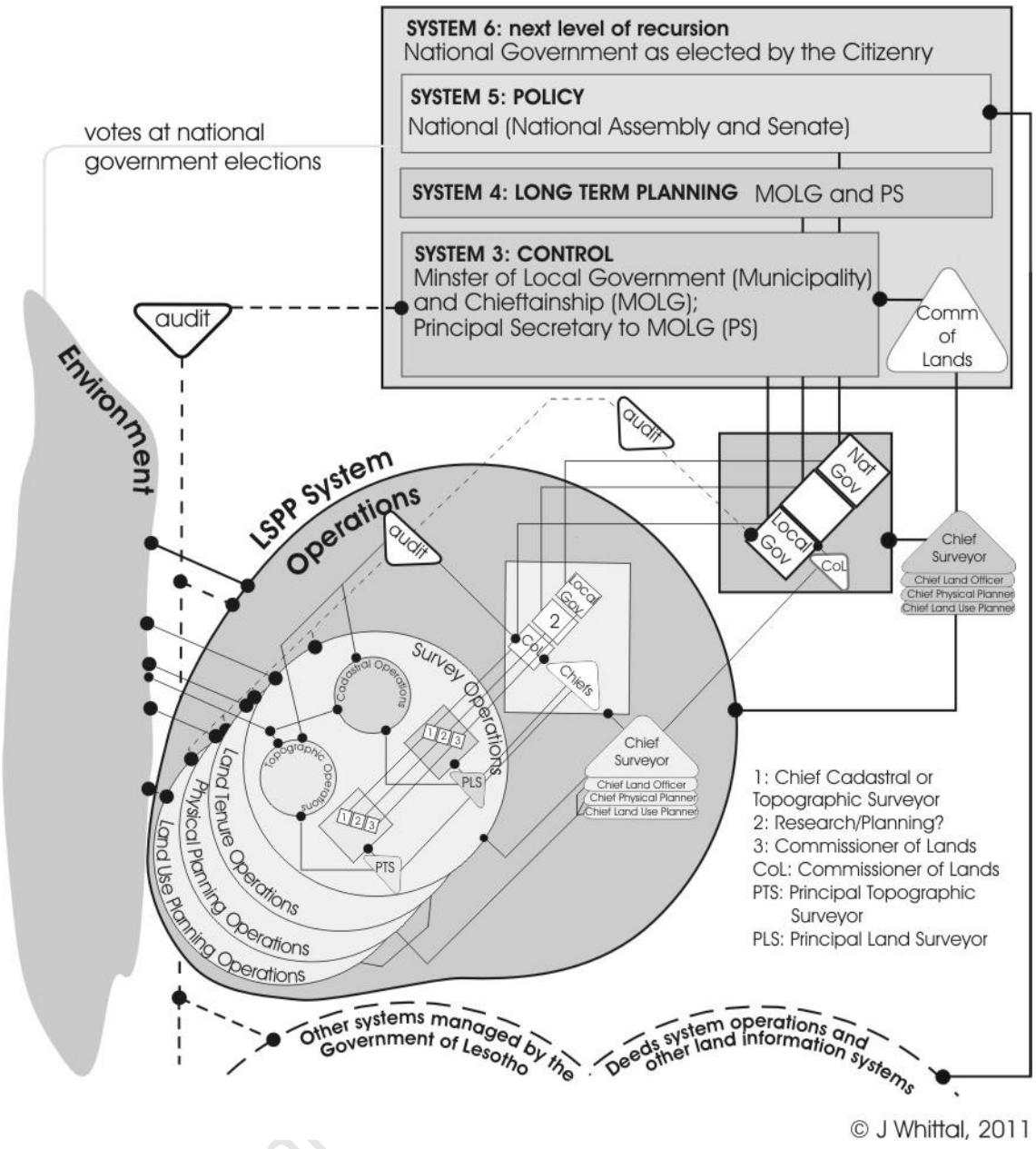

Figure 8.1 VSM Chart 1 of the LSPP System-In-Focus with its relationship to its sub-systems and other systems at the same level

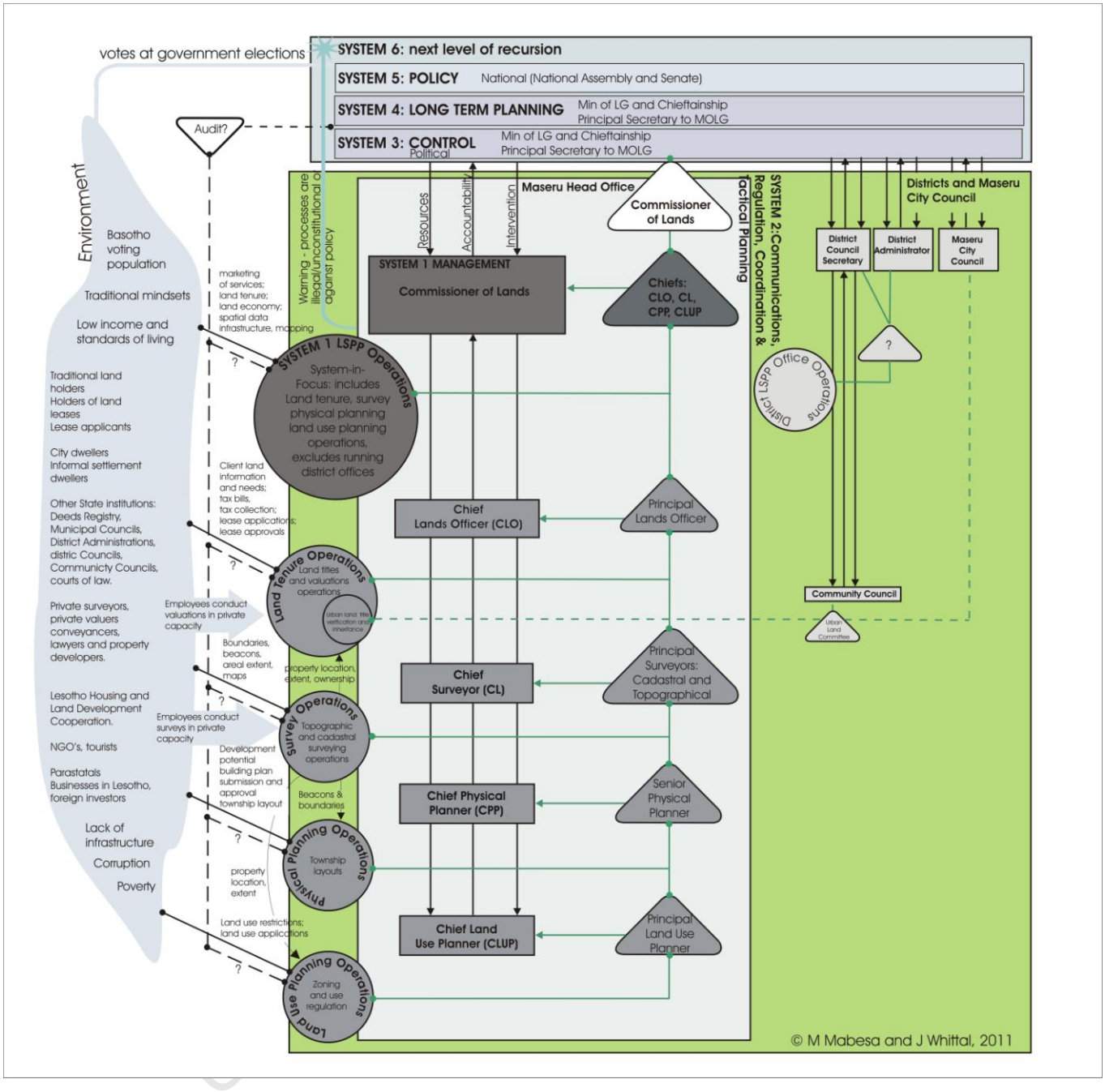

Figure 8.2 Viable Systems Model Diagnostic Chart 2 of the LSPP: the LSPP System-In-Focus and its environment, operations, management, regulators and audit mechanisms, as well the relationships between these elements.

8.2.1 Diagnosis and Analysis of the LSPP

Diagnosis of the LSPP system is the process of understanding of the problems and challenges which inhibit the system's viability. This is undertaken through reflection of the VSM of LSPP derived from the case study process and narrative in Chapter 6). This is reflected through LSPP VSM diagnostic Chart 2 in Figure 8.2. The following diagnosis and analysis is

based on the LSPP narrative in Chapter 6 and modelled in LSPP VSM (see Figure 8.1, Figure 8.2 and Figure 8.3).

System 1: Operations and Management

The Operations in a system converts inputs into outputs (see Figure 8.1 and Figure 8.2). Operations also have their own language for what they call these inputs and outputs. Translation between the language of one system and the language of another is required when communicating across boundaries. In the Operations of the Land Tenure Sub-system, for instance, a Form C coupled with copy of a passport is received from a client. The Land Tenure Operations translates this input into a lease application which is then converted into a lease output. The same input document in Physical Planning Operations is translated into an application for a planning permit which is then converted into a planning permit output.

The VSM reveals that the operations of the LSPP System-In-Focus are not conducted in a holistic manner. Although there is communication between the sub-system operations (see Figure 8.2), this is not facilitated through any sort of meeting schedule at which applications are tabled and information shared (see Sections 6.7.5, 6.7.4 and 6.11). Each sub-system operation conducts its business in a vacuum and only consults another operation if information cannot be obtained (see Section 6.7.5). The operations of Physical Planning and Land Use Planning have, for a long time, overlapped and even conflicted (see Section 6.5.4).

A major problem with the operations is conflict of interest and moon-lighting. Employees in the operations conduct private work, sometimes in office hours (see Section 6.6.2). This is shown as a link between the environment and operations in Figure 8.2. This work is often of the same type as the employee is routinely employed to conduct for the LSPP.

Each operation has its own management structure but there is no executive body coordinating the efforts of the different sub-systems and their operations. The Commissioner of Lands is the only person in a position to coordinate affairs being the Head of the LSPP. Although the VSM cannot portray all information, the Commissioner of Lands is immersed in land administration processes as final signatory in land transactions handled by the sub-systems (see Section 6.5.1 and 6.7.3). The incumbent is particularly involved in the Land Tenure operations. Processes such as granting of leases as titles to land require the Commissioner of Lands to append his/her signature as authorisation. The over-involvement of the Commissioner of Lands in operations adds to process delays and also weakens the capacity of

the management (see Section 6.7.3) of the System-In-Focus. The role of this official is stretched between operations, management and regulation. The tasks associated with this position are already over-ambitious to the detriment of the efficient functioning of the system as a whole. The functioning of the LSPP as a viable system is thus in jeopardy.

In VSM, no operations of the System-In-Focus, the LSPP, should be undertaken in higher level Systems 3, 4 and 5 (see Figure 8.3). Following the principle of structural recursion, there are operations conducted at these levels, but they are part of the higher level systems (see Section 6.7.3). These systems are those of senior management of the LSPP. They should oversee the operations of the LSPP providing guidance, planning, resources and control in order that Systems 1 and 2 can perform optimally, efficiently and effectively (see Figure 8.3). Processes in the Operations of System 1 should be signed off at that level of management and not at the senior management level (Systems 3-5).

There is confusion at the management levels of operations undertaken by the District Offices (see Figure 8.2). Urban land title verification and inheritance operations are regulated by the Urban Land Committee, which reports to a Community Council which in turn, is equipped by and responsible to a District Council Secretary (see Sections 6.2.4 and 6.10) falling under the same System 3 Control as the rest of the LSPP system. In Maseru, urban land title verification and inheritance operations also report to the Urban Land Committee which reports to the Maseru City Council (see Section 6.2.4) who then reports directly to System 3 Control. In addition, the Operations involved in running of District Offices (i.e. hardware, computers etc.) are managed separately from the LSPP system by the District Council Secretary and the District Administrator. The resources required to run District Offices are therefore, supplied through a different management structure to that managing the actual operations of these Offices (see Sections 6.4.3 and 6.10 and Figure 8.2).

System 2: Communication and Regulation

Offices of the LSPP can be found in each of the ten Districts in Lesotho including the Head Office in Maseru. Similar processes are undertaken at the early stages of some of the operations, but leases and land transactions must finally be processed at Head Office. The aim of decentralisation is to serve the Basotho living in the rural areas better (see Section 6.4.3), but, this has adversely affected the performance of the LSPP. Figure 8.2 illustrates the LSPP operations straddling the Maseru Head Office and the District Offices and lack of

uniformity in the management of some workflows at District level. Confusion as to line management and reporting results from this (see Section 6.7.3).

The reported lack of an adequate IT system (see Section 6.7.4) to facilitate coordination and communication coupled with the lack of meetings and monthly reports between operations contributes to the predominant use of informal face-to-face communication. Although informal communication and social networking is very important in any organisation, its use as the main aspect of communication in the process of business is not recommended. Such communication results in ineffectiveness and inefficiency, as well as poor levels of accountability and lack of transparency, both internally and to the clients. Unacceptable levels of power and prejudice can play a role in business processes (see Sections 6.5.1, 6.7.3 and 6.11), which counters the benefits of a constructive bureaucratic process.

The coordination between the operations of Physical Planning and Land Use Planning has been poor and these operations have overlapped (see Section 6.5.4). It is only recently that the management of these operations set out to try to establish their operational differences using the underlying policies guiding their activities. Land Tenure operation also reported a serious backlog of lease applications that need subdivision and also authority for change of use (see Section 6.7.5); Physical Planning, as the responsible Division, does not have knowledge of these issues (see Section 6.7.5).

Land Tenure operations staff report that they cannot manage the volume of applications as they are understaffed (see Section 6.5.1). Normally, only applications whose clients come several times to the office are processed (see Section 6.5.1). The lack of process flow in LSPP is commonly reported. There are bottlenecks between the Operations, the Management (including senior management), and the Regulators (see Sections 6.5.1 and 6.7.5).

Not only should communication channels exist between the System-In-Focus, the LSPP and its embedded and oversight systems, but these should also be fast enough to keep up with the rate at which variety is changed in the Environment and/or in Policy. Change of variety in the System-In-Focus needs to be dynamic in order to maintain stability. Communication channels in LSPP need to be improved in order to accommodate higher capacity to transmit more information and to do this with increased speed (Hilder, 1995).

Regulation of the System-In-Focus as it interacts with Systems 3-5 is conducted by the Commissioner of Lands. The Commissioner of Land's role is thus a dual management and

regulation role (see Section 6.4.2), apart from the role of overseeing the day-to-day operations, as already mentioned (see Sections 6.5.1 and 6.7.3). The regulation of the LSPP is conducted by the individual Chiefs of the sub-systems (see Sections 6.4.2, 6.5 and Figure 6.3), and not by a collective body or committee. The regulation of the LSPP is therefore, undertaken piecemeal and not in an integrated fashion. The four Principals are the Regulators for the four Sub-systems (see Section 6.5 and Figure 8.2).

The internal and external auditing route between the Sub-systems, the System-In-Focus, and Systems 3 and 4, appears to be minimal (see Sections 6.5, 6.7.1 and 6.7.3). If there are a set of goals and performance measures for each Sub-system, what internal and independent measures are there in place to ascertain whether these are met and to provide feedback for further change in the System-In-Focus? If the auditing functions are in the form of internally produced reports, these are seen as regulation and not part of the audit process.

System 3: Control

System 3 facilitates integration of the lower system level and the higher system level. System 3 is the arena of political control and overseeing of the System-In-Focus, the LSPP. The Ministry of Local Government (MOLG) and the Principal Secretary (PS) of the MOLG perform this role. However, some land administration processes are the responsibility of the Minister. The Commissioner of Lands and the Minister are involved in lease and land transaction processes (see Sections 6.7.3 and 6.5.1). When managers are involved in Regulation and Operations (as the Commissioner of Lands is), they have no time to manage the system (see Section 6.7.3). Instead, much time is spent on immediate operational problems rather than making time to manage resources and to coordinate and control the Operations. Land transactions such as transfer of land and property rights, mortgages and change of use, involve Ministerial signature (see Section 6.7.3). This causes delays in the operations of the LSPP and encourages informal land transfers which operate concurrently but independently of the formal LSPP system (see Section 6.8.3), threatening the sustainability of the system. With a greater focus on the customer's needs and the current and future environment, such inefficiencies could be addressed.

System 4: Intelligence, Planning and Research

System 4 encompasses the intelligence in the system, and includes research, planning and even marketing. For the LSPP system, the responsibility of System 4 is unclear. These

functions could be performed by the MOLG and the PS, but in a developing country such as Lesotho, which is lacking in capacity, the functions of research and planning for the future seem to be left to occur on an *ad-hoc* basis.

The MOLG and the PS are responsible for drafting strategies which facilitate the implementation of the policies made by the national government. The Minister and the PS have to make sure that the Operations of the LSPP (through the manager, the Commissioner of Lands (CoL)) meet the legal and corporate requirements which flow from the policy directive (see Section 6.4.2). The CoL is accountable to the MOLG, and the MOLG in turn must provide resources and support. Monthly reports are produced by the LSPP including the number of registered leases and the number of registered land transactions (see Section 6.5.1). An independent audit function as modelled in VSM appears to be lacking. If serious underperformance of the LSPP occurs, then National Government (System 5) may be called upon to intervene.

However, in LSPP, the MOLG and the PS are also directly involved in the operations of the LSPP and are the final signatories to land transaction processes such as consents to land and property transfers and mortgages (see Section 6.6.2 and Figure 8.2). This causes process delay as many actors are involved. The capacity of the LSPP's higher management to audit, monitor, coordinate and control the LSPP is thus jeopardised. In the context of VSM, LSPP processes should be signed off within the operations of the System-In-Focus and not at the level of management. Involvement of management in operations inhibits the ability of the System-In- Focus (LSPP) to function viably and effectively.

System 5: Policy

Land policies in Lesotho are the function of National Government (National Assembly and Senate) (see Section 6.2.2 and Figure 8.2). Policy debate is lacking and System 5 is not creating a unique and desirable identity for the LSPP, as it should. Lesotho, being a developing country, tends to follow international trends in policy rather than create land policy from scratch. The use of consultants is often employed as a strategy to cope with policy-level decisions due to lack of internal capacity.

Poor communication of policy has contributed to the ineffectiveness of LSPP (see Sections 6.7.2 and 6.7.7 and 6.13). The allocation of resources for land administration operations flows from National Government priorities, which flow from policy. However, if the

National Government has financial problems, budgets are not forthcoming (see Section 6.7.1) from System 3 (directed by System 5) and insufficient operating capital compounds the lack of human resources. Any viable system needs capacity to operate, regardless of good policies on paper, and so the Government of Lesotho can be seen to be contributing to the ineffectiveness of the system. In VSM terms, the enabling environment created by good policies is an amplifier of variety from System 5 through to lower level Systems. This is not occurring as it should in the case of the LSPP management, contributing to the loss of identity of the LSPP, the System-In-Focus (Hilder, 1995).

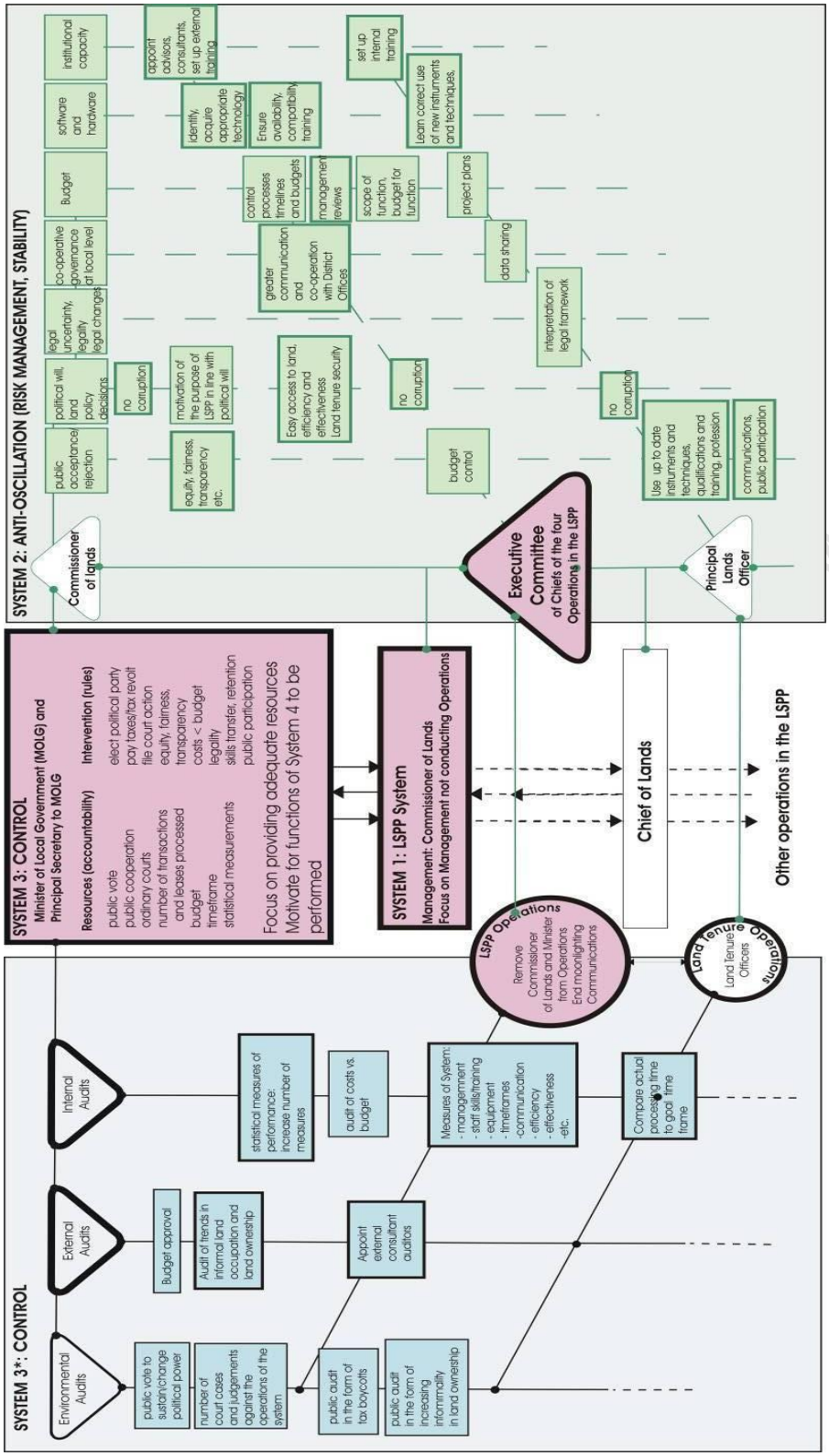

Figure 8.3 Re-design - Audit and Anti-Oscillation Chart 3 of VSM of LSPP with recommended changes highlighted in thicker Lines (Mabesa and Whittal, 2011)

A Summary of the Analysis of the LSPP, Revealed through VSM

- The VSM in this chapter has provided a tool for modelling the LSPP structures and processes and assess its design in line with the goal of sustainability. The VSM modelling process, underscored by the case study data, has revealed the underlying structures and operations of the LSPP.

- This investigation supports the results of a prior study into the use of the single case study strategy and VSM in cadastral systems research to good effect (Whittal, 2008). The flexibility of the VSM in the modelling of organisations is demonstrated in Figure 8.2 which accommodates the operations at district level and highlights confusion of management roles.

- The VSM informed by the case study narrative in Chapter 6, finds LSPP ineffective, not self-sustaining, poorly designed and unable to respond to its changing environment (see Section. 8.2.1and Figure 8.3).

- Based on the VSM findings, the LSPP does not need a complete change. Improvements involving policy change, IT/IS, processes design, structural and management can be incorporated in its design (see Section. 8.2 and Figure 8.3).

- The goals of delivering security of tenure through an efficient and effective land administration system, of which an important part is a computerised land information system, could be provided for at the particular level of recursion as highlighted by the VSM of the LSPP. Taking into consideration that most land reforms are information technology driven, this could take place using the existing structures of the LSPP and thus eliminate the need for a radical reform of all aspects of the organisation.

- Systems 3-5 provide the intelligence to allow the System-In-Focus to respond to a changing environment. The delicate balance between the System and its environment should be maintained by attenuation and amplification of variety in the system (see Figure 8.3). Without this, the system is not alert to environmental change and will be unable to adapt. The balance of variety will not be maintained and the LSPP will therefore, be unsustainable. Without an adequate intelligence function the autonomy of the System-In-Focus, the LSPP, is jeopardised (Hilder, 1995). Since the

intelligence function is lacking at worst, or inadequately performed at best, the LSPP has no prospect of being able to meet the needs of a changing Lesotho society.

- The results of this investigation suggest that ineffectiveness and inefficiency in LSPP is a result of poor design of the LSPP institutional structure; confusion of management roles with operations roles; confusion and poor coordination between operations; inefficient process design; poor policy transmission through shortage of resources; and poor communication channels. The LSPP also requires a number of auditing functions both internally and externally in order to enhance its performance. However, with some changes, as shown in Figure 8.3, it would be possible for the system to function well.

- Proposed areas for change are shown in Chart 3 of the VSM for the LSPP, and are indicated with thicker borders and in the text of that diagram (Figure 8.3). The modelling process indicates that the LSPP can still function effectively even under the government administration.

8.3 Analysis of the LSPP Using Soft Systems Methodologies

Soft Systems Methodology (Checkland, 1990) is a system thinking tool (Jacksons, 2003) and one of a suite of methodologies found suitable to guide and analyse cadastral systems research (Whittal, 2008) as reflected in earlier chapters (see Sections 2.2, 3.7.2 and 5.6.2). Systems thinking tools like SSM are underscored by case study research (Whittal, 2008), and so this section refers back to the case study narrative presented in Chapter 6.

The previous Section 8.2 has analysed the structures, processes and viability of LSPP using VSM. This section uses SSM to analyse the historical, cultural, social and political situation of the LSPP. Checkland's (1990) SSM concepts are used to guide the inquiry into the problem situation in LSPP. This facilitates the structuring of the problem situation while adding value to the rich description of the system (narrative of Chapter 6), thus guiding action to improve the system. The analytical tools of SSM (see Section 5.6.2 and Figure 5.2) are used.

The LSPP in Rich Picture

The rich picture in Figure 8.4 depicts the unstructured view of the situation in the LSPP and the relationships between issues as derived from the case study narrative. It is a basis for understanding the complexity of the problem situation in the LSPP and is likened to mind mapping of the LSPP situation as observed from multiple perspectives. Several structural and social factors which contribute to the problem situation in the LSPP are indentified along with key stakeholders (see Figure 8.4). The CATWOE elements and human activity systems models relevant to the problem situation in the LSPP are extracted from this picture.

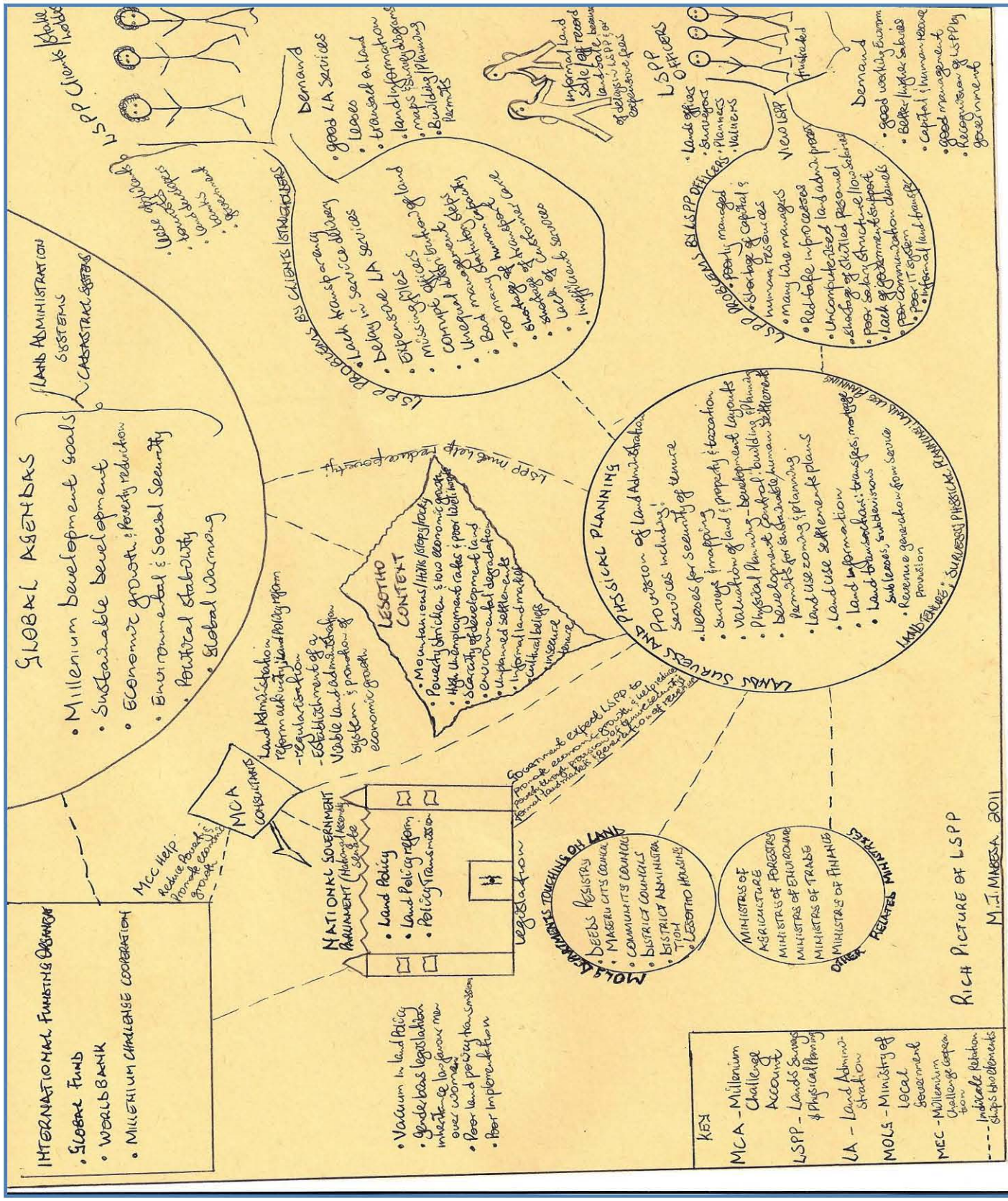

Figure 8.4 The rich picture of the LSPP

The LSPP CATWOE Elements

Table 8.1 presents the LSPP CATWOE elements produced from the LSPP narrative (Chapter 6) and the rich picture (Figure 8.5). The development of the CATWOE elements facilitates the structuring of the problem through the development of human activity systems models relevant to the problem situation.

CATWOE ELEMENTS	LSPP IN CATWOE ELEMENTS
C- Customers	LSPP land administration users and processes applicants: lease, building permits, land transactions, tourist guide maps, title holders and non-title holders. Stakeholders: the Maseru City Council, Millennium Challenge Corporation, LHLDC, District Administration, District Councils, banks, housing financers, other Ministries dealing with land, and land and property developers.
A - Actors	The National Government – Parliament (National Assembly and Senate), MOLG, LSPP employees responsible for the functioning of LSPP: commissioner of lands, chief lands officer, chief physical planner, chief surveyor, chief land use planner, lands officers, surveyors, land technicians, physical planners, legal officer, private surveyors, principal technical officers, drafts people, lands registry clerks, senior accountants, human resources staff.
T- Transformation	The processes or operations of the LSPP that turn input into output such as customary land tenure titles into leases; leases to land dealings property information into valuations; valuation to valuation rolls; and survey data into maps and survey diagrams and land information provision. Also processing of land transfers, mortgages, sub-leases, subdivisions, ground rent tax collection.
W- World View	Involves LSPP as a part of the broader process of socio-economic growth, sustainable development and delivery on Millennium Development Goals with respect to poverty reduction and sustainable human settlements. Embedded is the belief that these initiatives provide for effective functioning of LSPP as a land administration system which can steer economic growth. Failure to do so results in poverty, low social security, low political

	stability and facilities, poor human settlements and bad development.
O - Owners	The Basotho people, people capable of threatening the effectiveness of the system, the clients, users and non-users of the cadastral system, key informants, policy makers, victims of in-effectiveness of the system. Clients are capable of forming informal market outside the system rendering the formal system ineffective.
E - Environment	The environment of the LSPP includes existing constraints outside of the LSPP which directly or indirectly affect the LSPP's environment of operation. These are the limited capital and human resources; changing government due to elections, lack of political support for the system; and structure of the system within higher government structures and in relationship to other systems at the same level.

Table 8.1 The LSPP CATWOE

8.3.1 Relevant Human Activity Systems of the LSPP Problem Situation

Relevant human activity systems models give an insight into the problem situation and facilitate the structuring of the situation expressed in the LSPP rich picture and CATWOE elements. Based on shared world views and guided by the rich description and rich picture, five systems models relevant to LSPP situation are identified as the political system, social system, economic system, technical system, legal system and organisational system. These systems models are used in the two streams of analysis (see Figure 8.5, Figure 8.6 and Figure 8.7.

The Political System Model

Political will and support are central and core roots of an effective cadastral system (Williamson, 2001). A well-established political system enables a bureaucratic organisation such as the LSPP to function optimally. The National Government (National Assembly and Senate), the Minister and Principal Secretary to the MOLG are key actors in the political system of the LSPP since they are responsible for governance, overall policy making and policy communication, as well as the supply of resources. It is also the ultimate responsibility

of the Lesotho government to manage land information as well as build effective land administration infrastructure (see Section 6.2.2).

In the case of LSPP, the government responsibility is to allocate sufficient resources and ensure accountability of those to facilitate effectiveness and sustainability of the LSPP. However for the LSPP, the capital and human resources are reportedly lacking. This is indicative of a lack of political will and support in LSPP (see Section 6.5).

The Social and Economic System Model

Land administration systems theory emphasises the importance of the social and economic contexts within which the cadastral system is embedded. The effectiveness of these systems is dependent on the socio-economic environment in which they operate (Williamson *et al*, 2010). The social and economic environment within which LSPP operates is declared very poor (see Section 6.2.3). This socio-economic status of the country inhibits the effective functioning of LSPP (see also Section 6.2.3) The relevance of the social and economic environment to the effectiveness of land administration systems has led to the choice of social and economic system model in structuring the socio-economic situation in LSPP as expressed in rich picture and in the narrative (Chapter 6). For the LSPP to be able to help reduce poverty, provide economic growth and social security, the social and economic context within which it operates should be sufficiently viable. As shown earlier, LSPP has failed to promote economic growth and help reduce poverty (see Section 6.8).

The Technical System Model

The technical system model is relevant in understanding the LSPP as land administration systems require IT/IS to provide efficient, transparent and automated land administration processes (Williamson *et al*, 2010). The LSPP like any other cadastral system uses IT, but it is limited to survey processes, word processing and printing of forms and typing of lease drafts by the typing pool in the Division of Land Tenure (see Section 6.7.6). Automation of processes through IT/IS in LSPP should lead to an increase in the effectiveness and efficiency of the technical system. This in turn would stimulate transparency, reduce the time to delivery of land products, as well as provide for improved communication channels and monitoring of the system (see Section 6.5.1).

The Legal System Model

The legal framework within which land administration systems operate is crucial to effective functioning of the system (Williamson *et al*, 2010). The LSPP functions through various land laws such as the Land Act of 1979 and the Town and Country Planning Act of 1980 (see Section 6.4.1). Without an adequate legal system, the LSPP would lack legitimacy and legality of its operations.

The Organisational System Model

The organisational structure, processes and management are determinants of effective cadastral systems (Williamson *et al*, 2010). The LSPP structure is currently designed as a decentralisation model. The intention of this design was to facilitate access to land resources so as to encourage use of the land administration system by all Basotho. Many of the organisational aspects of the LSPP system are analysed effectively using VSM in the previous section. The analysis of these aspects in SSM is likely to be less effective, but complimentary.

8.3.2 The LSPP in the Two Streams of Analysis

Two streams of analysis tool of SSM are used to facilitate learning and debate about LSPP. In addition, it generates ideas for those responsible for action to improve the problem situation. Owing to its complexity, the two streams analysis diagram is slip over three pages (see Figure 8.5, Figure 8.6 and Figure 8.7).

The Cultural Stream of Analysis

The cultural stream of analysis expresses a problem situation using three analysis phases: the intervention (analysis one), the social analysis (analysis two) and the political analysis (analysis three) (see Section 3.7.2). Analysis one, falls beyond the scope of this research. This is because the underlying objective of this research states that the cadastral system is observed and analysed for understanding, not for intervening, although the results of this analysis could be used for that purpose. Analyses two and three analyses the social and political aspects of the situation in the LSPP and seeks to provide a culturally visible change reflecting in the political, social, economic, legal and organisational systems (see Figure 8.5).

The LSPP in Analysis Two (the Social Situation)

Drawing from the rich description (Chapter 6) and the structured problems in the cultural stream of analysis (Figure 8.6) it is clear that a number of interrelated social factors do affect the operations of LSPP as a system.

The Economy and Poverty

Lesotho is characterised by high unemployment rates, poverty and low salary structures for public servants (see Figure 8.6). These economic factors in Lesotho have profound social consequences. Income levels are very low and many Basotho are subsistence farmers living from hand to mouth. Any cost incurred in the use of the land administration system is often considered unaffordable (see Sections 6.6.3, 6.5.1, 6.7.7). Land registration and land transfers are considered expensive (see Section 6.5.1), but additional costs are also incurred such as in transport to towns or Maseru to follow up on applications (see Section 6.12). The relevance of the LSPP in terms of its structure, processes and products, needs to be viewed in the light of the poor national economy and the individual poverty of the Basotho people.

The Legal Framework

The legal system in LSPP is poorly established. Land policy vacuums (see Section 6.7.2) and overlapping laws characterise this aspect of the LSPP (see Section 6.3.1). The duality in the legal system as reflected in the legitimacy of customary and informal land holding is not sufficiently modelled in land laws. This results in a duality in land tenure types within Lesotho.

The IT/IS Usage

The LSPP is expected to be an IT/IS oriented system. However, the technical system model in LSPP is weak. This has been commented on in VSM analysis (see Section 8.2.1) and will not be repeated here.

The Organisational and Human Resource Capacity

The organisational system model in the LSPP as developed in Section 8.3.1 is not well established in the LSPP. For instance, the LSPP conversion to a decentralised model adds

more problems (see Sections 6.10 and 6.5.1), although it was expected to improve land access and tenure security. However, the organisational aspects of the LSPP are dealt with in depth in VSM analysis of LSPP (see Section 8.2.1).

The Beliefs, Norms, Values, Perceptions and Behaviour of People

Social systems theory acknowledges the complexity of the world in which social systems operate and investigates this reality holistically (Checkland, 1981). SSM therefore, recognises the existence of reality and that human beings involved in the LSPP system hold certain beliefs, norms, values, perceptions and behave accordingly (Checkland, 1999). These aspects can advance or hinder the goals of the LSPP as a social system.

The LSPP narrative reveals that some clients do not want to pay for land services and claim they are socially secure in their land parcels hence do not require a lease to feel secure (see Sections 6.5.1 and 6.7.7) in their land holding.

From the social perspective, the history and culture, especially the prevailing customary land tenure system, has profound effect on the way land is held in Lesotho. The Basotho indicate that land rights and land tenure security are socially acquired (even without a Form C, C2 CC2 and Lease titles) (see Table 6.1). For the Basotho people, customary land tenure rights are legitimate and still held dear and people still feel secure with the customary tenure system. Most of the land rights in Lesotho are held through the customary tenure system outside of the formal system and are unrecorded in the Deeds Office (see Sections 6.3.2 and 6.8.2).

Both the cost of engagement with the LSPP and the existing social tenure security, contribute to the lack of use of the LSPP and the perpetuation of informal processes (see Sections 6.5.1 and 6.7.7). This decreases the effective functioning of the entire LSPP as a business system and prevents revenue collection (see Section 6.6.3) as a goal of the formal land registration system.

The LSPP in Analysis Three (the Political Situation)

Effective political will and support is necessary to enhance effective operation of the LSPP. Analysis Three investigates the political issues affecting the operation of the LSPP as revealed in the narrative and structured through the political system model developed in

Section 8.3.1. This analysis elaborates on the systems models developed in Section 8.3.1 and reveals that the political system model is not well established in LSPP.

The political system model is characterised by lack of government support for the LSPP stemming from lack of political will to promote the goals of the LSPP (see Sections 6.5 and 6.7.1). This leads to the failure of the LSPP to function optimally.

Logic Based Stream of Analysis

The tasks and issues relevant to the problem situation of the LSPP were identified and developed from the narrative, rich picture and the LSPP CATWOE. They are constructed as five models of relevant human activity systems in Section 8.3.1) (Checkland and Scholes, 1990). Figure 8.7 depicts the LSPP logic based stream of analysis.

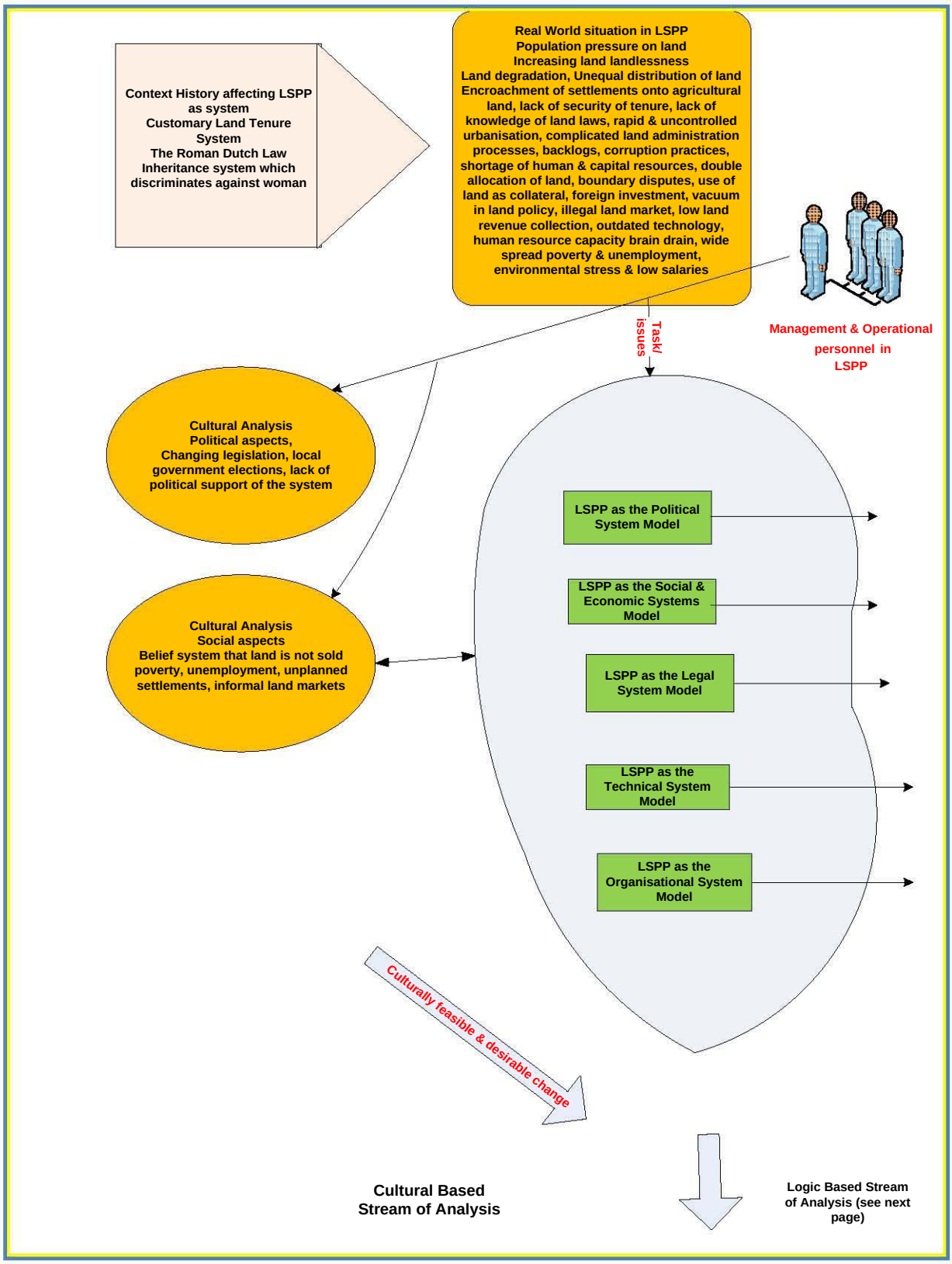

Figure 8.5 The LSPP cultural-based stream of analysis of the two streams model, continued on the next page

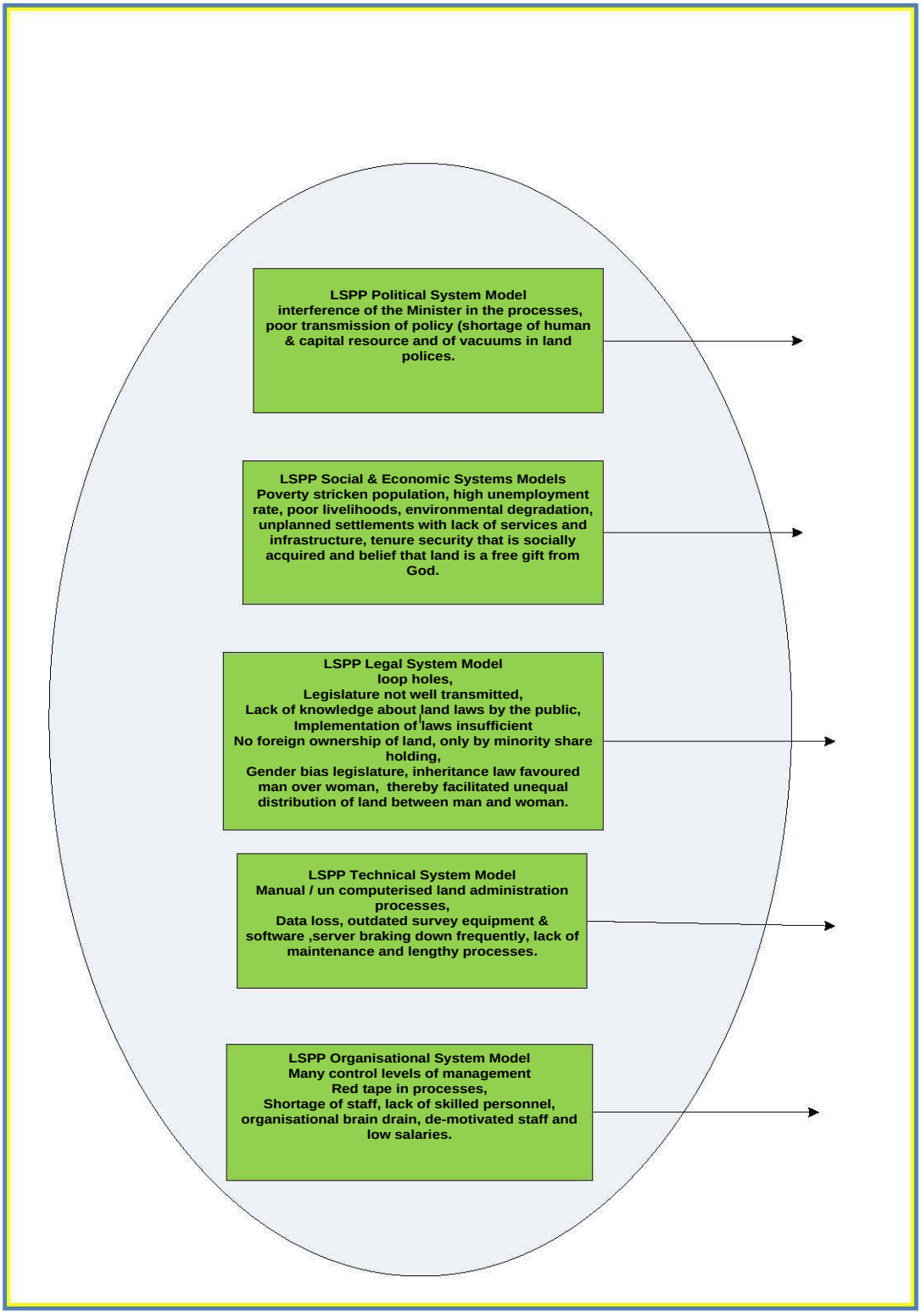

Figure 8.6 The conceptual systems models of the LSPP.

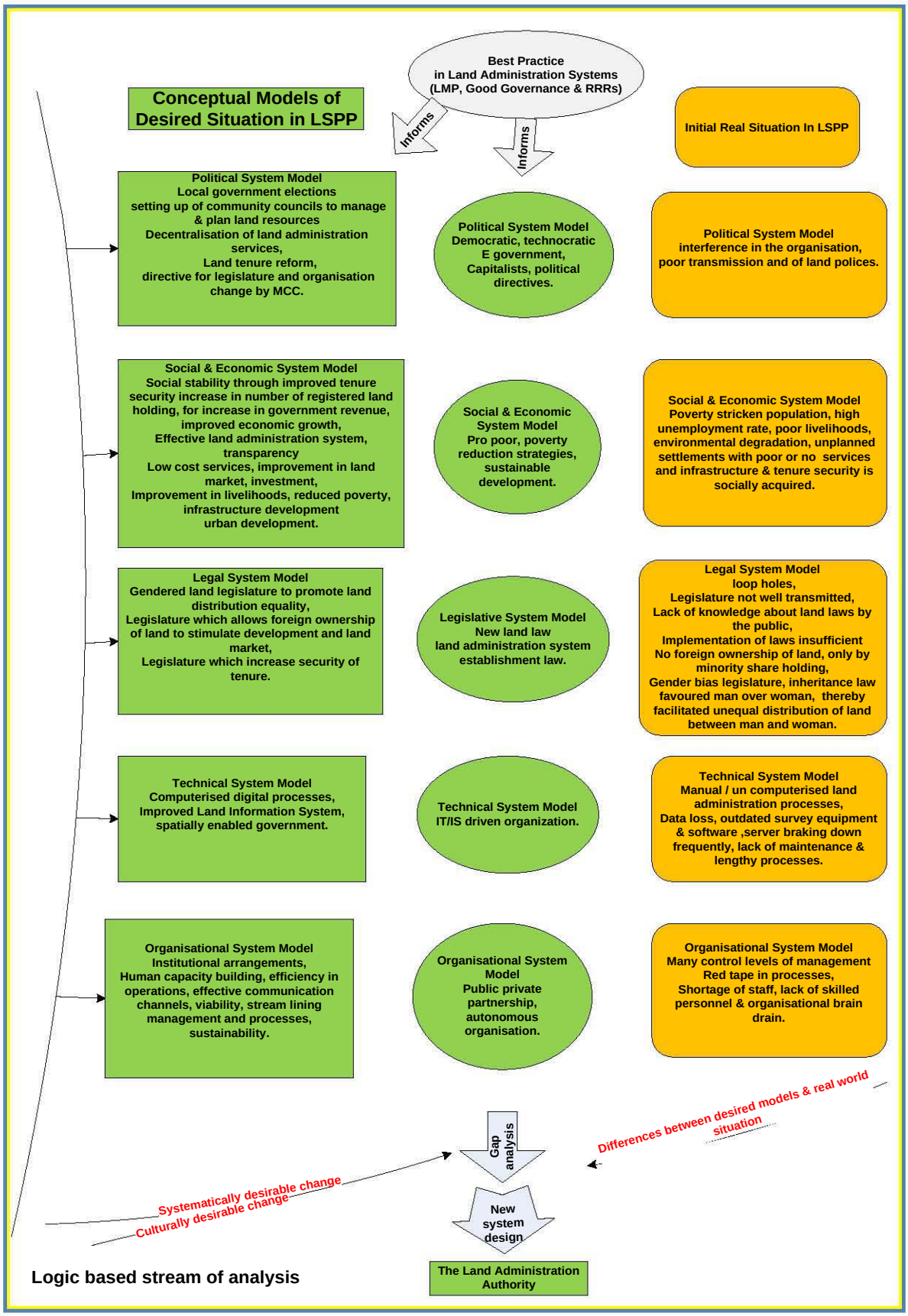

Figure 8.7 The LSPP logic-based stream of analysis in the two streams model

A Summary of the Analysis of the LSPP, Revealed through SSM

- Two streams of analysis (Figure 8.5, Figure 8.6 and Figure 8.7) seem a very useful tool to structure and analyse the cultural, social, economic and political aspects of the problem situation in the LSPP. They enabled understanding of an ill-structured and ill-defined problem situation seen from multiple perspectives, this supports the findings of a prior study (Whittal, 2008) which found SSM suitable to study and analyse cadastral systems.

- The findings of this study using the SSM, suggests that the LSPP failures can also be blamed on the current cultural and socio-economic situation of Lesotho, in as much as it is on organisational structures, land policy and processes (see Figure 8.5).

- SSM facilitates for a culturally and systematically desirable action to improve the LSPP (see Figure 8.5 and Figure 8.7). Since this research is not interventionist, the comparison of conceptual models and the real situation, and the action to improve the problem, are not undertaken.

8.4 Analysis of the LSPP using the Land Management Paradigm (LMP)

Drawing from the land management paradigm theory presented in Section 4.5 and motivated in Section 5.7, this section aims to analyse the LSPP design in the context of the LMP. it seeks to evaluate the LSPP design using LMP framework. The structure of the LSPP organisation, its processes integration and communication, its effectiveness, availability of resources, government support and the availability and delivery of complete and comprehensive spatial information are all aspects assessed against the LMP. Although the LSPP is being reformed, this section is important as it reflects whether the LSPP is designed in accordance with modern land administration theory.

The LSPP Design against the LMP

The LMP design calls for land administration systems that perform effectively in respect to the four functions of land administration which are land tenure, value, use and development (Williamson *et al*, 2010) (see Section 4.5.1). The four Divisions of the LSPP (see Section 6.4) reflect the four functions of the LMP exactly. This indicates that the LSPP design is well matched to the LMP design.

Although the operations of each Division in the LSPP are different, they are ideally intended to integrate functionally. However, integration is minimal (see Section 6.7.5) compromising the LSPP meeting the goal of efficiency as espoused by the LMP.

Integration and Communication

In the context of LMP, the functions of the LSPP need be conducted in a coherent manner for optimum performance of a land administration system (Williamson *et al*, 2010). The LSPP does not conduct its functions in a holistic manner as indicated by the lack of meetings and other platforms to discuss progress and problems and to share process application information (see Sections 6.6, 6.7.4 and 6.7.5). This inhibits its effectiveness and its trustworthiness.

Lack of communication within each division and between divisions (see Sections 6.7.4 and 6.7.5) is a weakness of the LSPP in comparison to the LMP (see Section 6.7.5). It leads to failure of the LSPP to effectively integrate the land administration functions as envisaged in the LMP (see Section 6.12).

Monitoring of Land Administration Processes

Monitoring of the system's key processes of land administration system is central to good governance in the LMP design. For the LSPP this process is weak or lacking. LSPP processes are poorly controlled, largely unregulated, unmonitored and are not audited (see Sections 6.5.1 and 6.7.3). This weakens the capacity of LSPP to function effectively and conform to the principles of good governance in land administration.

Land Information

A complete national spatial information availability and accessibility is central to the LMP design (Williamson *et al*, 2010). LSPP demonstrates a poor land information data infrastructure. Land information is neither complete nor accessible in the LSPP. This hinders the delivery of many possible benefits to land information users as well as the ability of the LSPP to generate revenue from such information. The inability of the LSPP to manage and deliver national spatial information is a critical weakness of the LSPP against the LMP design.

Government Support

The LSPP lacks governmental support as indicated by the lack of capital and human resources (see Section 6.12). Poor policy transmission discussed in Section 6.5 is also a feature of the lack of governmental support for the LSPP.

A Summary of the Analysis of the LSPP, Revealed through LMP

- Although the analysis suggests that LSPP design is close to that recommended in LMP, this research concludes that the LSPP inefficiencies such as poor policy transmission and poverty lead to its failure to treat land as a coherent whole, hence these functions are not effectively delivered. This also inhibits LSPP to be an effective land administration system which complies with international best practices.

- The LMP is therefore, suitable in analysing and guiding the design of effective cadastral system capable of promoting sustainable development.

8.5 Analysis of LSPP using the Principles of Good Governance

This section critiques the LSPP in Lesotho against the good governance framework.

a) Security

In the context of security the cadastre should provide efficient land information and backup systems should be in place to avoid loss of data (Whittal, 2011). The LSPP fails to protect land rights through provision of security of tenure for the majority of Basotho people (see Sections 6.3.1 and 6.8). This is revealed by the poor filing system which results in loss of data (see Section 6.5.1), a survey database which cannot be updated and lack of backup system (see Section 6.5.2).

b) Clarity and Simplicity

Whittal (2011) indicates that clarity and simplicity refer to whether the system and its tools are easily understood by the users and are as simple as possible. Complicated, lengthy and incomplete land administration processes typify the LSPP (sees Section 6.8.2). In the context of good governance, the land administration processes should be simple and quick for transparency and efficiencies.

Lack of understanding of the system contributes to the Basotho people refusing to pay for land administration services such as leases and land transactions (see Sections 6.5.1 and 6.7.7).

c) Timeliness

Good practice in good governance means availability of timely and up-to-date land information to the citizens (Whittal, 2011). There is lack of comprehensive and timely land information in Lesotho. LSPP fails to provide complete land information to the Basotho people and delays are experienced (see Section 6.8.1).

d) Accessibility

The LSPP is found inaccessible to the majority of the Basotho. The reported slow and un-transparent processes forces clients to check on their processes many times often incurring more costs in process (see Section 6.8). The accessibility of the system to rural people is restricted by transport issues, costs of engaging with the system (see below) and failure to service land needs efficiently and effectively at the District Offices.

e) Cost

The cost principle relates to the amount of money incurred in paying for the land administration system (Whittal, 2011). The costs of LSPP are considered expensive by the majority of people (see Sections 6.6.3, 6.7.7 and 6.8) and this also makes LSPP inaccessible to the majority of the people.

The informal land market is developing as a result of expensive land administration fees (see Section 6.5.1) and government is unable to collect revenue from such transactions (see Section 6.7.7).

f) Transparency

Transparency refers to the fact that the principles, processes and policies of the land administration system should be transparent to all (Whittal, 2011). For the LSPP, policy is poorly translated by both the clients and officers and there is no public outreach in land policy (Land Act of 1979) (see Section 6.8.1). A further aspect of transparency is that it should prevent bribes and shortcuts in the system operations and these are endemic in all levels of the LSPP (see Section 6.5.1).

g) Efficiency and Effectiveness

An effective and efficient cadastre underpins investments, generation of revenue, through property tax, and hence boosts economic growth. Efficiency and effectiveness refer to undertaking the operations in a timely manner, using as few resources as possible, and delivering the expected products as required by clients in accordance with the functions of each Division of the system (Whittal, 2011). The LSPP is declared ineffective and inefficient (see Section 6.8) as it fails to generate income from land tax as most land is unregistered and some registrations are done through informal channels (see Section 6.8). It also does not adequately perform its functions in that property rights are insecure (see Section 6.3.1), processes are expensive, land products are not delivered in a timely manner (see Section 6.8.3 and 6.11) and are neither complete nor up-to-date (see Section 6.8.1).

h) Empowerment

Empowerment is a principle of ensuring that weaker role players in the system have a voice. Officers in the land administration system can be empowered through effective communication, training and mentorship and good salaries (Whittal, 2011). Communication within the LSPP is generally poor and there is a shortage of skilled human resources (see Sections 6.5.1, 6.5.2 and 6.5.3). A further aspect of empowerment is ensuring that clients have the resources and knowledge required to engage with the LSPP. There is no evidence of proactive empowerment of the Basotho people (see Sections 6.5.1 and 6.7.7).

i) Use of class world technology

Good practice in land administration should mean that the use of technology in land administration system should be effective and up to date and suit the context in which it is to be used (Whittal, 2008). The IT/IS in the LSPP is very poor and it poses a challenge for its efficiency and effectiveness (see Section 6.7.6). All land administration processes are manually undertaken, computerization which is reportedly problematic is limited to survey processing and calculation (see Sections 6.5.2 and 6.5.1). The software is reportedly very old and often breaks down with untimely maintenance and this result in inaccurate data (see Section 6.5.2).

j) Adherence to international standards

International standards in land administration promote the use of regulation and audits in order to gauge performance and to provide essential feedback in order to improve systems (Whittal, 2008). The LSPP processes are not controlled or regulated and audit mechanisms are lacking (see Section 6.7).

k) Maintenance of Capacity and Capacity Building

Although capacity building strengthens land administration institution, it is notably lacking in the LSPP. The narrative indicates that staff of LSPP are neither trained nor provided with resources to enhance effective performance (see Sections 6.5.1, 6.7.3 and 6.5.3).

l) Legality

There are declared gaps in the legal framework of LSPP (see Sections 6.5.1 and 6.7.2). The legal delivery of the LSPP functions is thus inhibited (see Sections 6.7.7 and 6.5.1).

A Summary of the Analysis of the LSPP, Revealed through Good Governance

- Whittal's (2011) comprehensive principles of good governance is an effective and useful tool to evaluate whether the LSPP is based on principles of good governance. Although the analysis has been restricted to those principles described by Whittal (2011), it has added value in the description of the problem situation and facilitated a deeper understanding of the LSPP. This framework can also be used to evaluate cadastral systems in general.

- The use of good governance in analysis of the LSPP revealed that LSPP operates in weak governance in many ways and weak governance leads to ineffectiveness in the LSPP.

- The LSPP has undermined the government efforts to reduce poverty, promote economic growth and hence the achievement of sustainable development remains an unattainable goal for the government of Lesotho, however there is much that should be done to improve the situation.

- Fortunately the LSPP is proposed to undergo reform in the creation of the LAA, and it is hoped that these good governance issues will be adequately addressed. This analysis could serve as guide in reforming the LSPP to the LAA as planned, and also in designing future modern land administration systems in other contexts.

8.6 Analysis of the LSPP using the RRRs

The RRRs (rights, restrictions and responsibilities) (see Figure 5.3) of the LSPP are identified as follows:

8.6.1 Rights in LSPP

The LSPP delivers the land rights and security of tenure through leasehold tenure system (see Section 6.3.2). However, it has failed to provide rights and security of tenure to Basotho (see Sections 6.5.1 and 6.8.2). The rights of some Basotho are not protected and secured. The majority still hold their land rights under customary tenure system (see Section 6.3.2). These result from many problems including complicated, incomplete, lengthy and expensive lease and land transfer processes (see Sections 6.7.7 and 6.8).

Furthermore, lack of land information (see Section 6.8) is indicative of poor distribution and management of information on existing rights.

8.6.2 Restrictions in LSPP

For the LSPP, restrictions involve control of land development and use. These are delivered through production and implementation of land use and settlements plans, issuance of building and planning permits and zoning of land use (see Sections 6.5.3 and 6.5.4). However, these are not efficiently delivered due to insufficient capital and human resources, policy enforcement mechanisms which are lacking, and the lacking enforcement mechanisms for control of land use and development (see Sections 6.5.3 and 6.5.4). Consequently, Lesotho is characterised by unplanned settlements and uncontrolled development (see Section 6.5.3 and 6.2.1). Therefore, the LSPP does not deliver and manage land parcel restrictions effectively.

8.6.3 Responsibilities in LSPP

For the LSPP, responsibilities are restricted to the payments of the land taxes by the land parcel owners and collection of those taxes by the government. Majority of Basotho do not take responsibility to pay for land administration services because they are expensive and

cannot be afforded (see Section 6.7.7). Consequently, the government revenue from land registration (leases) and land transactions (transfers and mortgage) (see Section 6.8.4) is low. Further, the government does not take responsibility to collect land tax from registered properties (see Section 6.6.3).

A Summary of the Analysis of the LSPP, Revealed through RRRs

- The LSPP manages the RRRs in an ad-hoc manner. Lots of inefficiencies revealed through this analysis including poor resources flow, vacuums in land, poor management, insufficient human resources and lack of knowledge about land laws, are prominent factors which inhibit LSPP to deliver the RRRs effectively. Failure to distribute and manage the RRRs is linked to the ineffective land administration system.

- The RRRs are found useful in assessing the compatibility of the LSPP to best practices in land administration.

8.7 Triangulation of LSPP Analysis

The analysis tools of VSM, SSM, LMP, RRR and GG have looked at various aspects of the LSPP design from different angles. The results of the analysis triangulate and complement each other with respect to the LSPP system design. The LSPP design is found to be poor. For instance, the VSM reflects the LSPP design as not self-organising and ineffective, SSM also found LSPP not culturally or politically viable, while the LMP and RRRs analyses found the design to be non-holistic causing failure of delivery of the land administration functions as expected in the LMP and RRRs. The GG framework of analysis shows that the LSPP also reflects a weak governance structure, complementing the findings reflecting weak design. Since the results from a variety of analytical tools converge (triangulation), construct validity is strengthened and rigour is achieved as has been motivated for in Chapter 5. In addition, the results of the analysis show that methodological triangulation in this research is achieved.

8.8 Conclusion

Tools for research and design of land administration systems are useful in the process of analysing or designing sustainable land administration systems in developing countries. The single case study strategy has been found suitable in studying and developing a comprehensive description of the land administration system in Lesotho. This provided the

information with which to view the LSPP from a systems perspective and model it using the tools of VSM and SSM.

It also facilitated a more focused analysis of the LSPP against the LMP and a comprehensive framework of good governance principles and RRRs in land administration. Through this process of analytical triangulation (using multiple tools of analysis), the failings of the LSPP against international ideals are corroborated.

The suite of tools used in this analysis has contributed knowledge and understanding of the cadastral system under study and confirms the findings of Whittal (2008). They further support the use of critical realism as the underlying philosophical framework which allows the use of multimethodology (Whittal, 2008). The use of a mixed method approach to study and analysis has therefore, added to theory in system thinking and cadastral systems as Whittal (2008) has postulated.

A further longitudinal study of the land administration system in Lesotho will add to the body of knowledge on reform of cadastral systems in general, and in developing countries in particular. In the following chapter, the proposed LAA reformed design will be analysed using the same tools of SSM, VSM, LMP, the principles of good governance in land administration and the RRRs.

Chapter 9. Analysis of the Land Administration Authority

9.1 Introduction

This chapter analyses the Land Administration Authority (LAA), a new system designed to replace the LSPP using multimethodology as planned in the research design (see Sections 5.3 and 5.4). The structures and processes of LAA are investigated from a systems perspective. Similar to the analysis of the LSPP in Chapter 8, system thinking tools (VSM and SSM), the LMP, principles of good governance and RRRs are used in the LAA analysis. Issues with the proposed changes to the cadastral system in Lesotho are identified. This analysis contributes knowledge and understanding of the proposed LAA from different perspectives.

The LAA narrative in Chapter 7 facilitates analysis of the LAA using the multimethodology and theoretical frameworks adopted in this research (see Chapter 5). The VSM framework, for instance, investigates the structures, communication, relationships and processes of the system and establishes whether the LAA is duly designed to be a viable system, or will be (or not) by accident. In contrast, SSM analyses the socially constructed situation including the cultural, social and political context in which the LAA will operate, and whether it is likely to be successful in such a complex environment. The LMP, good governance and RRRs frameworks are used to evaluate the capacity of the LAA to function optimally and be an effective land administration system.

9.2 Modelling the LAA Using VSM

This section analyses the LAA as presented in the narrative (Chapter 7) using VSM. VSM has been motivated in Sections 2.2.4, 3.7.3 and 5.6.3 and has been identified suitable tool for modelling the LAA (see Section 5.6.3). The LAA organisational chart presented in Figure 7.1 does not show how the LAA operates, what it does and why it performs these operations, issues which are addressed in the VSM modelling of the LAA. Figure 9.1 and Figure 9.2 present the LAA using VSM as revealed by the narrative in Chapter 7. Figure 9.1 shows the System-In-Focus and the hierarchy of systems both above and below the System-In-Focus and the relationship of the System-In-Focus to other systems at the same level.

Figure 9.2 presents the VSM diagnostic model of the LAA System-In-Focus, demonstrating the relationships between the higher system level (Systems 3, 4, 5 and 6) which is the senior management of the System-In-Focus, and lower system level (Systems 1 and 2) which is the

System-In-Focus operations and their management. It also shows the interrelationships between System-In-Focus elements and between these elements and the audit mechanisms. The recursion of viable systems (Sub-systems) in LAA is demonstrated. In this diagram, the LAA identity and its operations are shown and relationships crucial to support its autonomy are well-illustrated in the diagram.

The LAA is identified as the System-In-Focus in this modelling tool, it is therefore, autonomous. Its operations are, in VSM language, named the sub-systems of the System-In-Focus and they include Lease and Valuation, Surveys and Mapping and Deeds Registry and Legal sub-systems (see Figure 9.1 and Figure 9.2 and Section 7.5.3). These sub-systems implement the objectives of the System-In-Focus (see Section 7.5.1 and Figure 9.2) and are autonomous. This is illustrated in Figure 9.2 where each sub-system has full VSM elements (operation, management and environment). They are also at the same level of recursion to the System-In-Focus as the other sub-systems, and they all aim to achieve the overall goals of the LAA.

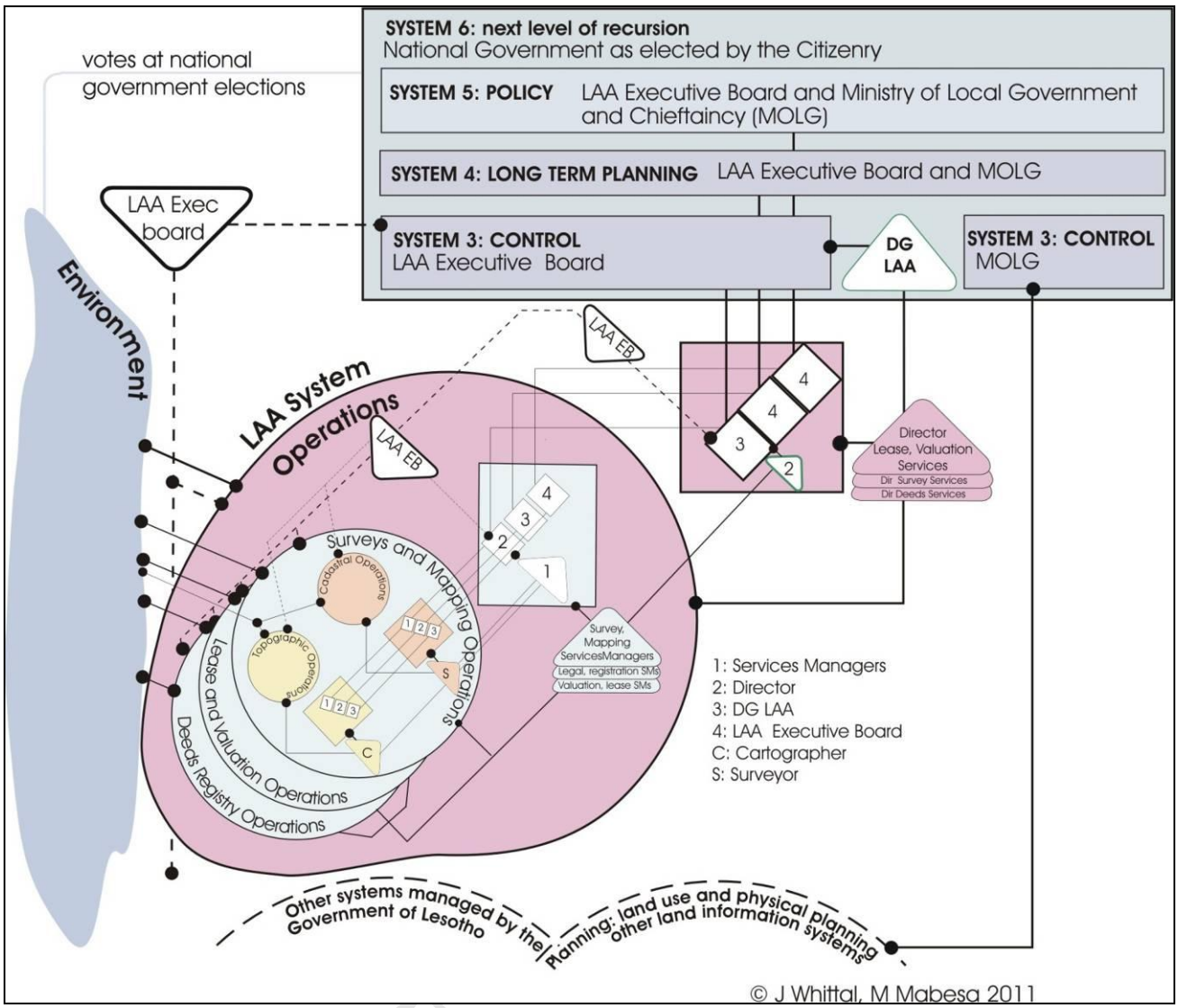

Figure 9.1 VSM Chart 1 of the LAA System-In-Focus with its relationship to its sub-systems and other systems at the same level

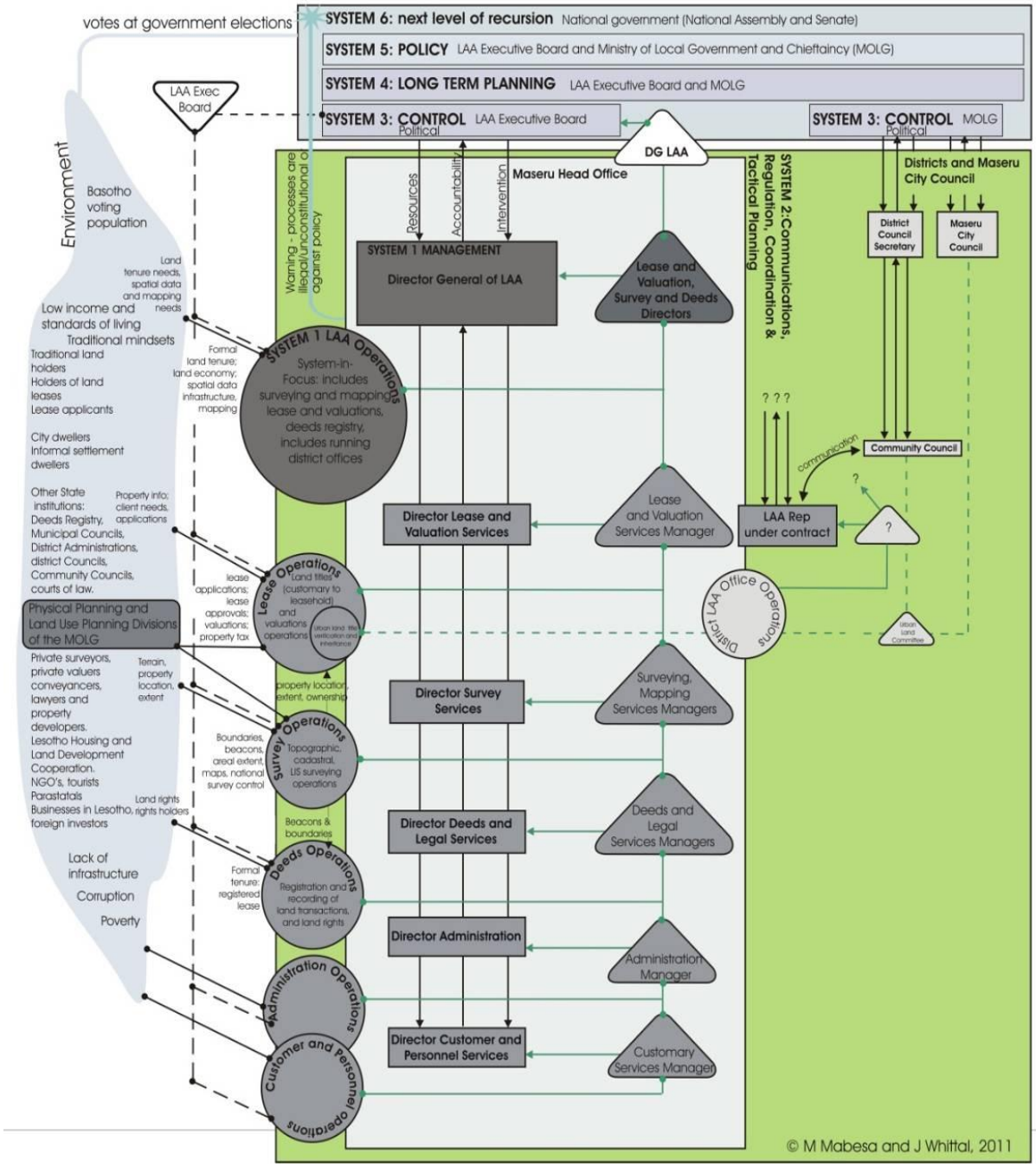

Figure 9.2 VSM Diagnostic Chart of LAA; the LAA System-In-Focus and its environment, operations, management, regulators and audit mechanisms, as well the relationships between these elements.

The System-In-Focus has its own management who is the Director General (DG) as Head of the LAA (see Section 7.5.4). The DG manages and coordinates the overall operations of the System-In-Focus (see Section 7.5.4 and Figure 9.2). Each sub-system is managed by its respective Director. Each Operation has a Regulator or Coordinators. The regulator and coordinator (System 2) of the System-In-Focus are the operations/ sub-systems Operational Directors in combination. This body provides the link to management for that system or sub-

system. The context in which the System-In-Focus, the LAA operates is called its Environment (Figure 9.2).

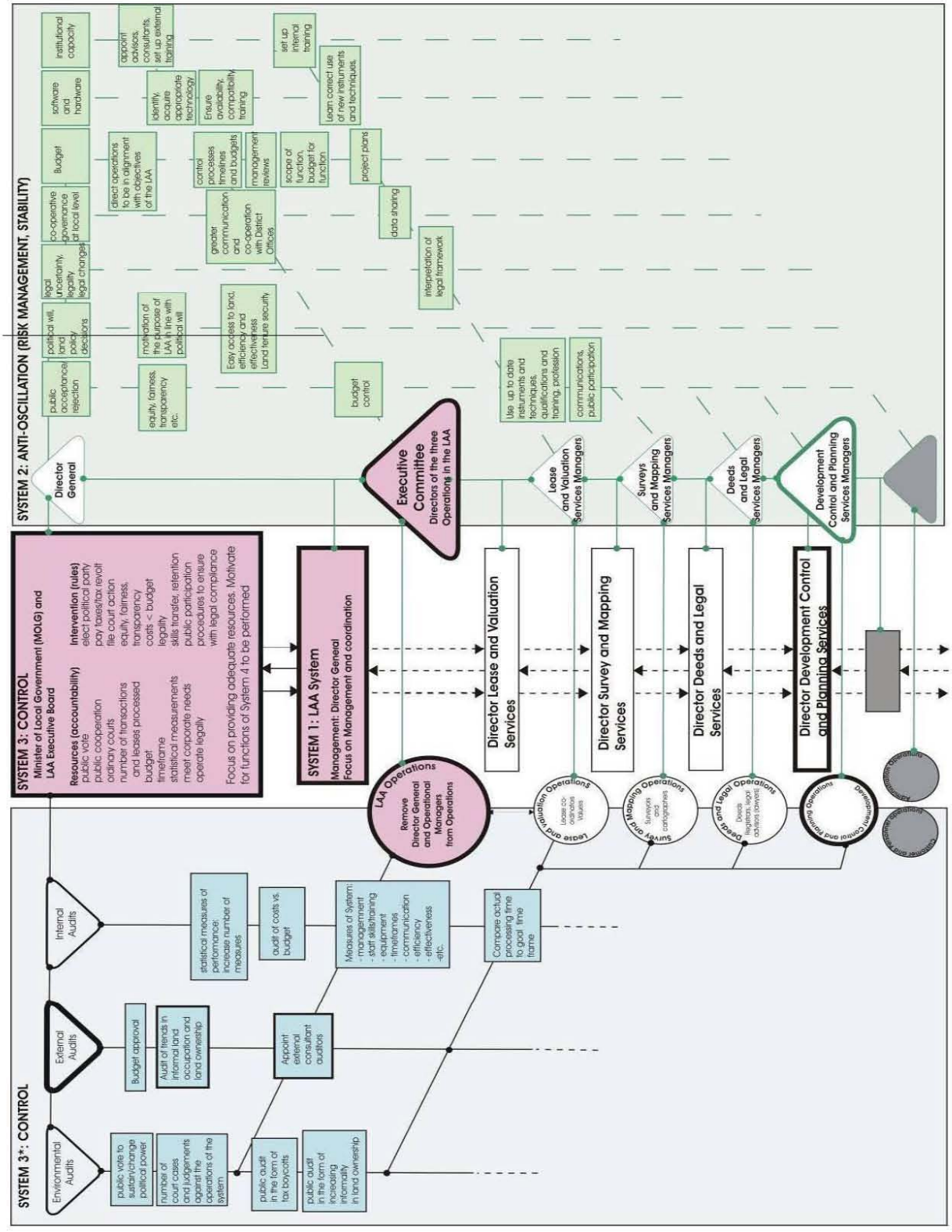

Figure 9.3 Re-design of VSM Chart 3 Audit and Anti-Oscillation in LAA with recommended changes highlighted in thicker Lines (Mabesa and Whittal, 2011)

9.2.1 The LAA Diagnosis and Analysis

The LAA is not yet operational and so its analysis is based on the proposed design, objectives and the underlying land policy (Land Act of 2010) (see Section 7.5.1). This analysis is based mostly on documentation since the LAA is in the process of being established**.** Diagnosis of the LAA facilitates understanding of the problems and challenges which are likely to affect its functioning in line with the VSM goals of viability. This is undertaken through reflection on the VSM of the LAA in conjunction with the knowledge gained through the LAA narrative in Chapter 7. In particular, the objective which states that LAA will be self-sustainable (Lesotho Government, 2010) (see Section 7.5.1), is in line with the VSM principle of autonomy and this aspect can therefore, be assessed through VSM.

System 1: The LAA Operations and Management

System 1 comprises of the operations of the LAA and its management. The operations are the Lease and Valuation, Surveys and Mapping and Deeds Registry operations. These correspond to the three Departments of the LAA (Figure 9.2) and Section 7.5.3). This is where the primary activities which provide the products and services that determine the existence of the LAA System-In-Focus are undertaken. For instance, the services of the LAA include surveying and valuation, while the products include leases, maps, deeds and land information amongst others. Therefore, inputs are turned into outputs in the operations of each sub-system e.g. Form C tenure is converted into a Land Act of 2010 lease (see Section 7.5.2.). Although the sub-system operations perform different activities (see Section 7.5.3), they all perform to achieve the overall goal of the System-In-Focus (see Section 7.5.1). Furthermore, the operations are the ones which are in close association with the environment and perform to satisfy its demands (see Figure 9.2).

Since the environment has high variety and keeps changing, System 1 has to amplify its variety so that it may keep balance of the changing environment variety. The operations in this system may share all or part of their environments since the sub-system functions are interrelated and service the same clients.

Capital and human resources are essential because they enable effective transmission of land policies from the Government to the LAA System. They also facilitate effective provision of

intelligence, cohesion, coordination and implementation capacity for the LAA. They provide its functional capacity, and shortage of any of these can cause instability in LAA and lead it to the very same situation experienced with LSPP (see Section 8.2.1) in which capital and human resources were a primary limiting factor. However, during the initial phase of implementation, LAA will source its funds from the government of Lesotho and only later aim to be financially self-sustaining from the fees and taxes (see Section 7.5.6). Human resources are initially sourced through open advertisement, but the reality is that many of the employees of the new LAA are likely to be current LSPP employees.

The Director General (DG) is the manager of the System-In-Focus (LAA) as shown in Figure 9.1 and introduced earlier in this section. In VSM, the DG as the Head of LAA must coordinate activities of the overall System-In-Focus. Each operation has its own management structure (see Section 7.5.3) but there is no executive body coordinating the efforts of the different sub-systems and their operations.

In good VSM design, managers should not be involved in everyday operations of the System-In-Focus; the operations should be performed and signed off within the operations, as shown in the System 1 analysis. However, for the LAA, the System-In-Focus manager (the DG) oversees the everyday operations of the system (see Section 7.5.4). Also, the operational Directors such as the Director Lease and Valuation services and the Director Deeds services as sub-systems regulators are immersed in land administration processes as final signatories in leases and land transactions processes handled by the sub-systems (see Section 7.5.3). This inhibits the capacity of the LAA to function as a viable system.

System 2: Regulator /Coordinator

The regulation/coordination function is where systems operations are regulated to make sure that they all adhere to the strategies, standards and rules as stipulated in the objectives of each respective operation (see Section 7.5.3). The operations are coordinated so that their functions do not overlap and so that they perform as efficiently as possible, sharing where possible. The coordinators of the LAA are the six Operational Managers (see Figure 9.2). They coordinate matters separately (see also Section 7.5.3), hence the regulation in the LAA is not holistically designed with consequences for efficiency and effectiveness.

Among other factors which contribute to a viable system, communication is crucial. The communication channels in the LAA are shown by lines between the VSM elements (see

Figure 9.1 and Figure 9.2). Not only should communication channels exist between the LAA System-In-Focus and its embedded recursive sub-systems, but these should also be fast enough to keep up with the rate at which variety is changed in the Environment and/or in Policy. Change of variety in the System-In-Focus needs to be dynamic in order to maintain stability. This analysis does not reveal communication channels for the LAA, as it is not yet in operation (see Section 7.2).

System 3: The LAA Control

The LAA Executive Board controls the System-In-Focus and is the link between the System-In-Focus management and its higher levels of management (Systems 4 and 5) (Figure 9.2). This Board controls, monitors and audits the immediate operations of the LAA. However, the audit mechanisms must be agreed upon by the System-In-Focus management and System 3. The Board is mandated to ensure that resources are efficiently used; that they are used in accordance with the LAA objectives; and that the System-In-Focus performance is measured. The Board also supervises the regulation activities of the System-In-Focus (see Figure 9.2). The Executive Board directly monitors and audits performance of the LAA. The LAA Executive Board has authority over the LAA budget and resources and hence can increase the variety of the system through resource provision. The manager of the System-In-Focus (DG) must account for the resources used by the LAA to System 3, the LAA Executive Board (see Section 7.5.4).

System 4: The LAA Intelligence

The intelligence function resides with the LAA Executive Board and the MOLG (see Figure 9.1 and Figure 9.2, see also Section 7.5.4). System 4 looks outside the System-In-Focus (Figure 9.2) and should make policy changes and amendments as and when required (see Section 7.5.4). To account for resources, the LAA must produce monthly reports including the number of registered leases and the number of registered land transactions (see Section 7.4.3). An independent audit function as modelled in VSM (see Figure 9.3) appears to be lacking. If this System ceases to function effectively then System 5: the LAA Executive Board and MOLG may be called on to attenuate variety through policy changes and or resources allocation.

System 5: The LAA Policy

The LAA Executive Board and the MOLG are responsible for the LAA land policies. System 5 has to make sure that policy (see Section 7.5.4) is effectively transmitted and communicated to each operational management in the LAA. These operations must have the means for translating policy into a set of plans (in the form of objectives and performance targets) for delivery of products and services, in line with the objectives of the System-In-Focus. However, Lesotho as a developing country did not create policy from scratch; the Land Act of 2010 and establishment of the LAA are a result of international trends in policy influenced by various global agendas such as sustainable development. The international funding agency called the Millennium Challenge Corporation engaged consultants as a strategy to cope with policy-level decisions due to lack of internal capacity (see Section 7.2).

A viable system needs to be financially sustainable in order to be effective and maintain autonomy. For the LAA, the allocation of resources for implementation flows from National Government priorities, endorsed in land policy. The National Government must facilitate variety by providing resources to the LAA. However, if the Government runs short of capital and insufficient operating budget is provided through System 3, the System-In-Focus cannot perform its functions and its capacity to be viable and maintain identity would also be jeopardised (Hilder, 1995).

Within the LAA, the functions of System 3, System 4 and System 5 are conducted by the LAA Executive Board (see Figure 9.2). The LAA design fails to distinguish between the roles of Systems 3, 4 and 5. The roles of this Executive Board are stretched compared to an ideal VSM design. Conflating the roles of Systems 3, 4 and 5 may result in some risks, such as the System 5 failing to respond to circumstances and to either increase its variety (policy changes, or resource flow) when required by the LAA or to request emergency actions by Systems 3 and 4 (Hilder, 1995). This threatens the stability of the LAA and its capacity to function as a viable system may be jeopardised.

A Summary of the Analysis of the LAA, Revealed through VSM

- The VSM in this chapter has unfolded the complexity of the LAA through modelling the LAA structures and processes and assessing its design in line with the goal of long term viability of the system.

- The results of this investigation suggest that poor design of the LAA's institutional structure could result in ineffectiveness and inefficiency. This summary contributes and directs ways to enhance the LAA autonomy.

- This analysis has revealed that the LAA maybe viable by accident, rather than by design (see Section 9.2 and 9.2.1 and Figure 9.2 and Figure 9.3). The structure and processes of the LAA are not designed to promote autonomy in the LAA. This is indicated by the involvement of the management in operations and the many roles dedicated to the LAA Executive Board (Control, Intelligence and Policy) as depicted in Figure 9.2.

- In VSM, every system in the LAA must be in place, differentiated and alert to perform and deliver its functions efficiently, to maintain the stability of the System-In-Focus. In this analysis, the LAA Systems are poorly differentiated. Management is involved in operations and Systems 3, 4 and 5 all involve the LAA Executive Board (see Figure 9.2). The proposed areas for change for the LAA are shown in VSM chart 3 of the LAA, and are indicated with thicker borders and in the text of that diagram (Figure 9.3).

- The VSM modelling of the LAA has facilitated understanding of the LAA as part of the Lesotho land administration and cadastral system. Recursive structure of the LAA as modelled in VSM implies that all officers, not just managers, are expected to contribute to and are responsible for the preparation of strategies and policies within their areas of concern in the organisation.

- The LAA VSM model provides ways of overcoming/ avoiding the current hierarchical structure of relationships in the LSPP. Since each sub-system is equally relevant within the LAA System-In-Focus as demonstrated in Figure 9.2 the LAA should ensure that the same needs and controls occur at every level.

- This investigation supports the results found in Chapter 8, relating to the suitability of VSM in the analysis of the LSPP. It therefore, provides further support for the conclusions of Whittal (2008) that VSM is a suitable tool, among the suite of methods she identified, for use in cadastral systems research.

9.3 Analysis of the LAA Using SSM

Following a narrative description of the LAA in Chapter 7, this section investigates and analyses the LAA using a mixture of SSM tools motivated in Sections 2.2.4 and 5.6.2. It evaluates the success of the LAA as a social system. This facilitates inquiry into the feasibility of the proposed structure of the LAA within the complex environment including cultural, social, economic, political and organisational context within which it is to function and in line with the broad international direction towards sustainable development.

Unlike the previous chapter, where the rich picture was used to illustrate the unstructured situation in the LAA, the present analysis is limited to structuring the LAA situation as portrayed in the LAA narrative (Chapter 7) in line with the SSM.

This analysis gives insight into the capability of the LAA to solve the problems identified in the LSPP and assesses its capacity to perform in accordance with its objectives (see Section 7.5.1). However, the real world situation in the LAA is a reflection of the reality from the eyes of the observer (Checkland, 1981). The SSM processing of the LAA does not aim to improve the system but contributes to the understanding of the LAA as a social system. Improvement or intervention is beyond the scope of this thesis.

9.3.1 The LAA CATWOE Elements

Table 9.1 illustrates the LAA CATWOE elements.

	ELEMENTS	DESCRIPTION IN THE CONTEXT OF LAA
C	**Customer**	The customers of the LAA products and services; land and property owners, lease and land transaction applicants, lease holders, banks, land developers, LIS users, voters, district councils, Maseru City Council, LHLDC, community councils, Physical Planning and Land Use Planning Divisions of MOLG, other government ministries, etc.
A	**Actors**	The Lesotho Government supported by the land reform activity founders in Lesotho - Millennium Challenge Corporation, MOLG, LAA functional departments personnel; lease coordinators, valuation officers, deeds registrars, legal advisors, government surveyors, private surveyors, IT specialists, notaries, lawyers, cadastre agency and cartographers.
T	**Transformation**	The LAA processes, products and services: formal registration of customary tenure to leasehold (Leases), leases to land transfers, mortgages, subdivisions and subleases, land and improvement information to valuation rolls, valuation rolls into land tax bills, surveys to maps and land parcel diagrams.
W	**Weltanschauung/ World View-**	The LAA in the context of world policies including; sustainable development: social security, economic growth, political stability, government enhancing quality of life, Millennium Development Goals with respect to reduction of extreme hunger and poverty, economic growth through efficient land markets which improve economic growth, the land management paradigm, modern land administration systems and the notion that the LAA as a land administration system can function effectively to promote these

		initiatives.
O	**Owners**	The Basotho nation, people capable of threatening the viability of LAA: users and non-users of the LAA products and services, policy makers, officers, clients capable of preferring the informal land market other than LAA.
E	**Environment** **Constraints**	The country context in which the LAA is to operate; social and economic status of Lesotho: poverty, high unemployment rates, low salaries in the public service, professional brain drain into South Africa, poor land management institutional arrangements, weak capacity building, insufficient education and research, land degradation, unplanned settlements, encroachment of settlements onto agriculture land, belief that land is a free gift from God, the political will and changing government due to elections (next National Government coming in 2012).

Table 9.1 LAA CATWOE Elements

9.3.2 Relevant Human Activity Systems Models in the LAA

Human activity system models relevant to the problem situation are selected and used to structure the situation in the LAA as a social system and this is illustrated in Figure 9.4. These systems models are constructed on the basis of the LAA objectives (see Section 7.5.1) as well as the LAA CATWOE presented in Table 9.1. The models are selected based on the world view (see Table 9.1) that land administration systems should be designed to support sustainable development, hence, the role of the LAA in support of sustainable development and economic growth (see Section 7.5.1). The analysis facilitates debate about the LAA as a support system to the achievement of the goals of that world view.

The relevant systems models identified are interrelated in that the LAA as a cadastral system is embedded in the social, economic, political, legal, technical and organisational environment (see Section 6.2).

The LAA as Economic System Model

Based on the objectives of the LAA (see Section 7.5.1) and the world view within which it exists (see W - Table 9.1), the LAA is seen as an economic system. It is a system established

to boost economic growth of Lesotho through generating revenue from its services and products (see Section 7.5.1). The resultant increases in economic growth (see Section 7.5.1) could lead the country to reduce extreme hunger and poverty through delivery of the Millennium Development Goals (see Section 7.2). From an economic perspective, the LAA is a desirable system as it promises economic benefits to the Basotho Nation.

The LAA as Social System Model

The LAA is a social system that is aimed to provide social security to the country (see Section 7.2). This system is related to the LAA economic system. For example, improvements in the economic growth of the country could provide social stability. Boosting economic growth through secure tenure and effective land markets will reduce extreme hunger and poverty and hence improved livelihoods. Formal land registration also provides social security in that conflicts over land ownership and boundaries could be minimised, making every land holder feel secure in her/his land and property rights.

Through the LAA as a social system model, the government aims to improve the quality of life of the Basotho people (see Sections 7.2 and 7.5.1). Drawing from Section 7.3.3, the LAA is also a result of private sector development in the country. Private sector development is expected to create jobs in Lesotho and hence help improve the livelihoods of the Basotho nation. It aims to reduce the high unemployment rate experienced in Lesotho thereby contributing to poverty reduction (see Section 7.2).

The LAA as Political System Model

The political environment within which the LAA is to function is important, hence the inclusion of this system model for the LAA. The LAA is a government agency whose resources should flow from the National Government; its success is therefore, dependent on political support and will (see Section 7.5.4). Since the LAA is a land reform activity plan project designed to take five years (2008 - 2013) (see Section 7.2), its lifespan is also dependent on the political continuity of the ruling government (see Table 9.1). Five years in a democratically elected government is the life span of the ruling government and the discontinuity of the ruling government could have implications for the continuity of the LAA. Lesotho is to have democratic national elections in 2012 and any major change in political leadership could affect the stability of the LAA. The LAA could cease to be effective and

deliver because of the political context in which it operates. In addition, the land reform activity in Lesotho is funded by the MCC (see Section 7.2) and is expected to end in 2013.

The LAA as Legal System Model

Lesotho, like any other country undergoing land reform activity and sponsored by international agencies, had to meet certain conditions before the MCC could release its funding (see Section 7.3.1). The condition was for the country to agree to the reform of its land legal framework (see Section 7.3.1).

The LAA legal framework as shown in Figure 9.4 promotes formal land markets through provision of security of tenure; it also promotes foreign access to land hence foreign investment. This is a positive move for the country as this will enhance promotion of economic growth. LAA also aims to instil knowledge about the land laws among Basotho and to promote security of tenure and formal land markets. This could boost formal land markets, hence economic growth.

The LAA as Technical System Model

Improvements in IT/IS are among the many reasons why land administration systems around the world, especially in developing nations, undergo reform. Automation of land administration processes is therefore, central to the improvement of land administration processes in the country. In the broader land administration systems world view, the LAA is a land information system (see Sections 7.5.1 and 7.5.2). Information technology is central to land issues as processes such as surveying, The technical system model is important as it will promote effectiveness and transparency in LAA land administration processes.

However, the over-reliance of the LAA in IT/IS could make it more expensive to maintain, especially in a country declared poverty stricken such as Lesotho (see Figure 9.4).

The LAA as Organisational/Institutional System Model

The LAA is a new land administration organisation in Lesotho, established out of the land reform activity supported by the MCC (see Sections 7.2 and 7.3). This organisation is designed to be autonomous and maintain a separate existence (see Sections 7.5 and 7.5.1). An autonomous system is expected to be self-sustainable. However, the LAA self-sustainability is dependent on the income generated from sale of products and taxes levied from services

provided and ground rent fees (see Section 7.5.2). This is depended on the use of the LAA by the community in Lesotho and failure to use the system could result in ineffectiveness. The organisational aspects of the LAA have been addressed earlier in VSM analysis in section 9.2.

9.3.3 The LAA in Two Streams of Analysis

The SSM two streams of analysis analyse the cultural and political situation in the LAA. They contribute understanding of the history and current structures of the LAA situation build up from the LAA case study narrative (Chapter 7), the LAA CATWOE elements in Table 9.1, and the LAA conceptual (human activity system) models developed in this section. Figure 9.4, Figure 9.5 and Figure 9.6 illustrate the LAA in two streams of analysis.

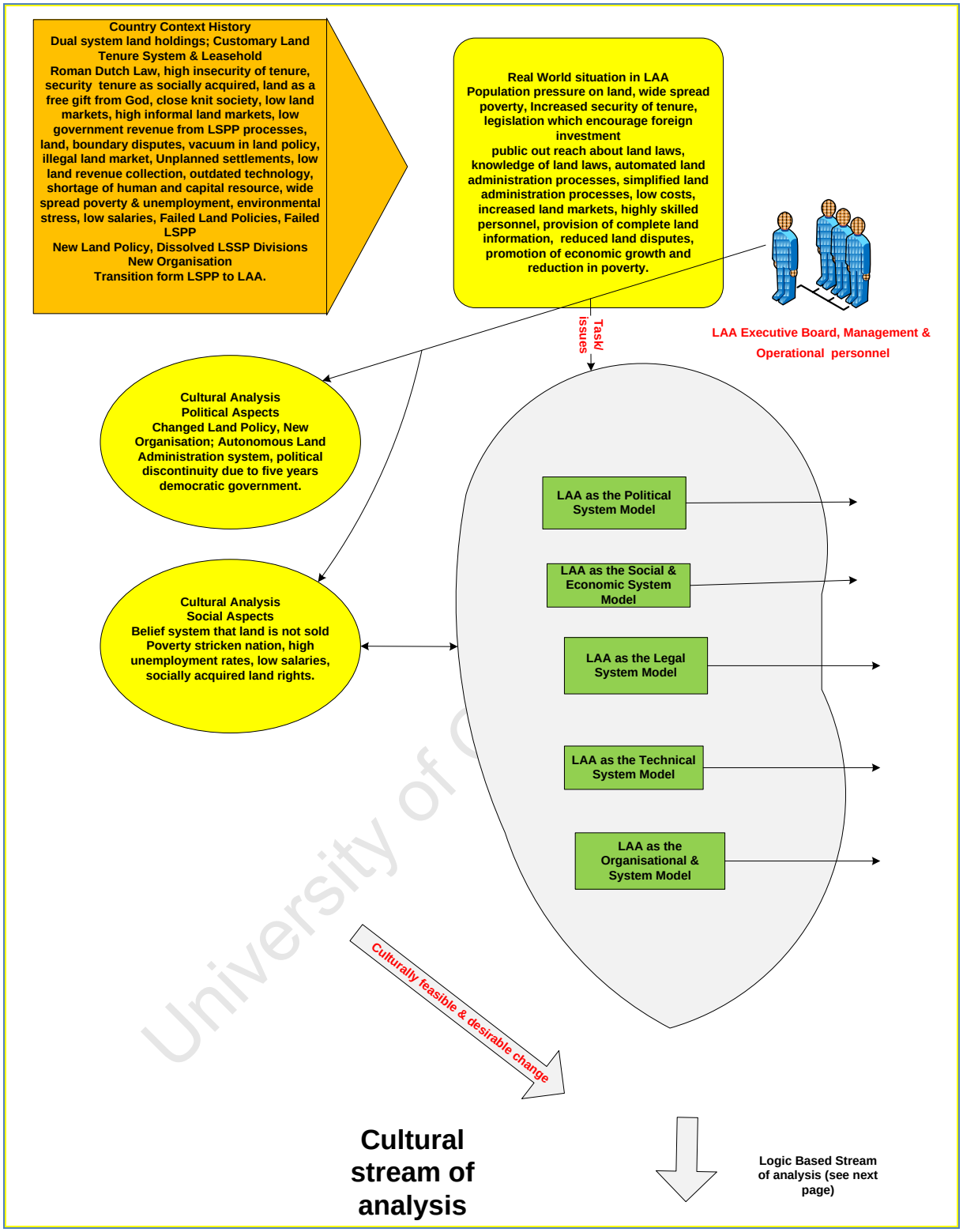

Figure 9.4 The cultural stream of the two streams of analysis of the LAA

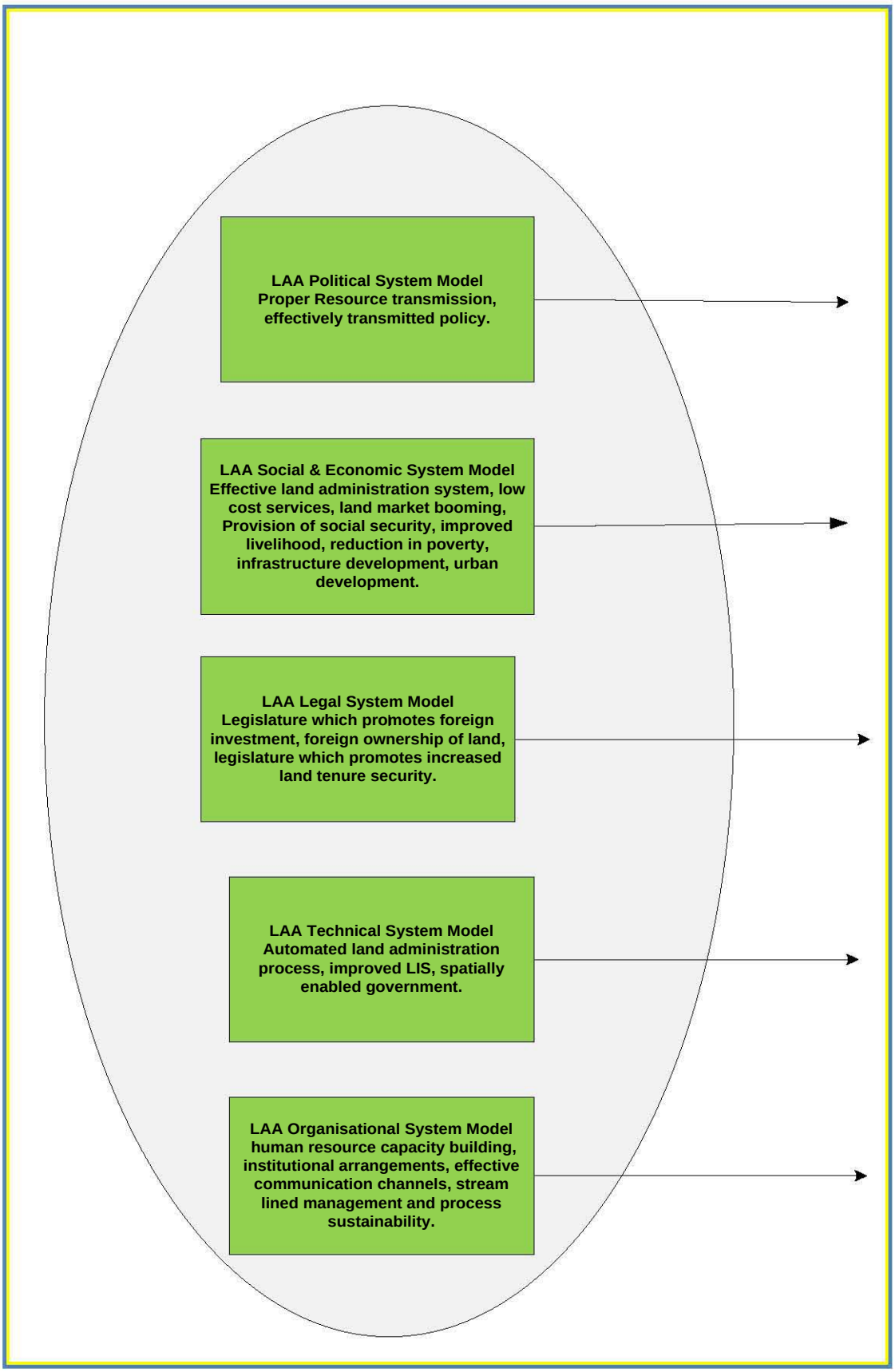

Figure 9.5 The conceptual systems models of the LAA

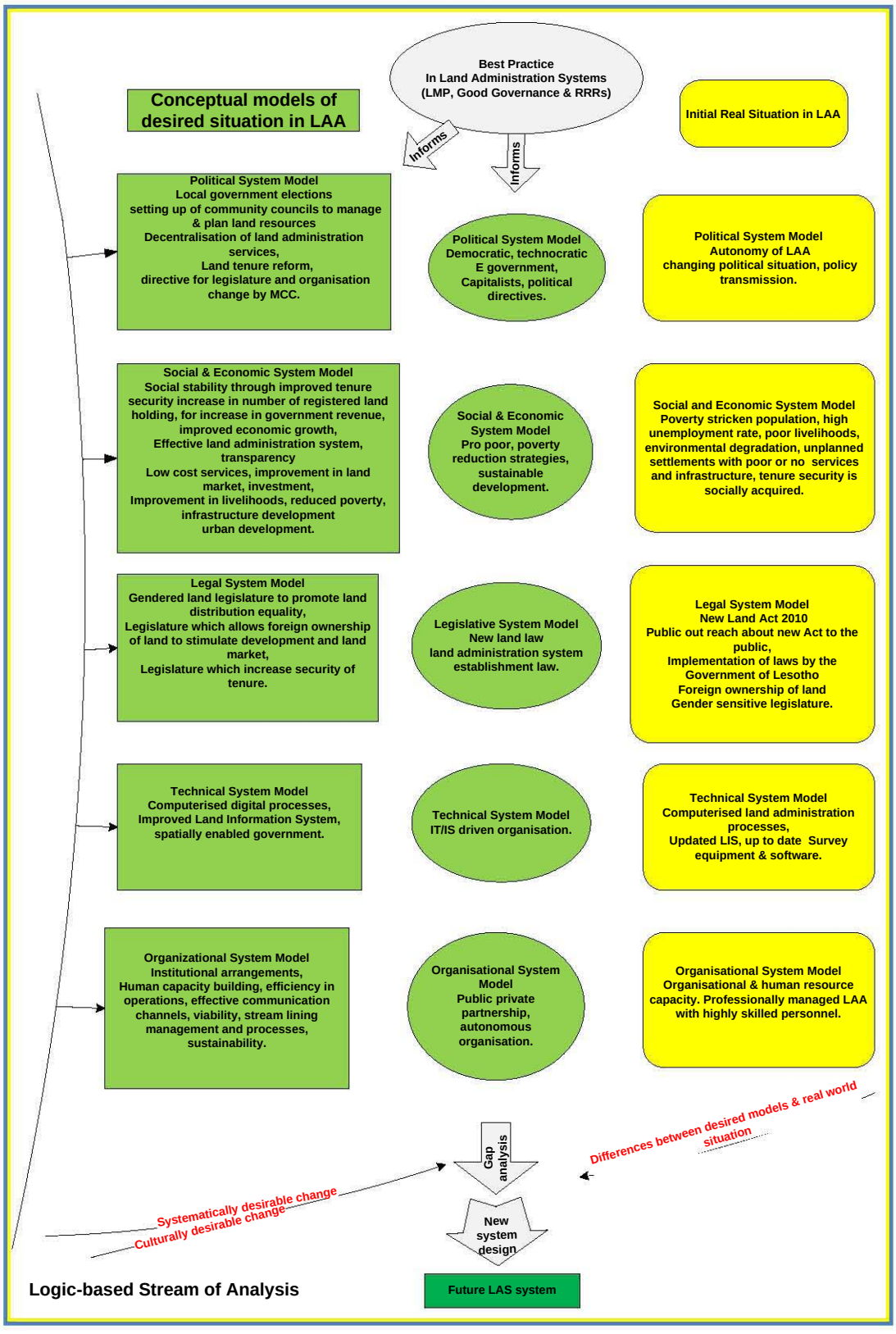

Figure 9.6 The Logic-based stream of analysis in the two streams model of the LAA.

9.3.4 The Cultural Based Stream of Analysis

The cultural-based stream of analysis conveys the LAA through analysis two and analysis three and it is demonstrated through Figure 9.4. Although the LAA conceptual systems models may portray a desired situation in the LSPP logic-based stream of analysis presented in Figure 8.7, this stream analyses the LAA based on the history, culture and social context of the LAA as demonstrated in Figure 9.4. This stream guides a culturally desirable action that needs to be taken to improve the problem situation. The complex situation provided by these multi-faceted environments is crucial to the success of the LAA.

Analysis 2: The Social Situation Analysed

A number of interrelated social aspects affect the functioning of the LAA (Figure 9.4). The social context in which the LAA is to operate composes of the culture (beliefs, values, perceptions, attitudes and norms), economy, political and legal situation prevailing at the time.

Economy and poverty

LAA is meant to improve economic growth through revenue collection from taxes levied on its services and products provisions. Lesotho is a poverty stricken country with high unemployment rates, which is why it is embarking on poverty reduction projects. Although the services of the LAA will be provided at cost (no profit margin), these costs may still be prohibitive to the Lesotho people. Given the economic status of Lesotho as shown in Figure 9.4, (high unemployment rates, low salaries for public servants and low private sector) generating income from land administration processes does not look viable. The feasibility of the LAA generating income which allows for it to become self-supporting is unlikely. Land transactions will simply occur outside of the formal system if it is deemed unaffordable. The LAA could find itself trapped in the same situation as the LSPP given the economic context in Lesotho.

Sections 7.1 and 7.5.1 showed that LAA is designed to be autonomous. Two points are deduced from this. First, LAA will be an effective land administration system with a bundle of benefits (see Section 7.5.1). Autonomous also means that land administration processes will be effective and have benefits for the Lesotho society.

Beliefs and Values and Norms and Perceptions

A system such as the LAA can have a good design but still fail to generate revenue if people do not want to use it. People's perceptions, beliefs, norms and behaviours towards the use of formal land registration systems could determine the usage of the formal LAA system. People's use of the system can neither be controlled nor forced. As shown in Figure 9.4, the widely held beliefs of the Basotho have not been incorporated in the LAA design. There is a possibility that the norms and perceptions of people toward paying for the LAA services could lead to people avoiding the use of the LAA. Figure 9.4 illustrates that historically in Lesotho, land is regarded as a free gift from God. In addition security of tenure is socially acquired. As a result, the Basotho people, in accordance with their perceptions, may refuse to use the formal system in favour of off-record land transactions. The establishment of an informal market can result and the LAA could fail to collect revenue.

Titles to land provide security of tenure and security of tenure may prompt formal land dealings through the LAA, but this can only be used as an incentive. The evidence of a burgeoning informal land market under its predecessor, the LSPP (see Chapter 8), should be seen as cautionary. It indicates that the LAA's objective of collecting revenue and keeping up-to-date land information records (see Section 7.5.1) might be difficult to achieve.

The benefits of the LAA are well understood in this analysis, but a solution aimed at one aspect of a system could result in new sets of problems in other parts of the system. This is called unintended consequences. The over emphasis on tenure security (see Sections 7.5.1 and 7.3.2) could stimulate informal land markets leading to other problems. In a society such as that of the Basotho, whose pride lies at the heart of owning land and shelter, security of tenure could bring about the unexpected results. The environment and behaviour of the Basotho people could change. Because security of tenure stimulates land markets, people could sell their land to meet short term needs. Quick money through land sales might result in landlessness and homelessness. The undesirable result is likely to be the formation of slums in Lesotho, especially in Maseru.

Summary

The researcher foresees the same problem situation expressed with the LSPP projecting into the LAA. The emphasis on revenue collection and economic growth through the LAA objectives could fail to be realised rendering the LAA a white elephant.

The exploration of the LAA situation through use of SSM has allowed for investigations of the internal perceptions, beliefs, norms, attitudes influenced by the history and culture of the people within which the LAA is expected to operate successfully. The complex nature of the environment within which the LAA is to operate is characterised by diverse cultural, beliefs and norms, and particular social and economic aspects. These pose a threat to the success of the LAA.

9.3.5 Analysis 2: The Political Situation Analysed

This analysis concentrates on the feasibility of the LAA within its political context. The LAA effectiveness depends on political will and support. The analysis of the political situation has already been discussed earlier.

9.3.6 The Logic Based Stream of Analysis

The logic based stream of analysis comprises of human activity systems models used to guide learning and debate about the situation so as to guide action that need to be taken. This model is illustrated in Figure 9.6. In this stream, task and issues relevant to the situation are derived from the rich description and constructed as conceptual systems models (see Figure 9.5). Analysis of this stream is undertaken concurrently with the cultural based stream of analysis (Figure 9.4). The inquiry is guided by systems thinking and therefore, provides a systemically desirable action (see Figure 9.6). The conceptual models constructed are then compared to the real world situation in which the LAA is to operate. However, comparing the models is beyond the scope of this thesis. The aim of this analysis is to provide understanding of the situation in the LAA, and not action research.

A Summary of the Analysis of the LAA, Revealed through SSM

- SSM has facilitated analysis of the situation in LAA within its social context. This is developed through the SSM two streams of analysis of the LAA demonstrated in Figure 9.4, Figure 9.5 and Figure 9.6.

- The SSM in analysis of the LAA through the cultural stream of analysis (see Section 9.3.4) also indicates that the LAA design is unlikely to facilitate sustainable development as it fails to be holistic and include the cultural and social aspects of Lesotho expressed in Figure 9.4.

- The LAA design fails to understand the situation in Lesotho (see Figure 9.4) the LAA design is not based on holistic thinking; it is therefore, likely that the problems of the LSPP can telegraph into the LAA. The results also show that the LAA design does not adequately address the problems of the LSPP and it is also likely that LAA will face challenges similar to those experienced by the LSPP discussed in Chapter 8.

- The planned use of IT/IS will not on its own render LAA effective. The SSM analysis has shown that social, cultural and economic change is needed alongside the implementation of the IT/IS in cadastral system (see Section 9.3 and Figure 9.4).

- Incorporating the culture and social context in the LAA design, through the use of SSM could improve the situation and provide culturally and systematically desirable actions (see Figure 9.4 and Figure 9.6).

- Although the conceptual models of a desired situation in the LAA (see Figure 9.5) provide some hope for the LAA, generating government income out of such a system in the cultural-based stream of analysis (see Figure 9.4 and section 9.3.4) could be challenging.

- The SSM tools of analysis have revealed a number of social systems aspects of the LAA which have not been revealed using other analysis tools such as VSM. This research thus supports the use of SSM in land administration system research.

9.4 Analysis of the LAA Using Land Management Paradigm

The LAA is analysed using the LMP framework to investigate its alignment with current land administration theory which aims for sustainable development. This evaluates whether the LAA matches the criteria of the LMP which have been developed by land management experts over time. The LMP design had been identified as the most suitable tool to model the new designs of cadastral systems or those undergoing reform (Williamson *et al*, 2010). Motivation for the use of LMP as analytic framework has been provided in Sections 4.5 and 5.7.

9.4.1 The LAA Design in LMP

The LAA was modelled along with the Lesotho Revenue Authority (LRA) (see Section 7.4). This implies that it was not modelled with reference to a land administration systems model.

The LAA design demonstrates three operational Departments which undertake the functions of a juridical cadastre (see Section 7.5.2 and 7.5.1). These are the Lease and Valuation, Surveys and Mapping and Deeds and Legal Services. The LAA does not have integrated functions of land administration which support global policy on sustainable development. The design of the LAA compared to the LMP design, provides only two paths towards sustainable growth, the land tenure and valuation paths, ignoring the other two paths of land use management and planning and development control.

The LAA is not designed in line with the LMP and its ability to lead Lesotho towards economic growth must therefore, be questioned. The neglect of land use processes (land use planning) and land development processes (physical planning) means that the LAA will not deliver effective land use management and land development control. In relation to the LMP, it is an indication that land markets envisaged in the LAA (see Section 7.5.2) may not develop as expected. The land tenure and land value processes alone do not boost land markets which are also affected by future land use and land development. The physical use of land serves as a major influence on land value. The conclusion is that, viewed from the perspective of LMP, the LAA is unlikely to be an effective system. In the context of the LMP, a modern land administration system should be designed to integrate these functions.

Lesotho can argue that its level of economic development impedes integration of the four functions of land administration as reflected in the LMP. However, the current system of the LSPP had all those functions integrated in one system. It is true that the LSPP has failed to be

an effective land administration system and to deliver all the functions efficiently (see Sections 8.5 and 8.6), but its design is closer to that of the LMP (see Section 8.4) than the proposed LAA design. The reform to the LAA appears to have rejected the notion of incremental and evolutionary change towards what is considered best practices in land administration as reflected in the LMP. The failure of the LAA to treat land as a coherent whole could lead to much more deeper problems than envisaged.

The LAA and Land Information

The LAA lacks integrated land information system containing land tenure, land use, land value and land development (see Sections 7.5.1 and 7.5.2). Failure to include these aspects of land information will result in incomplete availability of land information to users including property investors, the State, and the Basotho people. Incomplete land information can lead to poor decision making, poor land use planning and control, and skewed land markets. These are all undesirable outcomes of an inadequate land information system.

The LAA and Stimulating the Land Market

Despite the fact that the LAA does not undertake the four functions of land administration (see Section 7.5.2) it is meant to support land markets and improve economic growth (see Section 7.5.1). In the context of LMP, land markets are supported if the system in place undertakes the four functions of land administration (see Section 4.5). The recognition that land values are influenced by the economic and physical use of land has been largely ignored in the LAA design. The exclusion of land use and development will affect the ability of the LAA to support land markets and promote economic growth. Security of tenure and an efficient cadastre alone, such as in the LAA design do not boost the land market. The land market is supported by integration of four functions of land administration as mentioned earlier.

In addition, failure of the system to support land markets, could result in the continuation of the informal land market. This will lead to an incomplete and outdated land information system leading to an ineffective LAA. According to the LMP, sustainable development is only attainable when a holistically designed land administration system is in place (see Section 4.5).

A Summary of the Analysis of the LAA, Revealed through LMP

- The study finds the LAA design does not adequately incorporate the international best practices standards in land administration systems designed for sustainable development in the context of LMP.

- In addition, the LAA analysis in LMP showed that the LAA design is not based on modern land administration system's design, as it will deliver only two functions of the four functions of land administration. This suggests that the LAA is incapable of promoting effective land markets, hence may not be an effective land administration system that promotes economic growth, reduce poverty and indirectly lead Lesotho to sustainable development.

- It is also noted that the LAA is unlikely to change the situation expressed in LSPP, as it does not sufficiently addresses the problems of the LSPP in the context of Lesotho as observed from multiple perspective. It also does not confirm to best practices in land administration as far as the RRRs and LMP are concerned.

- From this analysis, there is doubt as to whether revenue generation can be realised by the new system (LAA). An efficient juridical cadastre will be good for Lesotho, but the idea that it will support sustainable growth is questionable. The LAA seems to be designed without understanding of the whole context of Lesotho and without consideration of modern land administration theory.

- The LMP has been used to conceptualise the LAA against best practices in land administration system design. Issues with the newly-established LAA have been identified so as to evaluate whether the LAA design is an improvement on the LSPP design. This tool is useful as it identifies the LAA weaknesses and could be used to direct design improvements.

9.5 Analysis of the LAA using the RRRs

The RRRs (rights, restrictions and responsibilities) are central to the LMP theory and are to be performed by land administration systems aimed at attaining economic growth. This framework has been motivated in Sections 4.5.2 and 5.7.4.

9.5.1 Rights in LAA

Rights in the LAA refer to the rights of property holders and the citizens of Lesotho to land tenure and to land information. The LAA will provide security of tenure to property holders through leasehold. This will be motivated through systematic regularization of land parcels (see Sections 7.5.1, 7.3.2 and 7.5.5). It further envisages distribution of complete and reliable land information so as to boost formal land markets and generate income and promote economic growth (see Section 7.5.1) which will be to the benefit of all Basotho.

9.5.2 Responsibilities in LAA

Responsibilities are interpreted as those of the LAA to the Basotho and the responsibilities of the Basotho to the LAA. The public outreach and the training of people regarding the land policy and land reform will increase knowledge about the responsibilities of the land holders towards paying for land taxes (see Sections 7.3 and 7.3.2). The LAA responsibilities include the processing and maintenance of up-to-date land records, provision of land related data as required, and the calculation of land taxes on formal land parcels, delivery of land tax bills and collection of land tax revenue (see Section 7.5.1).

9.5.3 Restrictions in LAA

The restrictions refer to aspects limiting the actions of the LAA and of the citizens of Lesotho. The main restrictions are found in the legal framework of the Land Act of 2010 and LAA Act 2010. These restrict the functions of the LAA and the use of land by land holders.

The LAA design provides a serious restriction on the LAA functions. It excludes the land use and development functions of land administration system (see Section 7.4) which restricts the LAA from influencing planning and land use. For instance, zoning practices (land use planning) and control of developments (granting of building permits processes) as functions of land administration are excluded in the LAA design. This demonstrates the inability of the LAA design to appreciate and recognise that land values are influenced by the economic and physical use of land and property (see Section 4.5). Land markets are not only affected by secure tenure and values, but are also affected by land use and development. In the context of restrictions, the value of land and property and transfers of these two is determined by proper land use planning and land development. The LAA needs to include these functions, if it is to promote efficient land markets through accelerated transfers and mortgage of land and property.

A Summary of the Analysis of the LAA, Revealed through RRRs

- The findings of this analysis suggest that the LAA adequately addresses the RRRs, except in its restrictions. Another organisation outside of the LAA is tasked with the land use and planning functions, which is counter to the LMP design. This indicates weakness in the LAA design, jeopardising its ability to be an effective cadastral system which delivers the RRRs in land.

- With some changes such as integrating these functions in the LAA design, it could deliver the RRRs as envisaged in the LMP.

- RRRs seem a useful tool in assessing and guiding a design of the land administration system that deliver sufficient and integrated functions of land administration.

9.6 Analysis of the LAA using Principles of Good Governance

This analysis evaluates the effectiveness of governance in LAA based on the principles of good governance motivated in Sections 4.3.3 and 5.7.3. This is dependent on the objectives of the LAA as stipulated in the LAA narrative (Chapter 7).

Principle of Good Governance	LAA Proximity to Good Governance Principles
Legality	The legal frameworks in LAA (see Section 7.3.1) promote security of tenure, formal land markets and investments both for local and foreign people (see Section 7.5.1). This is good practise in good governance.
Security	The LAA will provide security of tenure and complete and reliable land information (see Sections 7.3.2, 7.5.1 and 7.5.5). This is quite an impressive move for Lesotho, as a bundle of benefits are associated with security of tenure (see Section 7.5.1) in good governance principle.
Clarity and Simplicity	The LAA processes will be simple and automated for understanding by the people and for transparency (see Sections 7.3.3 and

	7.5.1).
Timeliness	LAA will provide up-to-date land information to users in a timely manner (see Sections 7.3.3, 7.5.1, 7.5.3).
Accessibility	LAA will be accessible as it will decentralise (see Section 7.5.7), be efficient, and be cost effective (see Section 7.5.1 and Cost below). Accessibility of the land administration system supports good governance.
Cost	LAA land administration processes will be cost effective (low) to encourage formal land markets, hence boost economic growth (see Sections 7.3.3 and 7.5.1). The cost of land administration processes underpins good governance.
Transparency	Automation of processes and public outreach are (see Section 7.3.3) related to transparency which support good governance.
Efficiency and Effectiveness	The LAA structures and processes are designed to promote efficiency and effectiveness, the use of IT/IS is central to delivery as well as the human and capital resources (see Sections 7.5.1, 7.5.2, and 7.5.5).
Empowerment	Section 7.3.2 points to the empowering of the land holders through public outreach and training in land policy and land reform activity (see Sections 7.3 and 7.3.2). The LAA staff will also be empowered through training and mentorship (see section 7.5.1).
Use of Class World Technology	The LAA will depend on technology (see Sections 7.5, 7.5.3) to process, record and deliver LIS and be a Spatial Data Infrastructure (SDI) (see Section 7.5.3). This is best practices in good governance.
Adherence to International Standards	LAA will apply international best practices in land administration (see Section 7.5.1), its functions will be measured and it will also

	initiate research to improve its operations (see Section 7.5.2). These are related to regulation and external auditing which are in line with good governance.
Maintenance of Capacity and Capacity Building	LAA envisages building and maintaining capacity for its staff through training and mentorship (see Section 7.5.1). This will strengthen the LAA; hence good governance will be supported.

Table 9.2 Analysis of the LAA using principles of good governance

A Summary of Analysis of the LAA, Revealed through the Principles of Good Governance

- The findings of this analysis suggest that the LAA will operate in line with the accepted criteria of good governance in land administration. Many aspects of the LAA, as shown in this analysis, underpin the principles of good governance. This suggests that the LAA could be an effective land administration system that is capable of promoting economic growth, hence the LAA looks quite a promising land administration system for Lesotho, and based on this analysis, it is likely to succeed and bring bundle of benefits to the Basotho.

- Whittal's (2011) collation of principles of good governance (see Section 4.3.3) seems a useful tool to evaluate the proposed LAA design against the principles of good governance. Once the LAA has been in operation for a while, an evaluation of its performance against these principles will indicate whether implementation will match the design.

9.7 Triangulation of LAA Analysis

Although the various tools (VSM, SSM, LMP, RRRs and GG) used in analysis of the LAA are sensitive to different aspects of the LAA system, their results in systems' design analysis have been found similar and complementary. They all highlight the design shortcomings of the LAA system. For example, the VSM analysis shows that the LAA design is not self-sustaining (in line with VSM viability); the SSM shows that the LAA fails to deliver a socially, culturally and politically viable system given the history and cultural context of

Lesotho. The LMP reveals that the design shortcomings lie with the failure of the LAA to be a modern land administration system able to deliver the integrated functions of land administration: it excludes some desirable aspects of LMP (development control and land use) in its structure. The RRRs shows that the LAA design does not accommodate development control and land use planning restrictions which is also a prerequisite to an effective land administration system. The LAA has therefore, isolated the component parts of the system rather than integrating them. Triangulation of results from mixed method approaches is thus achieved and construct validity of research is strengthened.

The results of the analysis using the GG principles are complementary. The LAA system is shown to be aligned with the principles of good governance, despite the former analyses pointing to the LAA's poor design. This shows that the GG framework is not sensitive to systems design aspects.

The weakness of VSM (poor in analysing the social and cultural aspects) in this analysis, have been accommodated through the complementary tools of SSM (which excludes the hard material and focus on cultural, social and political), as has been advised in Whittal (2008).

9.8 Conclusion

This analysis explored successfully, the use of mixed method approaches in the study and analysis of the LAA. It therefore, lends support to Whittal (2008)'s view regarding suitability of mixed methods approach in cadastral systems research, design and evaluation.

Chapter 10. Conclusions and Recommendations

10.1 Introduction

This chapter conveys the main conclusions and recommendations of this thesis. The chapter is structured in line with the research questions as formulated in Chapter 1 (see Section 1.4). Table 10.1 provides a summary of the links between the research questions and references to the sections where these questions are addressed.

Research Questions	Achievements
In researching a case of a cadastral system such as that in Lesotho, what research methodologies are appropriate and why?	Suitable methodologies are identified from literature in Chapter 2, are explained in Chapter 3 and Chapter 4, and are argued in terms of research methodology in Chapter 5.
What is the current status of the cadastral system in Lesotho?	The current status of the cadastral system is developed in the LSPP narrative in Chapter 6.
How does the cadastral system of Lesotho compare to accepted frameworks for cadastral system design and operation?	Modelling and analysis of LSPP against these frameworks is conducted in Chapter 8.
How does the proposed land administration reform process seek to change the current status of the cadastral system, and lead Lesotho towards sustainable development?	The current status of the cadastral system is developed in the LAA narrative in Chapter 7.
How does the proposed cadastral system of Lesotho compare to accepted frameworks for cadastral system design and operation?	Modelling and analysis of LAA against these frameworks is conducted in Chapter 9.

Is the proposed cadastral system in Lesotho likely to address the problems inherent in the current system?	Assessment of the LAA's ability to address problems identified in LSPP is conducted in Chapter 9.

Table 10.1 A summary of the links between the research questions and where they are addressed.

10.2 Conclusions

This research explored the challenges and opportunities in the land administration system in Lesotho and major conclusions are drawn from the findings of the study. This section first present the conclusions drawn from adopted methodological framework, as well as the findings drawn from the use of best practices framework in understanding and analysing the cadastral system of Lesotho. Lastly, the conclusions on the case study and analysis of the Lesotho cadastral system, LSPP and LAA are drawn.

10.2.1 Methodological Framework

The mixed method approaches adopted in this research complement each other very well. They all facilitate deep understanding of the Lesotho cadastral system under study, since investigating the case from a number of perspectives is facilitated. Uses of multiple sources of data, combined with multiple methods of modelling and analysis (Chapter 8 and Chapter 9), enables triangulated results, strengthening construct validity of this research.

In addition, each of the tools is sensitive to particular aspects of the system and not to others. Hence, the use of a suite of tools leads to a holistic approach to understanding, evaluating and designing of the Lesotho cadastral system. An example is the use of systems tools (VSM and SSM) in combination. These tools complement each other in that SSM is strong in addressing the social, political and cultural aspects of a case, while VSM's strength is in its ability to facilitate analysis and diagnosis of the organisational structures, relationships and processes. The use of both in analysing this case study thus strengthens analysis results. Therefore, this research has come to a conclusion that the systems approaches (VSM and SSM) are suitable in research involving cadastral systems and in directing designs of effective cadastral systems which are capable of maintaining their identity and adapting rapidly to a changing environment. These tools of analysis also indicated ways in which the LSPP and the LAA designs could be improved in order to meet the criterion of viability (see Figure 8.3 and Figure 9.3).

10.2.2 Frameworks to Gauge Best Practices in Land Administration

The LMP, good governance and RRRs analytical frameworks are identified as suitable for the analysis of a cadastral system. They serve as a basis for evaluating proximity of real land administration system against best practices in land administration. The results of these analyses reveal additional aspects not revealed by VSM and SSM alone, and are considered complementary. The success of the land administration system in Lesotho is related to its design in line with best practices standards.

10.2.3 The LSPP Case Study and Analysis

This research found the LSPP ineffective because of the structural aspects, processes, communication, as well as the socio-economic, cultural and political aspects underlying it. Therefore, the following conclusions about the LSPP are drawn.

This study concludes that that the LSPP ineffectiveness results from poor communication, insufficient IT/IS and poor policy transmission, which is indicated by shortage of human and capital resources. Ineffective land administration in Lesotho results from poor integration of processes, poor communication and lack of IT/IS. These inefficiencies have been observed from the analysis of LSPP using VSM, LMP and RRRs in Chapter 8.

In addition, LSPP is poorly designed in terms of management, regulation and audits as reflected in LSPP VSM modelling (Figure 8.2 and Figure 8.3). This is because managers are engaged in the lease and land transactions processes, jeopardising the regulation, control and monitoring of the LSPP, and thus making it unsustainable and ineffective. It is unlikely to be able to respond to its changing environment.

LSPP is unable to meet best practices standards in land administration as it resembles a weak governance system (see Section 8.5), as it fails to provide security of tenure and complete land information to support land markets. The RRRs distribution is poor in LSPP and success depends on the efficient distribution of land interests. LSPP, therefore, fails to deliver effective land administration, and as such, it does not facilitate economic growth in Lesotho (see Section 8.6).

The LSPP ineffectiveness results from non-holistic structure which does not adequately address cultural issues. This has been revealed in SSM analysis (see Section 8.3). The operation of the LSPP as a business system which collects revenue for the government is not

supported in the culture, history and social and economic status of the Basotho people. Success depends on current cultural and socio-economic situation of Lesotho.

A single interesting feature of the LSPP is seen in its design matching with the LMP design. LSPP is well designed in terms of its' incorporation of four land management functions (LMP), although poor policy transmission inhibits optimum performance. The LSPP stands a good chance of being an effective land administration system in the context of LMP.

10.2.4 The LAA Case Study and Analysis

Although a full analysis of the LAA is not possible because it is still in the process of being established and is not yet fully operational, the findings of this research suggest a number of interesting conclusions about the LAA, based on the LAA analysis in Chapter 9. In the context of this research, many undesirable aspects inhibit the LAA to be a corrective measure for the LSPP as envisaged in its objectives. It is therefore, not likely to change the situation and problems inherent in the LSPP. The following conclusions support this statement.

The LAA is not culturally aligned to Basotho society and not sustainable because in the context of SSM, collecting revenue from poor people is not viable. LAA is, therefore, likely to fail to meet its objectives of reducing poverty through revenue generation.

The LAA is poorly designed. The VSM, LMP and RRRs analysis of the LAA, show that LAA is likely to be ineffective because of its poor structural design. It is not in line with international best practices as it fails to incorporate the four functions of land administration. It represents a design which is non-holistic and uses simple processes of surveying, mapping and registration which are outdated compared to LMP design. LAA also fails to adequately distribute the RRRs in accordance with the LMP best practices framework, therefore, land markets will not be supported to promote economic growth.

This study further concludes that although the LAA was designed to be autonomous, it is not self-sustaining through structural viability. It is, therefore, found unable to respond to its changing environment, as envisaged in viable system modelling. For instance, LAA is poorly designed in terms of operation, management, regulation and audits (see Figure 9.2 and Figure 9.3). This suggests that LAA might be autonomous by accident and not by design.

An interesting element of the LAA lies in its strength to meet the best practices standards in land administration by supporting good governance principles. This conclusion sets a scene

for the LAA success and thus brings some hope for the LSPP users and the government of Lesotho, as LAA seems to address the weak governance experienced with the LSPP (see Section 9.6).

Overall, the LAA is not a desirable corrective measure for the failures of the LSPP and would not boost economic growth and reduce poverty as a result. LAA has appeared to be a simple solution to complex and complicated matters found in LSPP analysis. Success depends on current cultural and socio-economic situation of Lesotho as well as an organisational structures, land policy and processes. Hence, the LAA situation could be changed through improvements in design along with the findings of this research.

This study has, to a greater extent, addressed its underlying objectives and the research questions. The study contributes to cadastral systems theory and could guide future designs for effective cadastral systems that are in line with good international practice, are viable and culturally desirable, especially in the context of developing countries, such as Lesotho.

10.2.5 Comparative Analysis of the Case Study Results Using Mixed Methods

This research has assessed the capacity of the land administration system of Lesotho to deliver effective and efficient land administration service within the accepted tools of systems thinking and best practice frameworks in land administration. Methodological and discipline triangulation (see Sections 3.5.5 and 5.5.4) is achieved through the analysis of the LSPP and LAA using a mixed method approach. The use of mixed methods contributes to the rich and holistic understanding of the Lesotho land administration system from different perspectives.

Table 10.2 shows triangulation of analytical results of the Lesotho land administration system design through the mixed method approaches.

CASE STUDY	*VSM*	*SSM*	*LMP*	*RRRs*	*GG*
LSPP Design	Not self-organising system	Not socially and culturally viable	Land administration functions not integrated	Poor and insufficient distribution and management of RRRs (not integrated)	Weak governance
LAA Design	Not an autonomous system	Inadequate design given cultural and historical context	Non-holistic: excludes functions of land development control and land use	Excludes restrictions. Insufficient accommodation of RRRs	Enhances good governance

Table 10.2 A comparative analysis of the case study results

10.3 Recommendations

Methodological triangulation has been successfully achieved and both LSPP and LAA designs have been found to have shortcomings through mixed method approach, therefore, they need be improved. Based on the conclusions drawn from the findings of this research, the following recommendations are made:

10.3.1 Improvements to the LSPP

LSPP needs re-engineering particularly in the areas of processes design, streamlining of management, policy transmission (resource flow) and external and internal audits (see Figure 8.3). On improvements of aspects identified though VSM, SSM and RRRs such as design, communication, incorporating culture and social aspects in design, improvements in its policy and human and capital resources could make it more effective.

Furthermore, providing LSPP with sufficient resources is crucial, so that it can implement the new technologies and the provision of the Land Act of 2010. These policies need to be sustainably entrenched in order to improve communication channels between LSPP and its elements.

It is recommended that the government should not focus on technological change alone to improve the land administration system, but that design aspects of the LSPP based on the conclusions of this study (see Section 10.2) be incorporated since they will not be expensive to implement compared with the costs of establishing a new system.

The VSM modelling of LSPP (VSM anti-oscillations Chart 3, Figure 8.3) set the scene on how the system can effectively respond to a changing unstable environment and make it immune to changes in land policies. This facilitates the VSM design of the land administration system which is capable of maintaining identity even in a changing complex environment. Therefore, Figure 8.3 – Chart 3 of the VSM for the LSPP shows proposed areas for change, and are indicated with thicker borders and in the text of that diagram (Figure 8.3).

10.3.2 Improvements to the LAA

The success of the LAA is not yet known, the results of this research, however, suggest that it is likely to fail to achieve its objectives. Although its full performance can be evaluated upon its operation, the study recommends that the LAA design be improved though the use of VSM (Figure 9.3; the proposed areas for change for the LAA are shown in VSM Chart 3 of the LAA, and are indicated with thicker borders and in the text of that diagram), SSM, LMP, RRRs, and to adequately addresses various aspects highlighted by these tools and lead Lesotho to sustainable development (see Sections 9.2, 9.3, 9.4 and 9.5).

Overall, this study recommends that the LSPP design be improved rather than continuing the move to the LAA design. The LAA design is not holistic and inclusive of all aspects of the cadastral system. In addition, many weak aspects of the LSPP are carried through into the LAA design.

The LAA seems to address symptoms of the failure of LSPP, rather than deeper causes which can be linked to a non-holistic approach. Socio-cultural change is needed alongside the implementation of LAA. These shortcomings could be addressed with reference to the results of the analysis in this thesis.

This study has successfully and rigorously undertaken a detailed case study and analysis of LSPP and the proposed LAA systems in Lesotho and in the process has answered the research questions and achieved the objectives of the research.

10.3.3 Further Research

Inclusion of other Aspects of the Land Administration System

Further research is required to understand the survey, valuation, transfers, mortgage, the calculation and billing of ground rent processes of the LSPP in more detail.

Longitudinal Study of the LAA Once Operational

Once the LAA is fully operational, say after five years, the study should be extended to include an analysis of its actual, as opposed to proposed, functioning.

Analysis of Land Administration Reform Change Processes

The change processes (LSPP to LAA) have also not been included in this research. Although this process is underway, a reflection on the performance of the change process would provide useful data for enhancing the sustainability of the reform process.

References

Antonio, D. (2008), *Instituting Good Governance Principles in Land Tenure and Administration – A Key Step towards Urban Development and Social Cohesion, Southeast Asian* – German Summer School, 2008, Bangkok and Chiang Mai, Thailand, 17-29 February 2008.

Barry, M. (1999), *Evaluating Cadastral Systems in Periods of Uncertainty: A Study of Cape Town's Xhosa-Speaking Communities*, PHD Thesis, University of Natal, Durban, South Africa.

Barry, M. (2005), "Applying the Theory of Planned Behaviour" to Cadastral Systems, *Survey Review,* Vol. 38, No. 396, pp. 124 – 137.

Barry, M., Fourie, C. (2002), "Evaluating Cadastral Systems in Uncertain Situation: a Conceptual Framework Based on Soft Systems Method", *International Journal of Geographical Information Science* Vol. 16, No.1, pp. 23 - 40.

Baxter, P., Jack, S. (2008), *Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers, the Qualitative Report,* Vol.13, No.4, pp. 544-559.

Beer, S. (1995), *Diagnosing the System for the Organisation, the Managerial Cybernetics of organisation*, Johns Wiley and Sons Ltd, Chichester.

Bell, C. K. (2006), "World Bank Support for Land Administration and Management: Responding to the Challenges of the Millennium Development Goals, Shaping the Change", *Proceedings of the XXIII FIG Congress,* Munich, Germany, Online accessible: www.fig.net/pub/vietnam/papers/ps01/ps01_bell_3750.pdf, Last accessed 10 July 2011.

Bennett, R. M., Wallace, J., Williamson, I. (2006), "Managing Rights, Restrictions and Responsibilities Affecting Land, *Combined 5th Trans Tasman Survey Conference and 2nd Queensland Spatial Industry Conference* , 18-23 September 2006, Cairns.

Bennett, R., Wallace, J., Williamson, I. (2005), "Achieving Sustainable Development Objectives through Better Management of Property Rights, Restrictions, and Responsibilities", *Expert Group Meeting on Incorporating Sustainable Development Objectives into ICT Enabled Land Administration Systems*, 9-11 November 2005, The University of Melbourne, Australia.

Bennett, R., Wallace, J., Williamson, I. P. (2005), "Integrated Land Administration in Australia", *Proceedings of the Spatial Sciences Institute Biennial Conference*, pp. 12-16, September, 2005, Melbourne, Australia.

Bennett, R., Wallace, J., Williamson, I. P. (2008), "Organising Land Information for Sustainable Land Administration", *Land Use Policy,* Vol. 25, No. l., pp. 126-138, Melbourne, Australia.

Berman, B., Tettey, W. (2001), "African States, Bureaucratic Culture and Computer Fixes", *Public Administration and Development*, Vol. 21, pp. 1-13, John Wiley and Sons.

Bogaerts, T., Williamson, I. P., Fendel, E. M. (2002), "The Role of Land Administration in the Accession of Central European Countries to the European Union", *Land Use Policy*, Vol. 19, No.1, pp. 29-46,

Bogaerts, T., Zevenbergen, J. (2001), "Cadastral Systems–Alternatives", *Computers, Environment and Urban Systems*, Vol. 25, pp. 325-337.

Brocklesby, J., Cummings, S. (1996), "Designing a Viable organisation Structure", *Long Range Planning*, Vol. 29, No. 1, pp. 49-57, Elsevier Science Ltd.

Checkland P.B., Scholes, J. (1990), *Soft Systems Methodology in Action*, John Wiley and Sons, Ltd, Chichester, UK.

Checkland, P. B. (1981), *Systems Thinking, Systems Practice*, John Wiley and Sons, Chichester, UK.

Checkland, P. B. (1999), *Soft Systems Thinking, Systems Practice*: *Includes a 30-year Retrospective*, Johns Wiley and Sons, Ltd, Chichester, UK.

Dale, P., McLaughlin, J. D. (1999), *Land Administration*, Oxford University Press, UK.

Dale, P. F., McLaughlin, J. D. (1988), *Land Information Management: An Introduction with Special Reference to Cadastral Problems in Third World Countries*, Clarendon Press, Oxford.

Denzin, K. N., Lincoln, Y. S., (Eds.) (1998a), *The Landscape of Qualitative Research*, Sage Publications, London.

Denzin, K. N., Lincoln, Y. S., (Eds.) (1998b), *Strategies of Qualitative Inquiry*, Sage Publications, London.

Donker, P. (2010) "Lesotho, Reducing Poverty through Economic Growth", *Abroad*: *Periodical Newsletter of Kadaster International*, December, 2010, p. 1.

Elsenhardt, K., Graebner, M. E. (2007), "Theory Building from Cases: Opportunities and Challenges", *Academy of Management Journal*, Vol. 50, No. 1, pp. 25-32.

Enemark, S., Williamson, I., Wallace, J. (2005), "Building Modern Land Administration Systems in Developed Economies", *Journal of Spatial Science*, Vol. 50, No. 2, pp. 51-68, Perth, Australia.

Enemark, S. (2005), *The Emerging Land Management Paradigm, A Major Challenge for the Global Surveying Community*, RICS Evening Lecture Series, RICS, London.

Enemark, S. (2007), "Land Management in Support of the Global Agendas", *V International Congress Geomatica on Geomatics for the Developmen*t, pp. 12-17, February, 2007, Havana, Cuba, Online accessible: http://www.fig.net/council/enemark_papers/enemark_havana_paper.pdf, Last accessed 17 March 2011.

Enemark, S. (2010) "The Evolving Role of Cadastral Systems in Support of Good Governance" *FIG Commission 7 Annual Meeting, Open Symposium*, 9 September, 2010, Karlovy Vary, Czech Republic, Online accessible: http://www.fig.net/council/president_enemark.htm, Last accessed 10 August 2011.

Espejo, R., Gill, A. (1997), *The Viable System Model as a Framework for Understanding organisations*, Phrontis Ltd, Online available: www.phrontis.com, Last accessed November, 2009.

ESRI (2006), *ArcGIS 9, ESRI Data and Maps, Media Kit*, GIS, ESRI, Newyork.

FAO (2007), *Good Governance in Land Tenure and Administration*, FAO Land Tenure Series, No. 9, Rome, Online accessible: http://www.fao.org/docrep/101/91179e00.htm, Last accessed 18 July 2010.

FIG (1995), "The FIG Statement on the Cadastre", *International Federation of Surveyors Publication*, No. 11, Canberra, Australia, Online available: http://www.fig7.org.uk/publications/cadastre/statement on cadastre.html, Last accessed 8 July 2009.

Forrester, J. (1995), "Counterintuitive Behaviour of Social systems", *Operational Research, Productivity* Press, Portland, Online accessible: http://wwwu.uniklu.ac.at/gossimit/pap/countejf.pdf, Last accessed 20 April 2010.

Heffron, F. (1989), *Organization Theory and Public Organisations: The Political Connection*, Prentice Hall, Englewood Cliffs, New Jersey, Online accessible: http://adh.sagepub.com/content/3/3/366.full.pdf, Last accessed 10 December 2010.

Hilder, T. (1995), The Viable System Model, *Presentation*, Vol.1, No. 03, Cavendish Soft Ware LTD, Online accessible: http://project.comex.ru/down/vsm.pdf, Last accessed 17 May 2010.

Iatau, M. D. Williamson, I. (1997), *An Introduction to the Use of a Case Study Methodology to Review Cadastral Reform in Papua New Guinea*, National Research Institute Publication,

Introduction to the Land Administration Authority, LAA, Online accessible: www.laa.org.ls, Last accessed 12 August 2011.

Jackson, M. C. (2003), *Systems Thinking: Creative Holism for Managers*, John Wiley and Sons, Chichester.

Kaufmann, J. (2002), *Cadastre 2014: Vision for Future Cadastral system*, Seminar 2. Coordination Initiatives,

Key Informants Interviewees A - S. (2009), Employees of Land Surveys and Physical Planning, Deeds Registry and the Land Reform Project Implementation Unit in Lesotho, The names of the individuals interviewed and their positions in the organisation cannot be revealed.

Kuchinke, K. P. (2001), *Metaphors and Paradigms for HRD Research and Practice, Advances in Developing Human Resources, Academy of Human Resource Development*, Sage Publications, Online accessible: http://adh.sagepub.com/content/3/3/366., Last accessed 20 July 2011.

Lesotho Government (2000), *Land Policy Review Commission Report: A Contrast between Good and Poor Land Management*, Lesotho.

Lesotho Government (2006), *Terms of Reference, Consultancy for Modernization and Improvement of the Land Administration in Lesotho, MCA Report*, Lesotho.

Lesotho Government (2006), *The Official SADAC, Trade and Industry Financial Services and Investment Review*, Lesotho Government,

Lesotho Government (2007), *Economic Review*, No 83, Central Bank of Lesotho, Lesotho.

Lesotho Government (2007), *Lesotho Land Use Settlements Technical Manual*, GTZ and Ministry of Local Government and Chieftainship, Lesotho.

Lesotho Government (2010), *LAA Act 2010*, No. 9 of 2010, Government Printing, Lesotho.

Lesotho Government (2010), *Land Act 2010*, No. 8 of 2010, Government Printing, Lesotho.

Mabesa, M. J., Whittal, J. (2011), "Analysis of the Current Cadastral System in Lesotho, Using Viable System Modelling (VSM)", *Proceedings of the AfricaGeo Conference on Developing Geomatics for Africa, Cape Town*, South Africa, 31 May – 3 June 2011, Online Accessible: http://africageodownloads.info/096_mabesa_whittal.pdf, Last accessed 20 August 2010.

Manzoor, S., Taimur, A., Qureshi, T. A., Muhammad, D. (2009), *A Comparison between Cadastre 2014 and Cadastral Systems of different Countries*, LUMS, DHA, Pakistan.

MCC (2008), *Reducing Poverty through Economic Growth*, MCC, Online accessible: www.mcc.gov, Last accessed 5 May 2010.

Meelun, G. (2008), *Modernisation and Computerisation of the Mauritian Cadastre*, Undergraduate Thesis, School of Architecture, Planning and Geomatics, Geomatics Division, University of Cape Town, South Africa.

Mingers, J. (2006), *Realising Systems Thinking: Knowledge and Action in Management Science*, Springer.

Musungu, K. (2005), *Benchmarking the South African Cadastre against Cadastre 2014*, Undergraduate Thesis, School of Architecture, Planning and Geomatics, Geomatics Division, University of Cape Town, South Africa.

Neuman, W. L. (2000), *Social Research Methods: Qualitative and Quantitative Approaches*, Allyn and Bacon, London.

Nkwae, B. (2006), *Conceptual Framework for Modelling and Analysing Peri-urban Land Problems in Southern Africa*, PhD Thesis, Department of Geodesy and Geomatics Engineering, University of New Brunswick, Fredericton, New Brunswick, Canada.

Pelto J. P., Pelto, G. H. (1978), *Anthropological Research: The Structure of Inquiry*, Second Edition, Cambridge University Press, New York.

Physical Planning Division (2000), *Physical Planning and Land Use Planning Manual*, Department of Lands Surveys and Physical Planning, Lesotho.

Rakai, M. (2005), *A Neutral Framework for Modelling and Analysing Aboriginal Land Tenure Systems*, PHD Thesis, Department of Geodetic Engineering, University of New Brunswick, Canada.

Reid, J. I., Gray, D. I., Kelly T. C., Kemp E. A. (1999), "An Application of SSM in the On-Farm Labour Situation in the New Zealand Dairy Industry", *Systems Research and Behavioural Science*, Vol. 16, pp 341–350, John Wiley and Sons, Ltd, New Zealand.

Samsudin, S. (2011), "A Review of organisational Arrangements in Malaysia Land Administration System Towards Good Governance: Issues and Challenges", Bridging the Gap Between Cultures, *FIG Working Week*, 18-22 May 2011, Marraketh, Morocco, Online accessible: www.fig.net/pub/fig2011/.../ts07b_salfarina_laycheng_et_al_4853.pdf, Last accessed 10 August 2011.

Silva, M. A., Stubkjaer, E. (2002), "A Review of Methodologies Used in Research on Cadastral Development", *Computers, Environment and Urban Systems*, Vol. 26, pp. 403 – 423, Pergamon, Denmark.

Swedesurvey (2006), *The Status of Land Information Systems and Land Registration Systems in Lesotho, Inception Report*, Ministry of Finance and Development Planning, Lesotho.

Ting, L., Williamson, I. P. (2000), "Spatial Data Infrastructures and Good Governance: Frameworks for Land Administration Reform to Support Sustainable Development", *Proceedings of the Fourth Global Spatial Data Infrastructure Conference*, Cape Town, South Africa, 13-15 March 2000.

UN (2007), *Workshop on Land Administration for Sustainable Development*, Quebec, Online accessible: http://www.fig.net/commission7/newsletters/QuebecWs2007.pdf, Last accessed 20 November 2009.

UNECE (1996), *Land Administration Guidelines with Special Reference to Countries in Transition*, United Nations Economic Commission for Europe, ECE/HBP/96, Geneva, Online accessible: http://www.ica.coop/house/part-2-chapt4-ece-landadmin.pdf, Last accessed 10 February 2009.

UNECE (2003), *Land Administration Review - Russian Federation*, UNECE, Economic and Social Council.

UNECE (2005), *Land Administration in the UNECE Region, Development Trends and Main Principles*, UNECE, Geneva.

UNFIG (1999), *The Burthust Declaration on Land Administration for Sustainable Development*, FIG Publications Series, No. 21, Burthust, Australia.

UNFIG (1999), *Workshop on Land Tenure and Cadastral Infrastructures for Sustainable Development*, FIG Office, Copenghem.

UN-Habitat (2005), *Land Tenure Housing Rights and Gender in Lesotho: Law Land Tenure and Gender Review*: *Southern Africa*, Nairobi Kenya, Online accessible: www.unhabitat.org, Last accessed 15 May 2010.

UN-Habitat (2008), *How to Establish an Effective Land Sector, United Nations Human Settlements Program*, Nairobi, Kenya, Online Accessible: www.unhabitat.org, Last accessed 10 November 2010.

University of Cape Town, (2010), *Faculty of Engineering and Build Environment Code for Research Ethics*, UCT, South Africa, Online accessible: www.uct.ac.za, Last accessed 15 July 2010.

Urban Institute (2008), *Proposal for Establishment of an Autonomous Land Administration Authority in Lesotho: Functions, Structure, Funding Sources and Financial Sustainability, Final Report*, MCA, Lesotho, USA, Washington.

Wallace, J., (2010), *Land Acquisition in Developing Economies*, FIG Article of the Month, February 2010, Online accessible: http://www.fig.net/pub/monthly_articles/february_2010/february_2010_wallace.pdf, Last accessed 12 May 2011.

Whittal, J. (2008), *Fiscal Cadastral System Reform, A Case Study of the General Valuation Project in the City of Cape Town*, PHD Thesis, Calgary, Alberta.

Whittal J. (2011), "The Potential Use of Cellular Phone Technology in Maintaining an Up-to-date Register of Land Transactions for the Urban Poor", *Potchefstroom Electronic Law Journal*, Vol. 14, pp. 9-11.

Williamson I. P. (2000), "Best Practices for Land Administration Systems in Developing Countries", *International Conference on Land Policy Reform*, Jakarta, 25-27, pp 1-32. http://repository.unimelb.edu.au/10187/1253.

Williamson, I. P. (2001), "Land Administration "Best practices: Providing the Infrastructure for Land Policy Implementation", *Journal of Land Use Policy*, Vol.18, No.4, pp. 297-307.

Williamson, I. P., Ting, L. (2001), "Land Administration and Cadastral Trends: A Framework for Re-Engineering", *Computers, Environment and Urban Systems*, Vol. 25, pp. 339-366.

Williamson, I. P., Ting, L. (2001), "Cadastral Systems-Re-engineering", *Computers, Environment and Urban Systems*, Pergamon, Vol. 25, pp. 339-366.

Williamson, I. P., Enemark, S., Wallace, J., (Ed.) (2005), "Sustainability and Land Administration Systems", *Proceedings of the Expert Group Meeting*, Melbourne, Australia, Online accessible: www.csdila.unimelb.edu.au/publication/books/EGM/EGMbook.pdf, Last accessed 13 June 2010.

Williamson, I. P., Enemark, S., Wallace, J., Rajabifard, A. (2008), "Understanding Land Administration Systems", *International Seminar on Land Administration and Issues in Asia and the Pacific Region*, 1-11, Kuala Lumpur: FIG, Malaysia.

Williamson I., Enemark S., Wallace J., Rajabifard A. (2010), *Land Administration for Sustainable Development*, ESRI Press Academic, Redlands, California.

Zakout, W., Wehrmann, B., Torhonen, M. P. (2006), *Good Governance in Land Administration: Principles and Good Practices*, The World Bank, Washington.

Zevenbergen, J, A. (2004), "A Systems Approach to Land Registration and Cadastre", Nordic *Journal of Real Estate Research*, Vol. 1, Deft University of Technology, Netherlands.

Zevenbergen, J. A., Bogaerts, T. (2001), “Cadastral Systems Problems - Alternatives to Solutions”, *Computers, Environment and Urban Systems*, Vol. 25, pp. 325-337.

Yin, R. (2003), *Case Study Research - Design and Methods*, third edition, Applied Social Research Methods Series, Vol. 5, Sage Publications, London.