Analysis of the Lesotho cadastral system Part 1

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The case study strategy and viable systems modelling (VSM) can be used to understand and analyse the structures and processes of a cadastral system. This article presents and analyses the current, pre-reform, cadastral system of Lesotho using this methodology. The findings suggest that the current cadastral system in Lesotho has the potential to function effectively while maintaining self-identity, even under government bureaucracy administration, and without the introduction of an entirely new structure.

An effective land administration system is important in the context of sustainable development [1, 2] and is essentially about good governance [1]. The responsibility of the government is to build effective land administration infrastructure and manage the land administration system effectively [3]. Decision making and implementation in land administration system are central to a country’s government [3]. The government should therefore be accountable in order for the land administration system to be successful [3]. The administration of land involves business processes although, in most cases, it is conducted by government institutions [1]. Land policy formulation and implementation are of equal importance and land administration processes should be in line with sustainable development goals.

Most developing countries, including Lesotho [4], fail to generate sufficient revenue from land administration systems [2]. Consequently, there is a pressing need to re-engineer current land administration systems, not only to generate revenue, but also to make them evolve to cope with the increasing complexity of the humankind-land relationships while addressing the goals of sustainable development [3].

Lesotho, like other developing countries, has embarked on a process of land administration system reform in order to make the system effective and capable of leading the country on a path of sustainable development [5]. As part of the preparation for reform, Swede Survey was appointed as consultants to review the system in operation. They reported [4] that the systems were slow, inefficient, expensive, and restrictive. Also, that they lacked transparency and were incomplete. These criticisms were linked to complicated workflows and insufficient personnel and equipment to manage and maintain land records. The report also commented that the economic development of Lesotho is compromised by the ineffectiveness of the LSPP and insecure land tenure (customary tenure rather than formal leasehold) which are linked to inaccessibility of mortgages (mortgages are obtained with leasehold in Lesotho), lack of land development and hence reduced employment opportunities in the construction and manufacturing sectors, and reduced investment in land and housing. The subsequent reform activity has resulted in the dissolution of the current system (Lands Surveys and Physical Planning – LSPP) and the establishment of the new system (Land Administration Authority – LAA) [6]. LAA is an autonomous agency established to provide effective land administration services to the Basotho people.

The main objective of LAA is to provide security of tenure to the Basotho nation and, ultimately, to boost economic growth through efficient formal land markets. This is one of the poverty reduction strategies of Lesotho with regard to sustainable development [5]. The aim of LAA is to improve on the shortcomings of LSPP which is the current, but outgoing, system. The challenge faced by geomatics practitioners is to design land administration systems that are...
This article serves to describe and analyse the LSPP using viable system modelling (VSM) tools. VSM is used to design viable and effective systems which are autonomous by design [7]. LSPP has been declared ineffective by the government of Lesotho. This has led Lesotho to embark on a land administration system reform in line with the global drivers of reform, in particular sustainable development goals. The organisation is diagnosed using VSM in order to gauge whether the LSPP design is able to operate effectively, even under government bureaucracy. A modified VSM design reveals the changes in structures and processes which will need to be undertaken in order for this goal to be met [8].

**Methodology**

**Theoretical paradigm for research**

This research is underpinned by the theory of Williamson et al [1] termed the Land Management Paradigm (LMP). This theory is holistic, including four main functions of land administration: land tenure, value, use and development. The rights, restrictions and responsibilities (the 3 Rs, or RRsRs) 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. A systems understanding of the processes and structures in land administration follows principles of holism [9, 10] and sees the whole system as containing properties which are more than the sum of the properties of parts of the system.

**Case study research**

Case study research strategy is suitable to investigate cadastral systems [11] as it is used to investigate unique, intrinsic and critical cases in their natural context [12]. This approach to research is based on a suite of data collection techniques which provide a deep understanding of the case and results in a narrative description. This provides the necessary information which facilitates modelling of the land administration system with a view to assessing its processes and structures for viability. It also allows for naturalistic generalisation [12].

Research on the current cadastral system in Lesotho is undertaken using the case study research strategy [12]. Single case study research is undertaken as opposed to multiple case study research since the case of reform of the land administration system in Lesotho is unique and critical [12]. It may be possible after the analysis to combine the outcomes of the single case study with other similar cases in more general research on cadastral systems reform in developing African countries.

Data collection techniques follow those well-established in case study research. These include participant observation, key informant interviewing and documentation in the form of reports and papers. Key informant interviewing is important because these sources are knowledgeable about the system and have access to information which is not otherwise available to the researcher [11]. Nineteen interviews were conducted in June 2009 with a range of employees of the LSPP both in the head office in Maseru and in the District offices. The interviews were unstructured in-depth interviews in which the key informants were prompted to discuss operational, structural, communications and other aspects of the functioning of the LSPP. These interviews varied in length from 30 minutes to over an hour. Key informants were able to follow up with the researchers after these interviews should they wish to inform them of any other aspects not adequately covered in the face-to-face sessions.

**Viable systems modelling**

Viable systems modelling (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 [13]. 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 [13]. 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. Modelling focuses on "functions and activities, not physical entities" [13 p. 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 [14], of which a generic form of chart 2 is shown in Fig. 1.

Ineffectiveness in the system is caused by poor transmission of policy, poor design in structure and ineffective communication channels [7]. VSM is used to design effective systems which are capable of maintaining viability and identity and adapting to a changing, unpredictable and complex environment [13, 14] even if those systems are bureaucratically governed [7]. Viability, or survival of the system in the face of change, is linked to the notion of sustainability. VSM has five essential elements of viability [14]. These are the operations, coordination, control, intelligence and policy elements. Reform of the processes and structures (including institutions) of land administration systems is necessary when these are deemed inefficient [3]. However, the focus of such endeavours is most often on achieving the desired goals through organisational streamlining and implementation of information and communications technology (ICT) [11]. The use of ICTs in VSM systems design is noted for its usefulness in integrating the coordination and monitoring of the system and as a means of communication [7]. It also enhances the freedom of participants [7]. However, a focus on the implementation of ICTs as an end in itself, and association of ICTs with ambitious goals, can contribute to the failure of organisational change efforts [15, 16].

VSM was used by Whittal [11] in analysing a fiscal cadastral system. It was shown to be a useful tool for a systems analysis of an organisation’s structure, processes and relationships and organisational reform. The ability of VSM to model a real system-in-focus and its subsystems in an integrated and holistic manner, based on the principle of recursion of systems, was found to be a major 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) [9, 10].

Within the general domain of systems research VSM has also been found to be a technique worthy of attention. Keating [13] 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 [17] 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. BPR’s focus on radical and fast change is different from the incremental and revolutionary change proposed by VSM [17]. 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 identify, focus and intelligence is critical to viability [17]. Overall, Brocklesby and Cummings [17] recommend VSM for organisational analysis and change design.

The modelling process of VSM is used to present and analyse the LSPP system in Lesotho. From this process some suggestions are made using the format of chart 3 (Fig. 5) for improving viability through structural, operational, regulation and audit changes.

**Description of LSPP**

**Management**

The Lands Surveys and Physical Planning (LSPP) department in Lesotho is a land administration organisation that is bureaucratically governed. This organisation falls within the administration of the Ministry of Local Government and Chiefdomship. It has four divisions namely Land Tenure (including valuation), Survey, Physical Planning and Land Use Planning. The LSPP Head Office is situated in the capital town of Maseru, while some of its operations are decentralised in nine other towns. The Head of LSPP is the Commissioner of Lands. The divisions are headed separately by the Chief Lands Officer, Chief Surveyor, Chief Physical Planner and Chief Land Use Planner. Each division has strategies and action plans to implement and, although independent with its own officers and management, they are ideally intended to integrate functionally within the whole LSPP department.

LSPP functions within a certain context which, in VSM terms is called the environment. There are a variety of interest groups including individuals who are land administration clients, the government, the business community, tourists, etc. The LSPP goals and objectives are geared towards satisfying its interest groups. Fig. 2 shows the usual organisational chart of the LSPP. The four divisions, their management structures and the lines of management for employees, are shown.

**LSPP response to its environment**

LSPP is a purposeful system in that its purpose is to satisfy the needs of its stakeholders (in the environment). To the customers, the LSPP provides security of tenure, land valuations resulting in property taxation, as well as controls on land use and development. At the national level, it is viewed as underpinning the social and economic system. The goals associated with the LSPP are to provide the basis for social security and economic growth. At the international level, LSPP aims to be an effective land administration system on the world stage, capable of leading Lesotho along the path of sustainable development. The LSPP is therefore expected to perform the four key land administration processes effectively.

**Challenges identified in LSPP**

There are many challenges faced by LSPP as a land administration system in Lesotho. The issues, problems and challenges are presented from multiple perspectives derived from the case study data (see previous section entitled Case study research).

**LSPP in government bureaucracy**

Shortages of human capital and financial resources are typical across all the LSPP sub-systems. These are
perceived as symptomatic of the lack of recognition and support of their organisation, by the government. Performance of the land administration processes is seen to be compromised as a result. Decentralisation of LSPP has exacerbated problems as the district LSPP employees lack support from their heads at district level. District officers complain of lack of clear management from the two district heads, the district administrator and the district council secretary. This is especially problematic with the allocation of resources (Interviewees A, B, E, F, H, 2009) [18].

The fiscus
LSPP has failed to collect revenue of any significance. This is one of the reasons that it has been declared ineffective. This is blamed on lengthy and expensive land administration processes which discourage engagement with LSPP by citizens and businesses and lead to a lack of comprehensive land information data [4].

Informal land markets also inhibit the optimum functioning of the LSPP department in its mission to generate revenue for the country. However there are many motivations for the establishment and functioning of informal land markets. Among others is the reported ineffectiveness of LSPP (Interviewees A, B, C, D, E, F). This has reduced the ability of LSPP to operate effectively as a business organisation (Interviewees A, B, C, D, E and F) [18].

The national economy
Freehold land ownership in Lesotho is not possible as all land is held in trust by the King as the Head of State on behalf of all the citizens of the country. Long leases are possible to obtain, but this regime does have an effect on investment in land and in development thereof. Land tenure security is weak with only 15 000 leases in the deeds registry for a population of 1,8-million citizens [19]. Too many statutory steps involved in lease preparation and the lengthy period it takes to prepare and register a lease has resulted in lack of tenure security, a poor land market, very low mortgage bonds levels, and illegal transfer of land. Access to land and property market information is also very poor and has therefore resulted in scarce foreign investment.

Systematic land regularisation is planned under the reform of the LSPP [19]. Improved tenure security is linked to property investment and national economic growth [1], but, at this stage, the national economy is not reaping the rewards of a world-class land administration system.

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 sub-divisions) 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 (Interviewees A, B, C, D, E, H, and I) [18].

Management
The key informants argue that LSPP management cannot concentrate their time on management of the organisation since they are engaged in the processes of land administration. The involvement of all line managers in processing land transactions causes duplication of functions and lengthed and unnecessary delays. Management tasks such as organising meetings, workshops and training are left by the wayside.

Those in the operations of the LSPP in Maseru Head Office, such as the land officers, land technicians, report to the principals and thereafter to the chiefs who are all based at head office. In the district offices they have this line of management but also report to the district administrator and district council (see Fig. 2). District officers thus have more than two heads to report to causing confusion and even conflict of interest at times (Interviewees A, C, D, E and K) [18]. Streamlining of workflow processes and line management is essential.

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 (Interviewees A, B, C, D, E, and H) [18]. 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 process and preparation of applications is poorly communicated. Interpersonal communication is the major source of information, and rumours, misinformation, and lack of information abounds (Interviewees A, B, C, E, G, I, and J). This type of communication environment is also influenced by power relationships and social outsiders may be excluded from information sharing [20]. There are few opportunities for bottom up feedback to management levels, and there are no platforms to discuss issues, progress or difficulties in delivering 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 to perform to the best of one’s ability (Interviewees E, H, I, and J) [18].

Key informants report that telecommunication facilities in 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 (Interviewees B, C, E, G, H, I, and J) [18].

Processes
Integration between 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 LSPP as a whole organisation. They are only introduced to the functions and processes of their division and not others. There are 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 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.

Ineffective processes have resulted in uncontrolled development and encroachment of settlements on agricultural land, which ultimately resulted in large areas of unplanned settlements.

Technical issues
All land administration processes, except for cadastral survey process, are manually undertaken. Multiple forms are manually filled hence human error in these processes is a common and prominent problem. The key informants have indicated 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. 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 (Interviewees A, B, C, D, E, F, G, I, and K) [18].

Synopsis
Even after formal land registration which came with the Land Act of 1979, problems with the existing land administration system persist and are major impediments to Lesotho’s economic development. Based on LSPP challenges, it can be concluded that the current LSPP has thus far failed to accomplish its objectives. The government of Lesotho has declared the LSPP to be problematic and incapable of supporting Lesotho and leading the country in its mission to promote sustainable development. LSPP is not able to support the economic needs of the country because its processes are deemed too costly for the majority of Basotho, too slow in delivering its services due to complicated work flow and insufficient personnel, and too manual as its land information data are not computerised. These factors have resulted in the vast majority of properties being left in unregistered titles which have low tenure security and do not contribute to the fiscus of Lesotho [4].

Part 2 of this article will focus on modelling the LSPP. It will be published in the March 2013 issue of PositionIT.

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References

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