



THE REPUBLIC OF UGANDA
Private Sector Foundation Uganda
SECOND PRIVATE SECTOR COMPETITIVENESS PROJECT
(PSCP II)

CREDIT NUMBER: 3975 UG

**Review of the Legal Framework
for Land Administration**

Surveying and Mapping Issues Paper

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August 2010

Executive Summary

This Issues Paper reviews the Survey Act. The Survey Act was enacted in 1939 as Ordinance No. 12 of 1939, to provide for and regulate the survey of lands. It is currently Chapter 232 of the 2000 edition of the Laws of Uganda. In summary, the Act:

- set up the statutory office of the Commissioner of Surveys and Mapping (later, the Commissioner for Surveys and Mapping), with functions and responsibilities for regulating land surveys;
- prescribed the manner in which surveys should be conducted by government surveyors and other people appointed by the Minister; and
- prescribed the manner in which the survey profession should be controlled through the Surveyors Registration Board

The Act is in need of wholesale reform. It does not establish mapping standards. It does not accommodate modern techniques and the diffusion of a Spatial Data Infrastructure. It also contravenes various sections of the Land Act and the Constitution. Most of its provisions require rewriting.

Surveying and mapping are crucial to Uganda's future development and to poverty-eradication. Citizens, investors and professionals all rely on spatial data and the professional services provided by surveyors. Surveying and mapping laws that do not foster development and safeguard users must be reformed. New legislation is needed to ensure that:

- the quality of services from surveyors and spatial data professionals is high;
- data about private property is kept safe and free from unauthorised alteration; and
- spatial data required for planning and decision-making is accessible in a reasonable time.

In reviewing the Act and the practice of surveying and mapping, we applied the following key guiding principles:

- Natural justice should be ensured. The law should be fair to all the citizens of Uganda.
- The law should be harmonised with the Constitution, the Land Act, the proposed Registration of Titles Act, and current government policies on matters such as the Land Sector Strategic Plan (LSSP) and land information systems (LIS).
- The law should encourage innovative, modern, technologies and approaches for the capture, processing and dissemination of spatial data. These technologies include information communication technology (ICT), modern automated survey and mapping equipment, and modern approaches to data storage, accessibility and dissemination.
- The law should facilitate diffusion of new innovations in infrastructures for data accessibility and use. These include spatial data infrastructures (SDI).
- The law should be sensitive to the concerns of marginalised and minority groups such as women, people with disabilities, older people, and youth.
- The law should promote the professional growth of surveyors and their participation in improving the quality of survey services in Uganda.

In our view, the existing Act fails most of these principles. Wholesale reform is needed.

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Acronyms and Abbreviations

Acronyms	Full Term
ACSM	American Congress on Surveying and Mapping
CAM	Computer Aided Mapping
EDM	Electromagnetic Distance Measurement
FIG	International Federation of Surveyors
GIS	Geographical Information Systems
GOU	Government of Uganda
GPS	Global Positioning System
ICT	Information Communication Technology
IDA	International Development Association
LA	Land Act
LAS	Land Administration System
LIS	Land Information System
LSSP	Land Sector Strategic Plan
MTCS	Medium-Term Competitiveness Strategy
PSCP	Second Private Sector Competitiveness Project
PSFU	Private Sector Foundation Uganda
RTA	Registration of Titles Act
SD	Systematic Demarcation
SDI	Spatial Data Infrastructure

1 Introduction

1.1 Overview

1.1.1 The Consultancy

The Government of Uganda has received funds (under Credit Number: 3975 UG) from the International Development Association (IDA), towards the cost of the Second Private Sector Competitiveness Project (PSCP II). It has applied part of the proceeds to a component for Improving the Business Environment (Land Registry Sub-component/Improvements in the Land Registry). This component aims to improve the business environment through a number of steps, including:

- strengthening the capacity of the Land Registry to process land titles;
- updating land records and establishing a land information system;
- extending the formal system of land registration;
- educating groups or individuals who have not had access to land tenure security; and
- building the capacity of the Land Registry staff.

Under the PSCP II Project, and in particular the above component, Private Sector Foundation Uganda (PSFU) has procured the services of the Consultant (Kalenge, Bwanika, Kimuli & Company, Advocates, in association with several sub-consultants) to provide consultancy services for the Review of the Legal Framework for Land Administration. This assignment, in summary, entails:

- a comprehensive review of land-based laws;
- recommending revisions and harmonization where appropriate; and
- drafting new laws in certain areas.

1.1.2 The Survey Act

This Issues Paper reviews the Survey Act. The Survey Act was enacted in 1939 as Ordinance No. 12 of 1939 to provide for and regulate the survey of lands. It is now Chapter 232 of the 2000 edition of the Laws of Uganda. It set up the

statutory office of the Commissioner of Surveys and Mapping, which later became the Commissioner for Surveys and Mapping, with functions and responsibilities for regulating land surveys. The Act also prescribed the manner in which surveys should be conducted by government surveyors and other people appointed by the Minister. It also prescribed the manner in which the survey profession should be controlled through the Surveyors Registration Board.

1.1.3 The basis of the Report

The information in this Report is based on:

- The Consultant's understanding of the task as set out in the terms of reference and following discussions with officials from the Ministry of Lands, Housing and Urban Development.
- A review of literature on the survey legislation of various countries.
- A synthesis of the discussions between the Institutions of Surveyors of Uganda and the Surveyors Registration Board.
- Our own local knowledge of the practice of land surveying in Uganda. Our counterparts in Australia have provided an international perspective to ensure that the proposals in this Paper are consistent with international best practice in surveying and mapping.

1.2 Approach and Structure of the Paper

1.2.1 Approach

This Issues Paper aims to highlight, discuss and provide proposals on issues in the Survey Act. It explores whether the Act conforms with international best practice, whether it is consistent with the Constitution the Land Act, and whether it can accommodate modern techniques such as digital acquisition/processing of data and Digital Land Information System/Spatial Data Infrastructures. Where we conclude that the Act is deficient in these and other respects, we explore options, give reasons and recommend changes. If we conclude that existing provisions or structures are adequate, we say so.

1.2.2 Structure

This paper is organized into five sections, as follows:

- *Section One* gives a general introduction to the paper.
- *Section Two* highlights the policy context of surveying and mapping in the light of published documents and existing government actions. It also discusses the legal framework that underpins the profession of surveying and mapping.
- *Section Three* discusses surveying methods, including reference to surveying and mapping globally. The same section reviews the problems and issues in the survey and mapping industry in Uganda.
- *Section Four* then moves to discuss issues in the Survey Act. It discusses alternatives to the present system, and presents a series of recommendations. It also introduces proposed additions to the Survey Act.
- Finally, *Section Five* summarises our conclusions and recommendations.

2 Policy and Legal Framework

2.1 Government Policy on Surveying and Mapping

Surveying and mapping are key elements of various government policies. For example, the Uganda Government earmarked surveying and mapping as one of the key areas for support under the PSCP II. The PSCP II supports the Government's program for eliminating the key restraints on Uganda's international competitiveness, by reducing the cost of doing business and encouraging investment. This will better position the private sector to respond to market opportunities.

PSCP II has three mutually-reinforcing components. The pertinent one for this assignment is *Project Component 3¹ (Improving the Business Environment)*. This addresses critical issues in the business environment, including how best to

1. The other components are:
Project Component 1 – Developing Infrastructure and Financial Services; and
Project Component 2 – Enhancing Enterprise Competitiveness.
They are outside the scope of the Consultant's assignment and of this Report.

improve the Land Registry, cadastral maps and related spatial records. Implementing the three components of PSCP II will help to modernize the commercial legal environment, reduce the time and cost of doing business, and, crucially, restore the integrity of the Land Registry and other land information databases such as cadastral databases.

Further, the Government's policy on surveying and mapping is reflected in the Medium-Term Competitiveness Strategy (2000-2005) (MTCS),² formulated by GoU in July 2000. MTCS aims to create an environment to enable the private sector to grow, become profitable, and compete both locally and abroad. It sets out reform priorities, including reforms to: the substance and application of commercial law; the regulatory and administrative framework governing business transactions; and land registration, of which surveying and mapping are integral components.

The MTCS also aims to facilitate the growth of an efficient land market, so as to stimulate investment and market-led development. In this, a priority is to remedy the shortcomings of the land registration system, including the quality of cadastral surveys and maps (which is seen as a significant obstacle to investment). In this area, one strategy is to promote private sector involvement with government in the provision of certain land-related services. These services could include systematic demarcation of land boundaries, cadastral surveying, topographical mapping, database development, and so on.

Furthermore, the GoU's commitment to improving surveying and mapping is expressed in the Land Sector Strategic Plan 2001-2010 (LSSP). The LSSP provides the operational, institutional and financial framework for implementing sector-wide reforms in land management, including implementing the Land Act 1998. The LSSP is also an important element in Uganda's contribution to the United Nations Agenda 21, and to the Habitat Agenda, which outline strategies for achieving sustainable development, adequate shelter for all, and sustainable human settlement in an urbanizing world.

The LSSP was designed on the basis of key policies and national priorities in Uganda. These include:

². Now replaced by the **Competitiveness and Investment Climate Strategy (CICS)**.

- (i) Poverty Eradication Action Plan;
- (ii) Plan for the Modernisation of Agriculture;
- (iii) Decentralization policy; and
- (iv) Liberalization and Medium Term Competitiveness Strategy

The LSSP is therefore designed: to remove barriers to increased land utilization; to broaden land services to rural areas and customary land; to address inequality, tenure insecurity and inequitable systems and processes; to strengthen the land rights of the vulnerable, and of women; to empower local governments and communities to make and implement their own policies and plans for their land; and to provide an appropriate and supportive framework for sound environmental and natural-resources management.

Six broad objectives for the land sector were identified through the consultative planning process. For our purposes, an important one is Strategic Objective 4: *“To increase availability, accessibility, affordability, and use of land information for planning and implementing development programmes”*. This points directly to the importance of surveying and mapping as components in the land administration system. The two strategies to achieve this objective are:

- to undertake systematic adjudication and demarcation of land rights; and
- to introduce a unified, relevant and accessible land information system.

These strategies cannot be achieved without adequate surveying and mapping processes.

2.2 Previous Government-Commissioned Studies and Documents

The Government’s commitment to improve surveying and mapping is reflected in various studies which have been commissioned in the land sector. Some of the studies were directed specifically to improving survey and mapping services, while others inevitably saw surveying and mapping as a key component in land administration. A list of the previous studies in land administration is set out below.

1. *Land Tenure and Agriculture Development in Uganda*, by Makerere Institute of Social Research and The Land Tenure Centre of Wisconsin, USA, 1989;
2. *Report on the Land Registration Procedure and Land Registry in Uganda*, D.W. Greenwood 1990;
3. *Rehabilitation and Development of Land Survey and Registration in Uganda*, Gerhard Larsson 1990;
4. *A Base For a Land Information System in Uganda*, Swede Survey 1996;
5. *Proposal for the Computerization of the Land Registry*, by Computer Supplies Ltd 1996;
6. *Design and Development of Geographic Information System including the Master Plans for the Development of the Ugandan Spatial Infrastructure*, The Swedish Consortium June 2001;
7. *Technical Audit on Current Initiatives and Proposals for Securing Land Registry Records in Uganda*, Swedesurvey 2003;
8. *Guidelines and Procedures for Systematic Demarcation in Uganda* (including sensitisation and training manuals);
9. *A Review of the Status of Land Information Systems in Uganda*, Sivest 2003;
10. *Detailed Plan for the Design and Implementation of LIS in Uganda*, SwedeSurvey 2004;
11. *Securing and Upgrading the Land Registry and Implementation of a Land Information System in Uganda*, Geo-Information Communication Ltd 2007.

These studies made a number of useful recommendations, covering a wide range of issues from technical, technological and legal, through to economical and institutional issues. All the studies emphasised the need for the rehabilitation of survey records and maps.

2.3 Legal Framework

Surveying and mapping is part and parcel of Uganda's land administration system. The legal framework for land administration is currently undergoing reforms and most of the current legislation is under review. Land administration in general has been affected by the confusion created during successive government attempts to address issues of land tenure. After independence, surveying and mapping was controlled by the Public Lands Act of 1964. Previously, land administration had been governed by a number of ordinances, such as the Crowns Lands Ordinance, the Envujjo and Bussulu law, and so on. The Public Lands Act recognized three types of land tenure, namely, leasehold, freehold and mailo. The Land Reform Decree of 1975 abolished all other types of land tenure and declared all land in Uganda to be public land. The Decree provided for leasehold as the only acceptable manner of holding land. The decree was never effectively implemented, and after Idi Amin's government collapse in 1979, the Public Lands Act continued to operate as if it had not been amended by the Land Reform Decree. Later, the 1995 Constitution of Uganda and the Land Act 1998 attempted to sort out the confusion in land tenure systems by re-introducing some of the aspects that had been repealed by the Land Reform Decree. Notably, the Land Act recognized the three previous land tenure systems and formalized customary tenure. The Land Act has not been fully implemented, and some of its aspects are still being discussed between various stakeholders.

From the standpoint of surveying and mapping, the confusion in the land administration systems has had several negative impacts. For example, different survey standards have been applied to each of the land tenure systems. These differing standards have affected records storage and management. They have also affected important technical aspects such as parcel identification.

Currently, land administration laws that relate to surveying and mapping include:

- (a) The Constitution of the Republic of Uganda 1995.
- (b) Land Act 1998.
- (c) The Condominium Property Act 2001.
- (d) Land Regulations, 2004.

- (e) The Survey Act, Cap. 232.
- (f) Surveyor's Registration Act, Cap. 275.
- (g) The Land Acquisition Act, Cap. 226.
- (h) Registration of Titles Act, Cap. 230.
- (i) The Mortgage Act, 2009.

3 Conceptual Framework

3.1 What is Land Surveying?

We may define land surveying as the process of measuring dimensional relationships among points, lines, and physical features on or near the Earth's surface; land surveying is used to determine slope/horizontal distances, elevation differences, directions, and angles. Surveying makes it possible to locate and measure property boundaries; to lay out buildings, bridges, channels, highways, sewers, and pipelines for construction; to locate stations for launching and tracking satellites; and to obtain topographic information for mapping and charting. An alternative definition, from the American Congress on Surveying and Mapping³ (ACSM) is: the science and art of making all essential measurements to determine the relative position of points and/or physical and cultural details above, on, or beneath the surface of the Earth, and to depict them in a usable form, or to establish the position of points and/or details.

Land Surveying is undertaken by professionals, called surveyors. The International Federation of Surveyors (FIG) defines a surveyor as a professional

³ The **American Congress on Surveying and Mapping** (ACSM) is an international professional association representing the interests of those engaged in measuring and communicating spatial data relating to the Earth's surface. ACSM is composed of several autonomous professional societies. More information is available at [www.http://en.wikipedia.org/wiki/American_Congress_on_Surveying_and_Mapping](http://en.wikipedia.org/wiki/American_Congress_on_Surveying_and_Mapping)

person with the academic qualifications and technical expertise to conduct one, or more, of the following activities:⁴

- to determine, measure and represent land, three-dimensional objects, point-fields and trajectories;
- to assemble and interpret land and geographically related information;
- to use that information for the planning and efficient administration of the land, the sea and any structures thereon; and
- to conduct research into the above practices and to develop them.

There are various types of surveying, depending on the criteria used for classification. For example, on the criteria of 'techniques used', land surveying and quantity surveying can both be considered as types of surveying. On the criteria of 'platform used', one would differentiate between land surveying, aerial surveying (photogrammetry), and hydrographic surveying. Again, on the criteria of 'end-product', one would differentiate cadastral surveying (dealing with property boundary surveys and mapping), engineering surveying (including topographical surveys, route surveys, setting out structures, etc), and geodetic surveying (dealing with high accurate surveys for establishing first and second order control points). And on the criteria of 'theoretical techniques', one could differentiate between traversing, triangulation, resection and radiation. The law should generally prescribe the manner in which each of these varieties of surveying is conducted.

Surveying is a fundamental aspect of land administration and of the operation of an efficient land market. In particular, cadastral surveys directly affect the integrity of the land information which underpins the land administration system and the land market. Cadastral surveys create, mark, define, retrace, or re-establish the boundaries and subdivisions of land, including of public land.⁵ They describe land for the purposes of recording ownership of land or land rights. But they are not like scientific surveys of an informative character, which may be amended to take

⁴ FIG Definition of the Functions of the Surveyor, adopted by the General Assembly held on 23 May 2004. More information is on <http://www.fig.net/general/definition.htm>

⁵ <http://www.blm.gov/wo/st/en/prog/more/cadastralsurvey.1.html>

account of additional information or changes in conditions or standards of accuracy. Although cadastral surveys employ scientific methods and precise measurements, they are based upon law and not upon science.

3.2 Cadastral surveying and land administration

Land administration entails those public sector activities required to support the alienation, development, use, valuation, and transfer of land and its content. A land administration system (LAS) comprises the cadastre, land registers, land consolidation, valuation and land information systems. These LAS components include the determination of rights and other attributes of land, the survey and description of these rights and attributes, their detailed documentation, and the provision of relevant information in support of land markets.⁶ An effective LAS is essential for the efficient operation of the land market. Experts counsel that the most expensive and time-consuming element of the land market is the establishment and maintenance of the land administration system (LAS).⁷

Within the LAS, each piece of land that is registered must be identifiable, and the location of its boundaries must be known (at least approximately, to a level that is economically viable). This identification and parcelling is achieved by cadastral surveys. In many ways the cadastral surveyor acts as an arbitrator of a range of historical and current evidence, and overlays this base information with an understanding of legal and legislative principles to arrive at a definition of a title boundary.⁸ To define cadastral boundaries requires suitable monuments that identify property boundaries. Depending on the purpose, cadastral boundaries may be fixed or general boundaries. Fixed boundaries are defined using accurate survey techniques and appropriate boundary markers. Monuments such as mark stones with nails on top are suitable for defining fixed boundaries, and the positions of such points are determined with considerable accuracy (with

⁶. United Nations Economic Commission for Europe (UNECE), *Working Party on Land Administration (WPLA)*. FIG Report – Commission 7 Working Group 3 on Land Market Activities 1998-2002, Jan Sonnenberg and András Osskó, FIG XXII International Congress, Washington, D.C. USA, April 19-26 2002, p. 5.

⁷. *Land Markets and the Modern Economy* by Peter Dale, Robert Mahoney, Robin McLaren, RICS Christmas Lecture, University College London, December 2007, available via www.rics.org and www.fig.net.

Institution Of Surveyors of Australia: <http://www.isaust.org.au/groupCadastral/cadastralSurveying/>

allowable position errors not exceeding a few millimetres in the coordinate values). On the other hand, general boundaries are not precisely defined: their documentation may be descriptive without the need to use coordinates. In some cases, physical features such as rivers or plants may be used to define boundaries. Where two parcels of land are divided by general boundaries, there may be an intervening “no man’s land”, a result which may be acceptable between neighbours.

Regardless of whether fixed or general boundaries are used, there is a generic requirement that cadastral registers be kept up to date, so that records in the registers mirror the actual conditions on the ground. This requirement is increasingly fulfilled as one moves away from general boundaries towards fixed boundaries.

In international practice, surveying and mapping legislation is principally directed towards regulating land boundary surveys, with the aim of supporting the operation of land markets.⁹ Often the legislation also extends to regulating the surveying profession in ways similar to the regulation of other professionals such as architects and engineers.

Professional regulation of surveyors who are permitted to practise cadastral surveying in Uganda is partly governed by the Surveyors Registration Act. That Act is also under review in this Project. The existing Survey Act therefore deals with the regulation of surveys and quality assurance processes for cadastral surveying (but with little emphasis on mapping).

3.3 Scope of Legislation for Surveying and Mapping

We begin by asking a basic question: is it necessary to have legislation regulating the practice of surveying and the professionals involved in it? Those who think

⁹. *Surveying and Mapping Legislation - Lessons Learnt*, by Ian Williamson and Katie Falzon, Department of Geomatics, The University of Melbourne, AUSTRALIA: Presented to the Ad Hoc Group of Experts on Legislation for Surveying and Mapping 6th United Nations Regional Cartographic Conference for the Americas, New York, 6th June, 1997.
<http://www.sli.unimelb.edu.au/research/publications/IPW/SMLLL.htm>

that it is not necessary consider that legislation of this kind may impose unnecessary restrictions which may act as disincentives to the growth of the surveying and mapping industry. Those who favour legislative regulation point out that surveying and mapping affect important aspects of land administration, such as land use planning, urban development, and the promotion of land markets; even more, surveying and mapping play an important role in social and economic development. They argue that these matters are best implemented in an organised and orderly way, and that this is best done by legislation.

In our view, where legislation has been developed and successfully implemented, it has helped ensure the development of a quality survey and mapping profession. In this new era of data sharing, it has also helped to develop guidelines for the production, maintenance and distribution of spatial data.¹⁰

That said, a review of survey and mapping legislation worldwide reveals that many countries do not have comprehensive legislation that covers all the branches of surveying and mapping. In many cases, survey and mapping legislation concentrates on the quality control of cadastral surveys and the conduct of professionals engaged in cadastral surveys. This seems to be because cadastral maps and associated documents are seen as legal documents. Particularly in countries using the Torrens system where the state guarantees titles (and hence documents arising from cadastral surveys), it is necessary for the state to establish laws to govern surveys and the professionals involved. Therefore, the emphasis in many countries is on setting accuracy standards for surveys and compelling surveying professionals to be registered and controlled.

While legislation regulating cadastral surveys is common, less common in many countries is legislation regulating other types of surveying, such as topographical surveying and mapping. The explanation is possibly that, historically, national topographical mapping has been an exclusive responsibility of the state and state-owned mapping organisations. In Uganda, for example, the Department of Surveys and Mapping has had sole responsibility for national topographical mapping and has set standards for the production of topographical base maps. In recent times, few organisations have embarked on the production of thematic

¹⁰ *Legislation for Surveying and Mapping*, Report of the Meeting of an Adhoc Group of Experts, United Nations New York 6 June 1997 pg 2.

maps, and quality concerns of some of them are still in the balance. The reluctance to legislate on topographic or thematic mapping essentially lies in the understanding that, unlike cadastral maps, topographical maps are not legal documents and thus their production does not impose any obligations on the government. Secondly, the state agency that is empowered to control the quality of survey work has been (in many cases) the sole institution responsible for topographical mapping, without any competitor. Perhaps this may be explained by the fact that private companies have limited capacity to undertake mapping and do not consider it be a profitable line of business. In a situation where the national mapping agency is the controller of survey practice, legislation is not seen as important.

Although the above situation continues to prevail in some countries, it is important at this stage to recognise that the manner in which spatial data is captured, stored and used has changed tremendously over the last few decades. Improvements in technologies for capture of spatial data (such as GPS, satellite remote sensing, and digital survey equipment) have facilitated opportunities for the massive capture of spatial data. As a result, in many countries the role of topographical mapping is increasingly being shared between national institutions and the private sector. Indeed, some countries have been forced to formulate legislation to regulate topographical mapping, in addition to cadastral surveying. Such countries include China and Germany.

There is now a new factor that may impel countries to consider legislating on mapping, even if they had not seen the need previously. This factor is the emerging, but now stable, technologies such as geographical information systems (GIS) that utilise spatial datasets of different thematic contents. GIS has become accepted as an essential tool in spatial analysis and decision-making. The data input requirements of GIS databases in many organisations have put additional demands on the capture and accessibility of spatial data. Therefore, inevitably, a host of new players (including the least anticipated and non-traditional players) have been added to the spatial data equation. This has necessitated the creation of more organised and structured frameworks for sharing spatial data; these are now called spatial data infrastructures (SDI). SDIs include institutional

frameworks, technologies, spatial datasets, and standards for improving accessibility and utilisation of spatial data.¹¹

Data accessibility through spatial data infrastructure requires the formation of strategic institutional arrangements. Experience has shown that, where SDIs fail to live up to expectations, it is generally due not to technical issues but institutional barriers. Of course, apart from (often cumbersome) institutional issues, a host of other legal issues arise in spatial data sharing; they include liability, copyright, and pricing. As more institutions become involved in spatial data acquisition and use, these issues become more relevant. Hence the need for additional legislation.

Countries which need new legislation must, of course, exercise care when borrowing legislation from other countries, for conditions may vary. Legislation should be developed for each specific country, taking into consideration politics, culture and socio-economic factors. Furthermore, over-legislation can lead to inefficiency. Less legislation, effectively targeted, is better than more legislation. Poorly conceived legislation may indeed contribute to the underperformance of the spatial data industry.

In our desire to develop modern surveying and mapping guidelines for the growth of the spatial data industry, therefore, we need to concentrate on Uganda's own circumstances. We need to pay attention to the functions of land surveying in this country, to topographic mapping and real estate cadastre products in the social order of this country, and their embedding in the legal tradition of this country.¹² In so doing, we shall be developing laws that fit the scope of our demands.

3.4 Advances in Surveying and Mapping

Surveying is an old profession. It started many years before the birth of Christ. In Egypt, measurements on land were made through use of (foot) paces and were recorded on paper sketches that showed the dimensions of land parcels. This method was inherently non-standard, because the distances measured depended on the length of the strider's paces. But despite the inaccurate results, this

¹¹ We discuss SDIs in more detail in our *Draft Final Issues Paper on Land Information Systems*.

¹² *Surveying and mapping Cadastre Legislation, Law and Practice of Public, Surveying, Mapping, Real Estate Cadastre*, by Fredrick Rockhar in the Report of the Meeting of an Adhoc Group of Experts, United Nations New York 6 June 1997.

probably served the intended purpose in the circumstances of the time. Later on, more efficient methods were introduced, including the use of chains with links and steel/invar tapes of known length.

Use of plane-tables simplified the requirement to measure and draw sketches of survey measurements. A plane table combined with a tape measure would facilitate measurement of angles and distances, while at the same time allowing sketching on a sheet while still in the field. However, the plane table would not provide data in form of coordinates.

Horizontal angles were measured using a compass. This would provide a magnetic bearing, from which deflections could be measured to derive geodetic bearings. Later, telescopes and theodolites improved angle measurement to fractions of minutes or seconds. Theodolites are still used today for measuring angles and they appear as either optical or digital instruments. Electronic magnetic distance (EDM) instruments improved distance measurement by facilitating measurement of longer distances. An EDM uses electromagnetic waves and is capable of measuring distances of more than 2km.

Total stations have combined the features of digital theodolites, EDM and computing to present modern equipment for land surveying. A total station can record angles, distances and be able to compute coordinates of the target on the fly. Total stations can record this data on their internal memory cards, and the data can later be download to a computer for further processing. Modern top-of-the-line total stations no longer require a reflector or prism to return distance measurements, are fully robotic, and can even e-mail point data to the office computer.

Another modern generation of survey equipment uses global positioning system (GPS) technology. GPS observations are based on space satellites whose positions are known at all times and which are used to determine the location of a receiver on or near the earth surface. GPS technology does not require inter-visibility between instruments and targets, but does require a clear sky to link the receiver to the satellites. It is therefore more cumbersome to use in highly vegetated areas, such as banana plantations or thick bush, or in densely unplanned built-up areas. GPS equipment has varying capabilities in terms of

accuracy in point fixation. Generally, accuracies can be classified into three groups¹³. The first and most accurate is the survey grade GPS, in which horizontal accuracies of about 20 mm and vertical accuracies of about 30-40 mm¹⁴ are possible. The second in the hierarchy is the mapping grade, in which accuracies are in the range of 1 to 5 m in real-time, or less than 50 cm accuracy with post-processing correction using base station differential corrections. The last category is the recreational grade GPS, with accuracies in the range of 3 to 50 m, with no option for post-processing correction.

Other modern innovative technologies include satellite remote sensing, which provides digital images that could be used as base maps for SDI datasets. The current satellites such as Quickbird or IKONOS are capable of providing digital images up to less than a metre.

3.5 State of Surveying and Mapping in Uganda

Surveying and mapping play an important role in Uganda's economic development. Cadastral surveys are an important part of the processes of land acquisition and land registration. They are required for a number of land transactions, including subdivision, consolidation, and conversion from customary or leasehold tenure to freehold tenure.¹⁵

Previous studies carried out in the lands sector have all pointed to the poor state of surveying and mapping in this country. They describe how the basic survey infrastructure, ranging from geodetic network, through records management to professional management, lag below desirable standards.

However, in our view, proper reform requires an understanding of the current state of surveying and mapping in Uganda. And so in this section of our Report we do not simply regurgitate the contents of previous studies, but rather highlight what

¹³ GPS Comparisons by Professor Paul Bolstad , University of Minnesota
<http://www.forestpal.com/GPS.html>

¹⁴ National Cooperative Highway Research Program: *Collecting, Processing and Integrating GPS data into GIS*, p. 40. Published by Transportation Research Board, 2002 ISBN 0309069165, 9780309069168

¹⁵ Securing and upgrading the land registry and Implementation of a Land Information System in Uganda - The Baseline Evaluation Report- Private Sector Competitiveness Project (PSCPII).

we consider to be important information if Uganda's survey and mapping law is to progress in line with the needs of the country.

- (i) **The Survey Act and Regulations are outdated.** In our view, the Survey Act and Regulations are outdated. The Survey Act was enacted in 1939 and has not been amended since. The Act still assumes that surveys are conducted using observation and computation techniques that were available at the time. In fact, most have been superseded. The Act does not provide for modern innovative techniques and approaches such as automated equipment and total stations, GPS and digital satellite images. These automated techniques provide a faster way of capturing spatial data. But because of limitations in the current Act and subsidiary law, the data generated cannot be legally supported. The Act also fails to consider developments that have changed approaches to human rights, politics, public administration and the needs of various marginalized and minority groups in society.
- (ii) **Under-developed spatial data industry.** The spatial data industry in Uganda is still in its infancy. The number of registered surveyors and survey firms remains very low. Most of the existing surveying companies do not have capacity to undertake even medium-sized survey and mapping projects, for lack of technological capacity and financial and human resources. According to the information from the Surveys and Mapping department in Entebbe, there are about 8 surveying companies in Uganda with an average staff of 2-3 surveyors in each (pg 67). This is very low compared to neighbouring countries within the East African Community. With the upcoming challenges associated with the federation, it is not clear what will happen to the surveying and mapping sector in Uganda. There is a possibility that the more established firms in these other countries will dominate the industry and hence suffocate the already staggering local industry. Furthermore, mapping and the provision of spatial data is still dominated by government institutions, and these are not well funded. The government institutions are not able to invest in activities for improving the provision of up-to-date spatial data. For example, available topographical maps (apart from Kampala and neighbouring districts) date back to 1964 at

a scale of 1:50,000. Such maps do not reflect recent changes in the topography and hence are not suitable for planning.

(iii) **Most land is not on the Register.** It is estimated that 15% of the land in Uganda is under the manual cadastral register and most of this is located in Kampala. The rest of the country is surveyed in a very scattered (and sporadic) manner. This low coverage of cadastral maps may be attributed to scarcity of registered surveyors, high standards of accuracy requirements for cadastral surveys, high costs of survey fees and field expenses, centralization of surveying services, and low sensitization of people about the benefits of surveying land. These problems are slowly being addressed in various government programmes, such as Systematic Demarcation and Land Information Systems.

(iv) **Lack of a dense national geodetic network.** The national geodetic network, established more than 60 years ago, is in very poor condition. The geodetic network is used for controlling surveys and also for georeferencing satellite images. According to the Baseline Report, this network consisted of about 1800 points of different classes of accuracy (including about 131 points of 1st order, about 650 points of 2nd order, and 950 of 3rd order). A substantial part of this network (estimated at 90% by the Baseline Report) was destroyed during 1970-80 wars under false imaginations, one being that the pillars contained mercury. Lack of such a network affects mapping programmes, something already been experienced during piloting of systematic demarcation.

Since 2003, the Government has made some practical efforts towards establishing more geodetic control points, and these efforts are on-going. Meanwhile, a number of other projects, such as those in the roads sector, have led to the establishment of lower-order control points. These points would be of benefit to surveying and mapping, especially in rural areas. However, the lack of legislation to compel companies to avail spatial data for custody and dissemination means that most of this data is not accessible to many surveying and mapping professionals. In essence, this leads to duplication of effort.

- (v) **Poor records management**. Cadastral and topographical maps are stored manually. Many of the maps are torn and it is difficult to extract information from them. There are several inconsistencies in the maps: for example, maps that are for the same area but under various land tenure systems are stored using different standards. Further, lack of computerization has affected the usability of the stored data.
- (vi) **Lack of standards and institutional mandates**. As more opportunities and possibilities for mapping emerge in Uganda, there is a degree of lateral confusion over who should take responsibility for various functions. Where clear guidelines on standards and institutional mandates are absent, duplications are likely to arise. In Uganda, for example, mapping had been exclusively mandated to the Surveys and Mapping Department. However, with a new generation of donor-funded projects such as National Biomass Study, the Ministry of Local government, Uganda Bureau of Statistics and Wetlands Management Department have undertaken mapping programs on their own. Some institutions and ministries such as Works and Transport and Karamoja Data Centre are collecting data that should potentially come under the mandates of other institutions. For example, in the Ministry of Works/Transport-Ramps project, information on schools and other facilities has been collected without coordination. Data developed through uncoordinated efforts is often of different standards and hence not re-usable. Even within the Ministry of Lands Housing and Urban Development itself, some data has been developed using different standards. This situation is unfortunate, as it is a setback on efforts to develop coordinated spatial data infrastructures.

3.6 Need for revision of the current law

Surveying and mapping are crucial to the development of a nation, and contribute to poverty-eradication. A wide variety of people, such as citizens, investors and professionals, rely on spatial data and the professional services provided by surveyors. Where existing laws do not fulfil the expectations of such people in a manner that fosters development, it becomes necessary to modify the laws. In the case of Uganda, it is necessary to ensure that:

- the quality of services and data from surveyors and other spatial data professionals is high;
- data regarding private property is safe and free from unauthorised alteration; and
- spatial data required for planning and decision-making is accessible in a reasonable time.

To meet these requirements, we consider that a registration system for surveyors, administered by the Surveyors Registration Board of Uganda, should be reviewed. The law should define and streamline the process of registration of surveyors, the processes for dealing with complaints against surveyors, and the membership and functions of the Surveyors Board. The Survey Law should also be amended to cater for the integration of cadastral and other spatial data, such as mapping, utility and land use information, into information delivery systems. In essence, the law should be amended to support the implementation of a coordinated spatial data infrastructure.

Specifically, the Survey Law should also prescribe standards for:

- State control over surveys;
- surveys and other processes involved in delimitation of interests in land;
- the marks and plans of such surveys; and
- the inclusion of the data arising from such surveys in the cadastre, LIS, and/or SDI.

Additionally, the Survey Law should identify the infrastructure **datasets**. It should provide a mechanism to define the base information required for inclusion in the infrastructure, such as the geodetic network required to facilitate integration of surveys and other land-related information. Further, the Survey Law should establish or re-establish an **institutional framework**, which would be assigned responsibility to:

- arrange the capture, maintenance and dissemination of cadastral and/or spatial data;

- supervise government agencies and professionals in private practice who are involved in activities which contribute to the infrastructure; and
- oversee the overall quality required for cadastral surveys, and determine the rules, standards and basic principles for the examination and evaluation of basic material, how the quality of both text and spatial data is to be improved, and how new data is to be acquired and then reconciled with existing data.

3.7 Guiding principles for the review of the Survey Act.

In response to the issues discussed above, we consider that the following should act as guiding principles when reviewing the Survey Act.

- Rules of natural justice must be observed in all aspects of the law. The law should be fair to all the citizens of Uganda.
- The Act should be harmonised with the Constitution, the Land Act, the proposed Registration of Titles Act and current Government policies such as LSSP and LIS.
- The law should exploit all available innovative modern technologies for the capture, processing and dissemination of spatial data. The technologies include ICT, automated survey and mapping equipment, and modern approaches to data storage, accessibility and dissemination.
- The law should facilitate diffusion of new innovations in infrastructures for data accessibility. These include Spatial Data Infrastructures (SDI).
- The law should be sensitive to concerns of marginalised and minority groups, such as women, people with disabilities, older people, and youth.
- The law should promote professional growth and the participation of surveyors in improving the quality of survey services in Uganda.

4 Review of the Current Law- Issues and Proposals

4.1 Issues in the current Law

4.1.1 Definition of a Surveyor

Section 1 of the Act defines a surveyor for purposes of the Act as a “Land Surveyor”. The term “Land Surveyor” is used to avoid possible confusion with other types of surveyors, such as Quantity Surveyors. In many countries, legislation governing the survey of land does not cover quantity surveyors, but specifically specifies ‘land surveyors’ and in some cases ‘cadastral surveyors’. Generally, a Land Surveyor may be defined as a professional person with the academic qualifications and technical expertise to conduct one or more of the following activities:¹⁶

- determine, measure and represent land, three-dimensional objects, point-fields and trajectories;
- assemble and interpret land and geographically-related information;
- use that information for the planning and efficient administration of the land, the sea and any structures on them; and
- conduct research into the above practices and develop them.

In the Torrens system, where surveyors are instrumental in measuring land for the purposes of acquiring a state-guaranteed title to land, it is necessary to limit the definition of land surveyors to those who have been registered/licensed and hence controlled by a competent statutory body. This means that even if a surveyor possesses the relevant qualifications and is involved in some of the activities above, the surveyor must be registered by a registration body. We therefore recommend amending this section so as to define a surveyor as a registered and licensed Land Surveyor, or a Government Surveyor with a written authority from the Commissioner or District Surveyor.

Recommendation:

¹⁶ Definition and functions as adopted by the International Federation of Surveyors (FIG) General Assembly 23 May 2004.

Section 1 of the Act should be amended so as to define a surveyor as a Registered/Licensed Land Surveyor, or a Government Land Surveyor with written authority from the Commissioner or District Surveyor. This definition should exclude other types of surveyors, such as quantity surveyors and valuers.

4.1.2 Who is authorized to execute surveys?

Under s 2(1) of the Act, the Commissioner of Surveys and Mapping is empowered to authorise any survey, which, in the opinion of the Commissioner, is necessary. Section 2(2), empowers the Commissioner and his/her agents (Government Surveyors) to control and carry out such surveys. The section is silent about private surveyors.

This section was relevant when the bulk of land surveying work was in the hands of Government surveyors. Government has now decentralised land management to the districts by creating District Land Boards and District Land Offices (ss 56-63 LA). It has also divested itself of some functions of surveying such as cadastral surveying and concentrated mainly on the provision of control and quality of surveys. Private surveyors are also licensed to carry out surveys under the Surveyors Registration Act (Cap 275).

With decentralization of the land management functions, some districts hold survey records (mainly mailo and freehold surveys) which the Commissioner does not have. This makes it difficult for the Commissioner to have control of the surveys and the resulting survey records. These surveys may even be approved at the district level by the relevant District Surveyors; but these surveyors do this on behalf of the Commissioner, not in their own right as District Surveyors.

District Surveyors check the quality of work undertaken by private surveyors in their respective districts. Thereafter, they maintain survey records and are not obliged to provide copies to the Commissioner. We consider that it would be beneficial to empower the Commissioner to coordinate land survey work in all local governments so as to ensure adherence to common standards. By coordination here we do not mean supervision, but rather ensuring that survey standards are observed in all local governments. Without conflicting with the Local Government Act, the Survey Act should be amended to compel District Surveyors

to submit copies of data held by them to the Commissioner. Districts should also be compelled to conform to survey standards set by the Commissioner. However, Local Governments should have powers to set more detailed standards as long as they conform to the national standards set by the Commissioner.

Recommendations:

- (a) A new subsection should be added to section 2 to clarify that non-government surveyors can be registered and licensed to carry out surveys.***
- (b) Control-surveys and any other special surveys should be the responsibility of the Commissioner, especially primary and secondary control-surveys. However, the Commissioner may authorize a private surveyor to carry out control-surveys***
- (c) District Surveyors should be empowered to authorize cadastral surveys and lower order control-surveys in their districts. These surveys should conform to the general standards set by the Commissioner.***
- (d) A District Surveyor should be compelled to avail survey records in his or her district to the Commissioner for quality assurance and custody. The district surveyor should keep copies of survey records at the district.***
- (e) The name of the officer approving the survey should be clearly indicated on the deed plan so as to own responsibility.***
- (f) For technical matters concerning land surveying, District Surveyors should be responsible to the Commissioner. However, this should not limit the powers of Local Governments as stipulated in the Local Government Act.***

4.1.3 Power of Minister to order special surveys

Under s 3 of the Act, the Minister may order a special survey not provided for in s 2 of the Act and may appoint an officer not necessarily the Commissioner to control such surveys. That is, the Act empowers the Minister to commission special surveys not provided for in s 2.

It is normally expected that the Minister will appoint the Commissioner to control such surveys. However the law still permits the Minister to appoint a person other than the Commissioner. While there could be good grounds for the Minister to appoint a person other than the Commissioner, it remains important to involve the Commissioner to ensure that survey quality standards are conformed to. The appointed person, though not reporting to the Commissioner, needs to work under close supervision of the Commissioner to ensure quality control of the survey and the data generated.

Recommendation:

In addition to the existing provisions and to ensure quality control of the special surveys, where an officer other than the Commissioner is appointed to carry out a special survey, that other officer should be under the control and supervision of the Commissioner.

4.1.4 Board to license surveyors

Sections 4 - 18 of the Act deal with the establishment, functions, and membership of the Surveyors Licensing Board. However, in 1974, the Surveyors Registration Decree (now Cap. 275) was enacted. Under s 2(2) of Cap. 275, the provisions of the Survey Act, relating to the establishment, functioning and management of the Surveyors Licensing Board and to the registration, licensing and disciplinary of land surveyors, were superseded by Cap. 275. These sections are therefore redundant since they are well covered by another law.

Recommendations:

- (a) Sections 4-18 of the Survey Act, having been superseded by the Surveyors Registration Act, should be repealed.***
- (b) The specific amendments to these sections should be considered while reviewing the Surveyors Registration Act.***

4.1.5 Power of surveyors to enter land

Under s 19 of the Act, any Government Surveyor or duly authorized officer, with his or her servants and workers, is authorized to enter upon land and make

inquiries and do or cause to be done all things necessary for effecting a survey under s 2 or s 3 of the Act.

While executing his/her duties, a surveyor often needs access to land other than the parcel being surveyed. A cadastral survey normally starts from control points or points whose coordinates were previously determined and authoritatively approved by the Commissioner or District Surveyor. It is not uncommon to have existing control marks a few kilometres away from the land to be surveyed. The most common approach for extending this survey-control to the land is by a loop of measurements that involve planting temporary marks—in many cases, on other people's land. The survey may in some cases inevitably require clearing of plants and other objects to establish a line of sight between a survey instrument and a target.

The Act empowers a surveyor to enter any property whether public or private in order to execute a survey, without any consideration of owner rights. In a modern world, such powers would appear to encroach on the rights of private property owners. Normally, consent needs to be sought before private property is accessed. In Uganda, the Constitution and the Land Act empower people to own land privately, and therefore the act of a surveyor accessing private property without owner consent would be tantamount to trespass.

On the other hand, surveyors play an important role in generating much-needed information for establishing a Land Information System and thereafter a Spatial Data Infrastructure. There is therefore, good reason for empowering surveyors to generate this information, even if during the process access to private properties is inevitable. Surveyors need to be protected from uncompromising property owners who may unreasonably refuse to grant permission to access their properties for the purpose of executing surveys.

This issue is not unique to Uganda. For example, s 22 of the Queensland Survey and Mapping Infrastructure Act 2003 authorises a surveyor to enter a place at any reasonable time for carrying out a survey or placing a permanent survey mark on the land. However, this privilege is restricted if the place in question is a building or other structure where a person resides. Section 23 (1) obliges a surveyor to give notice before entering a place to carry out a survey. The surveyor must make

a reasonable attempt to identify himself or herself; to tell the person the purpose of the entry; and also to mention that the Act permits him/her to enter the property for that purpose. Furthermore, s 23(2) empowers a surveyor to enter a place even when permission has not yet been granted. However, this is on condition that entry is for the purpose of informing the occupier.

These provisions appear to strike a balance between the rights of a land owner and the need for surveyors to enter private property for purposes of undertaking surveys. Of course, the surveyor's rights may depend on the circumstances. For example, the need to make 'a reasonable attempt' to notify the occupier does not explicitly define what are 'reasonable attempts'. Nevertheless, a surveyor may enter a property without consent as long as there is proof that reasonable attempts have been made to obtain consent.

The Queensland Survey and Mapping Infrastructure Act does not, however, prescribe what to do in case of un-consenting landowners. Section 26 of the Act criminalizes obstruction of a surveyor without reasonable excuse. "Obstruction" is defined to include assault, hindering and threatening, and attempting to obstruct. It is not clear whether the acts of a land owner who refuses to grant access permission without good grounds would fall under this section.

The South African Land Survey Act also empowers surveyors to enter property at any reasonable time. The Act only requires surveyors to give notice, but generally not to obtain consent unless the place is a building or an enclosed place. Like the Queensland law, the South African Land Survey Act criminalizes obstruction of a surveyor from undertaking a survey.

Returning to the Ugandan context: it is important to balance the rights of property owners to enjoy quiet possession of their properties. However, there is also a need to undertake surveys to generate information for a National Land Information System. Surveyors need to be legally facilitated to access private properties with minimum interference on the rights of the property owners.

Recommendation:

- ***Surveyors may enter government properties for purposes of undertaking survey or erecting permanent survey marks.***
- ***The power to enter on private land should be subject to giving reasonable notice to the owner/occupier, with copies to the local councils in the area.***
- ***Upon entry upon private property, the Surveyor should state:***
 - ***the purpose of the survey; and***
 - ***that this Act permits him/her to access private property.***
- ***Where consent has not been granted because an owner/occupier is not available, the Surveyor should be entitled to enter those areas of the property where the public are generally permitted to enter to consult the owner/occupier. However, this should be done in the accompaniment of local leaders in the area.***
- ***Upon entering the property, the surveyor and his/her team should be entitled to set up equipment only for the purposes of executing a survey.***

4.1.6 Power to issue notice of intention to carry out survey

Section 20 of the Act provides for the Government Surveyor to publish a notice of his intention to carry out a general survey of holdings under s 2(1) of the Act.

General surveys are interpreted to mean systematic surveys covering a larger geographical area. One such example is systematic demarcation that is provided for in the LSSP strategic objective No. 4. In Uganda, land is a sensitive issue, and citizens tend to be suspicious about large scale systematic surveys: they are concerned that the underlying motivation may be to evict them from their land.

Because some surveyors have in the past participated in land conflicts, and have given incorrect information to land owners, many people are still suspicious about the information provided by surveyors. And so a notice issued by a private surveyor, whether or not the surveyor has been authorized by the Commissioner, may not be easily accepted by the people. We have seen incidences (for example in Soroti) where government surveyors carrying out systematic demarcation were lynched almost to death by the local people.

In our view, in order to provide confidence to land owners while also protecting the lives of surveyors, it is necessary to leave the responsibility for issuing notice for systematic surveys to a senior government officer, such as a Minister or Commissioner. Where no problem is anticipated, this power can be delegated to a District surveyor.

Recommendation:

Responsibility for publishing the notice to carry out a general survey should be entrusted to the Commissioner of Surveys and Mapping or to a District Surveyor.

4.1.7 Power to issue notices to procure attendance by a surveyor

Section 21 of the Act empowers a Government Surveyor to summon a person occupying land, or employed on or connected with the land, to attend before the Surveyor for purposes of pointing out boundaries of land or rendering assistance necessary for settling up or repairing boundary marks. Failure to comply with this summons attracts a conviction under s 30 of the Act.

One view of this provision is that it helps ensure that land boundaries are correctly identified in the presence of neighbours and interested parties. This idea is consistent with the requirement in the Land Act for neighbours of a parcel of land to appear while boundaries are being demarcated. The requirement for neighbours to be summoned to provide information on the boundaries seems aimed at avoiding future conflicts, by ascertaining boundaries in the presence of all neighbours.

Another view of this provision is that it can be seen as providing services or labour to a surveyor to execute his duties. But to summon persons to provide labour or a service is unconstitutional and is contrary to Article 25(2), which prohibits anyone from soliciting forced labour.

Identification of land boundaries is the responsibility of the land owners. If the services of persons other than the land owner are used, then they are entitled to a fee. Furthermore, if the surveyor requires owners to provide extensive manual labour, such as cutting and clearing bush, this goes beyond the scope of 'providing information or assistance' to the surveyor; they should be entitled to payment for the additional labour offered to the surveyor.

Recommendations:

- (1) ***The Act should be amended to provide for payment of fees for manual labour offered to a surveyor while clearing boundaries, or for acquiring inter-visibility between survey instrument and target.***

- (2) ***The Act should be amended to ensure reasonable notification to current land owners and neighbouring landowners that they are required to be present or represented while boundaries are being demarcated. If they choose not to attend, then prima facie they should be taken to agree with the boundaries as demarcated by the survey. Costs of showing boundaries to the surveyor by the owners and neighbours (excluding manual labour) should be borne not by the surveyor but by the person for whose benefit the survey is made.***

4.1.8 Power to clear lines

Section 22 of the Act empowers a Government Surveyor to serve a notice on an owner or occupier of land requiring him or her to clear boundary or other lines necessary for the purpose of any survey, by removing trees, brushes, fences or crops.

Again, following the argument advanced in the above section, this provision could be seen as tantamount to forced labour, which is prohibited under the Ugandan constitution. This provision was very relevant when Government surveyors were the only ones allowed to execute surveys. Participation of landowners in clearing boundaries would reduce on the total expenses for undertaking the survey and which would be a benefit to the landowner.

Nowadays, most surveys (and especially cadastral surveys) are undertaken by private surveyors. The private surveyor and the land owner negotiate a fee which includes the surveyor's professional fees expenses. If the private surveyor has costed the clearing of boundaries, it is not necessary for the landowner to physically participate in clearing the boundary. Instead, the land owner would be present to show the survey team the extent of the boundary. Therefore, the issue of summoning a land owner to clear a boundary in this case becomes irrelevant. However for other types of surveys, such as control surveys, the land owner should be paid for any labour input in clearing a line, if it is not for the purposes of surveying his or her land.

Under the LSSP, Government introduced systematic demarcation (SD) as a means to fast-track the process of surveying and recording land parcels. Government considered that, under sporadic adjudication, many land owners (especially poor and vulnerable ones), may not get an opportunity to have their land surveyed and recorded. It is generally recognised that SD is cheaper than sporadic adjudication and that SD is an essential process for generating quality data for establishing a land information system. Of course, it makes sense to keep the cost of SD as low as possible so as to maximise its benefits. One option for lowering SD costs is to require land owners to be responsible for clearing their boundaries. This makes the exercise faster and cheaper because the survey team spends fewer days in the field.

Whereas the requirement for land owners to clear boundaries may not be so important in case of sporadic adjudication, it may be beneficial to enforce it during systematic demarcation.

Recommendation:

- (1) There should be provision for payment of a fee when a person is required to clear boundary lines. Where a private surveyor carries out a survey, this fee should be negotiated as part of the fees paid by the land owner to the surveyor.***
- (2) The provision in (1) above should be waived once an area has been declared a Systematic Demarcation Area.***
- (3) The Minister responsible for Lands should from time to time declare certain areas Systematic Demarcation Areas, in which a new set of guidelines should be developed to rapidly demarcate and survey land.***

4.1.9 Compensation for damage done by clearance

Provision is made under s 23 of the Act for payment of compensation as a result of damage done when clearing any boundary or other line in accordance with ss 22 or 29 of the Act. The decision whether to compensate is left to the surveyor. In case of dispute over compensation, the matter is to be referred to a Chief Magistrate or Magistrate Grade 1.

While discussing the issues under this section, we consider the current practice where surveying is predominantly carried out by private surveyors. Using the principles of natural justice, it is unfair to appoint the surveyor as both prosecutor and judge, yet this appears to be the situation under the current legislation. Private surveyors would want to maximise their benefits and hence would most likely not give an objective picture of the value of items to be compensated. Although the land owner still has recourse after disagreements, this is not practical in rural areas where court services are neither accessible nor understood.

Without complicating the work of a surveyor, our intention is to put in place measures that would discourage surveyors from unnecessarily destroying people's crops or properties. Payment of a reasonable compensation at market value is one way of ensuring that people's crops and properties are safeguarded. A market value should be agreed between the land owner and the surveyor, with a possibility of arbitration by members of the Area Land Committee. If the two parties still fail to agree, the matter should be handled by the Chief Magistrates Court, with a right of appeal to the High Court if a party is still not satisfied.

Recommendation

- (1) Section 23 should be amended to provide that the compensation payable under it be negotiated between the surveyor and the land owner, with an option of arbitration by the Area Land Committee.***
- (2) If that negotiation or arbitration fails, disputes over compensation should be handled by the Chief Magistrates Court, with a right of appeal to the High Court.***

(3) Where the Commissioner or District Surveyor becomes aware that any control or boundary mark lawfully erected is damaged, destroyed or removed, or requires repair or clearance, the Commissioner or District Surveyor may cause the mark to be re-erected, repaired or cleared, and may recover any expenses incurred from the person responsible under the Act for preserving the mark and keeping it clear.

4.1.10 Power to summon a person to give information

Under s 24 of the Act, a Government Surveyor may summon a person to give information about the boundaries of any piece of land. Section 30 makes it an offence to disobey the summons.

One of the benefits of surveying and recording land is to resolve or eliminate boundary conflicts. It is necessary that, at the time of demarcation and adjudication, boundaries are determined to the satisfaction of all neighbours and interested parties. This may sometimes require information from local people.

The Area Land Committees established under s 64 of the Land Act are most suited to summon a person to attend and give information, since they are empowered to administer oaths. However, we are aware that these Committees are not formed in some parts of the country, and this may make the work of a surveyor complicated if information is required for determining a boundary. However, in areas where systematic demarcation is proceeding, these Committees are already constituted.

Our recommendation therefore is to give the powers to summon to the Area Land Committees in systematic demarcation areas. A surveyor should only be allowed to summon outside systematic demarcation areas i.e. areas where parcels are sporadically adjudicated. This implies that SD areas must be declared by the Minister before SD can take place.

Recommendation:

- (1) The surveyor's power to summon should apply only to sporadic adjudication and should be cleared by the relevant Local Council in the area. If an area has been declared a Systematic Demarcation Area, the summons should be issued by the Chairperson of the Area Land Committee established under s 64 of the Land Act.***
- (2) The person summoned should be entitled to a witness allowance.***

4.1.11 Government Surveyor to mark out boundaries

Under s 25 of the Act, a Government Surveyor is authorized after due inquiry to mark out boundaries of Land. A person dissatisfied with the boundary retains a right to legal remedy to establish the correct boundary.

Marking out boundaries requires the presence of neighbours, interested parties, and witnesses such as members of Local Councils. It also requires technical people to ensure that certain standards are met while marking the boundaries. Some of the technical requirements include placement of marks at turning points, inter-visibility between consecutive marks, and placing marks at reasonable distances for easy identification.

To ensure transparency while marking the boundaries, we recommend that neighbours and Local Councils should be invited to witness and endorse. This requirement would not only help resolve boundary disputes but will be an opportunity for surveyors or members of Area Land Committees to sensitise the neighbours on the obligations and responsibilities towards maintaining boundary marks.

However, to ensure that the marks are planted to meet certain standards, we recommend involvement of technical people such as surveyors and members of the Area Land Committee.

As mentioned before, it is only in SD areas that the presence of these Committees is guaranteed. In such areas we suggest that these Committees take full responsibility for marking boundaries.

But outside these areas, we recommend that the Surveyor should mark the boundaries in the presence of local council representatives, and neighbours or their appointed agents, who should confirm their acceptance by endorsement on the survey forms. However, we suggest that failure to endorse the survey boundaries should not prevent the survey from progressing as long as the surveyor can demonstrate that he or she attempted to involve the neighbours to endorse the survey.

Recommendations:

- (1) In Special Demarcation (SD) areas, boundaries of land parcels at local levels should be adjudicated and marked out by Area Land Committees. Outside these areas, or when the survey is undertaken on government land, the surveyor should mark the boundaries in presence of Local Councils and neighbours of the land.***
- (2) The materials for marking boundaries should be selected by the Surveyor or the Area Local Committee, as the case may be, with the approval of the Commissioner of Surveys and Mapping.***
- (3) Failure by a neighbour to appear to endorse adjudication of a boundary should not prevent the survey from continuing, as long as there is reasonable evidence to show that the surveyor or the Committee made reasonable efforts to contact the neighbour.***
- (4) The determination of any boundary under this section should not prevent a person from seeking any legal remedy that he or she has for disputing the boundary or establishing any other unsurveyed boundary.***

4.1.12 Duty to preserve survey and boundary marks

Under s 26 (1) of the Act, the owner of land is under a duty at all times to maintain in good condition and repair and clear of high grass and bush/wood, all boundary marks lawfully erected on his or her land.

Survey marks are nodes or elements of a national and geodetic network in a country. They are used as reference points for tying new land parcels to a national cadastral data layer, which is a crucial component of a spatial data infrastructure. Survey points are not only used by cadastral surveyors, but act as a reference for all layers to ensure proper overlay of data layers in a multi-purpose land information system (LIS) or spatial data infrastructure (SDI). Their protection therefore is important for the development of a SDI. However, these points are normally erected on people's land. Since land belongs to the people, when survey markers are erected on someone's land, the owner of that piece of land is deprived of its use, however small it may be.

Because of the role they play, survey marks should be regarded as public goods. If this were taken seriously, every citizen should be responsible for the protection of survey marks. However, public goods tend to become nobody's goods; and so, in our view, an appropriate institution should be directly responsible for protecting survey marks. The appropriate institution would be the Surveys and Mapping Department. Local institutions, such as District Land Offices and Area Land Committees, should assist the Department of Surveys and Mapping to monitor the preservation of the survey marks placed in their respective areas.

While searching for appropriate sites for placing survey marks, surveyors should begin by identifying public buildings or land belonging to government institutions. If no such land or buildings exist in an area, or if the land is located in areas which do not favour the geometrical efficiency of the survey network, marks should be erected on private land—but only as a last resort. The land should be acquired by invoking the compulsory acquisition law. The owner of the land should be compensated for the portion of the land that has been acquired.

If a survey mark is destroyed or moved, it should be the responsibility of every citizen to report the matter to the relevant Area Land Committee, Local Council or Police, or the District Surveyor. If the mark is lawfully on a private person's land, it should be the responsibility of the owner or occupier to notify the relevant authorities. The District Surveyor should take all necessary actions to have the mark replaced; and depending on the level of accuracy¹⁷ of the survey mark, the Surveys and Mapping Department should be involved. It should be a criminal offence for any person to destroy or move a survey mark or conceal information regarding destruction or moving of a survey mark.

Under ss 30 and 31 of the Act, a penalty of Shs.100 is imposed for failure to comply with orders and notices under the Act and for wilfully obstructing, hindering or resisting any Government Surveyor or any worker or other person acting in aid of any such surveyor in the execution of his or her duty under the Act.

Recommendations

- (1) The protection of boundary markers should be the responsibility of citizens. However, the institution to take formal responsibility should be the Surveys and Mapping Department. The Area Land Committees established under s 64 of the Land Act, and Local Council chairperson, should monitor the condition of survey marks in their area of jurisdiction.***
- (2) As far as possible, survey marks (pillars) should be established on public buildings or Government institutional sites to minimise their destruction.***
- (3) Where survey marks are established on private land, the land owner should be compensated and the site secured.***

¹⁷ A survey beacon is categorized according to the level of accuracy, and this relates to methods that were used to establish the beacon. The most accurate points are of order 0, followed by order 1 and so on.

- (4) The destruction, damage or removal of survey and/or boundary marks should be reported to the Area Land Committees, Local Councils or District Surveyor, who should take appropriate action to have them restored. The District surveyor should in turn inform the Commissioner.***
- (5) Destruction of survey beacons maliciously or intentionally should be criminalised, with a heavy penalty.***
- (6) The offence under s 31 of the Act should be extended to include the obstruction of any licensed surveyor, and the penalty should be increased to reflect current economic reality.***

4.1.13 Recovery of expenses and fees

Under s 32(1) and (2) of the Act, all fees and expenses prescribed by the rules under the Act may be summarily sued for and recovered by the Commissioner or any Government Surveyor or any officer either of the Government or administration of a District, in a Magistrates Court.

The provisions in this section should essentially remain. However, we would recommend that suits by or against the Government should be instituted by the Attorney-General. Suits by or against local governments are handled by the respective local governments. Secondly, District Land tribunals can also handle suits of this nature as long as they are within the jurisdiction of the respective tribunals. Therefore, in addition to Magistrates Courts, suits could also be filed in the District Land Tribunals.

Recommendations:

- (1) The Attorney-General should handle suits by the Government in relation to expenses described under s 32(1) and (2). Local governments should institute suits in their own names.***
- (2) Section 32 should be amended to allow suits to be filed not only in Magistrates Courts but also in District Land Tribunals in accordance with their jurisdiction under the Land Act and Magistrates Court Act.***
- (3) Section 32 should also be amended to align it with the Government Proceedings Act and the Local Governments Act.***

4.1.14 Service and publication of notices

Provision is made under s 33 of the Act for personal service of notices, service by registered post, or publication and posting of notices at residences or a conspicuous position at the Local Administrative Headquarters of the administration of a district in the area.

Notices posted at the district administration offices may not be easily read by people in remote areas of the district. In an attempt to bring services closer to the people, the Land Act has introduced offices of a recorder and offices of Area Land Committees at Sub-County Level. In addition to the places specified in the Act, notices could be posted at the sub-county headquarters, and at the notice board used by the Area Land Committee and the Recorder. Copies of the notices should be sent to affected local councils.

Recommendation:

To enable wider publicity of notices, in addition to posting a notice at the administrative headquarters, a copy should also be posted at the Land Committee offices and the sub-county headquarters, as stipulated in regulation 20 of the Regulations. Copies of notices should also be sent to affected local Land councils.

4.1.15 Survey camps

Under s 34 of the Act, the Commissioner, his or her officers, agents and servants, may without payment of compensation build and occupy camps on any uncultivated land or un-built-on land and take from such land materials, wood or water for construction of camps, beacons and survey marks.

Land in many parts of the country is owned privately by individuals or by communities. By empowering the Commissioner or his surveyors or anybody to occupy land without authorisation from the owner, this section contravenes the rights to property enshrined in Article 26 of the Constitution. Although the purpose of setting up a survey camp may be in the interest of the citizens, it is not appropriate to acquire an individual's or a group's property for the good of the public, without compensating the owner. Where the Commissioner and his or her officers or others is empowered to set up camps on private land, this only should be done after adequate compensation has been paid.

Recommendation:

The Act should be amended to ensure, where survey camps are established on private property, that there is prompt payment of fair and adequate compensation in line with Article 26 (2)(b) of the Constitution and s 72 of the Land Act.

4.1.16 Immunity from civil and criminal liability

The Minister, Commissioner, District Surveyor or Authorised Officers are public officials and Civil Servants who, like other officers of Government and Local Government, carry out work on behalf of Central Government or Local Governments. They work for the public good and not for personal benefit. However, like all human beings, they may make mistakes and errors of judgment in the course of survey or other related work. These mistakes and errors may lead to loss of property or injury to members of the public. The loss may lead to criminal responsibility, which may lead to prosecution, say for damage occasioned to property. Similarly it may lead to civil liability, with the injured person entitled to recover damages.

In our view, as long as the public official acts in good faith and not maliciously or in a grossly negligent manner (which is tantamount to bad faith), the responsibility for injury should be born by the Central Government or Local Governments as his or her employer. The officer should be immune from personal criminal or civil liability.

Recommendation

- (1) The Minister, Commissioner, District Surveyor or Authorised Officer should not, in a personal capacity, be liable for any civil or criminal proceedings in respect of any act done in good faith in the performance of his or her duties under this Act. However, this immunity would not exist for gross negligence.***
- (2) The immunity would apply to an authorised person; and for the purposes of the Act, authorised persons would include a registered/licensed surveyor or a Government Surveyor with written permission from the Commissioner, or district surveyor or a person appointed by the Minister under this Act.***

4.2 Additional Issues and Proposals

4.2.1 Unauthorised surveys

Many of the factors responsible for the poor state of surveys (and mainly on Mailo land) can be attributed to laxity in the law on criminalising people involved in the practice of fake surveys. Fake surveys include: *desk surveys*, in which data is fabricated without undertaking fieldwork; and inaccurate surveys, in which data is altered to achieve the desired accuracy standard. In many of these cases, the surveys are done by unauthorised people such as chainmen and technicians with assistance from professionals. This leads, for example, to the preparation of titles in which the acreage stated is either less or more than it is on the ground, or to discrepancies between the shape, location and dimensions of the parcel presented for registration from the reality on the ground. In the worst cases, titles are produced without any physical parcel on the ground.

It may be easy to deal with licensed surveyors who participate in any of the above undesirable practices (because the licensing body has a mechanism for disciplining its members). But it may not be possible to discipline unregistered members involved in non-professional activities. The only logical recourse is to make it a criminal offence for a person not authorised under this Act to undertake any survey. In addition, authorised surveyors should be made accountable for the actions of people working under them. In this way, unprofessional tendencies will be minimised or eliminated.

Recommendation:

A non-authorised person, who carries out a survey in a manner not authorised by this Act and subsidiary legislation, commits an offence and should be liable, on conviction, to a fine not exceeding five thousand currency points or imprisonment not exceeding two years, or both.

4.2.2 Power of a registered/licensed surveyor to conduct a survey

Any survey conducted to create a parcel must be carried out by a registered and licensed surveyor. The practice is normally that the Commissioner of Surveys and Mapping causes a survey to be undertaken by issuing an 'Instruction to Survey' (commonly known as I/S among the survey community). The I/S is equivalent to an appointment letter given to an authorised surveyor to undertake a survey in a certain area. The I/S contains technical specifications on how the survey should be carried out.

Upon receipt of the I/S, the surveyor goes ahead and executes the survey and submits it to the Commissioner for checking, before it is finally plotted on cadastral sheets.

The above procedure, if followed strictly, should ensure that surveys are carried out using approved standards set the Commissioner of Surveys and Mapping. It is also within the powers of the Commissioner or district surveyor to cross-check a surveyor's work in the field to ensure compliance with a number of technical specifications, such as: whether the dimensions on the ground tally with what has been presented; whether survey control points used are appropriate and in good physical condition; whether corner

beacons have been planted and are of the required specifications; and so on.

On the other hand there is some concern that instructions to survey cause a delay in executing surveys, are redundant, and therefore unnecessary. The concern stems from the fact that the quality of a surveyor's work is chiefly monitored at registration/licensing level. The licensing process implies that a surveyor is authorised to execute surveys in Uganda, without any further commissioning. Issuing an I/S is therefore analogous to granting permission to a licenced driver to drive on a certain road. The risk of waiving the issue of I/S to private surveyors is that those surveyors may then be unaware of the Commissioner's specific needs for surveys in a given area, and may produce data that is not consistent with national or local standards prescribed for an area. However, this risk may be overstated, considering that private surveyors are legally obliged to present their work to the Commissioner for checking and approval. Given this background, we are of the opinion that I/S should be waived for private licensed surveyors, but should be enforced for government surveyors and any other people commissioned to execute surveys under the Act.

Recommendation:

- (a) Instructions to Survey should be waived for private licensed surveyors, but should be enforced for Government Surveyors and other people commissioned to execute surveys under this Act.***
- (b) Private/Licensed Surveyors may optionally seek guidance from the Commissioner, if in doubt about what technical standards should be applied for a given survey.***
- (c) The Commissioner should produce and issue a handbook detailing survey standards to be applied to various types of surveys in different areas.***

4.2.3 Survey and mapping standards

Over the last decade, the use of spatial data has greatly increased as a result of improvements in technologies (such as GIS and CAM) that use

spatial data. However, in our view the spatial data industry in Uganda is growing in a very uncontrolled and uncoordinated way, and this has negative consequences on the usability of spatial data.

Although many people believe that the spatial data industry may not need to be controlled through legislation, we consider that it is necessary to institute core parameters to protect users of spatial data. It is, therefore, important that survey and mapping standards be defined and enforced by a competent institution. The process of development of standards should not be a top-down approach, but a consultative one where the parties affected by the standard should be involved.

Standards may include guidelines for surveying, field observations, reporting surveys, mapping, storage, and dissemination of data from surveys. A survey standard should be a statutory instrument, but not subordinate legislation. For the purposes of this Act, standards should include (but not be restricted to):

- (i) Conducting surveys; booking and submission of data from various surveys using different instruments; the minimum information that should be collected.
- (ii) Parcel Identification, referencing and subdivision.
- (iii) Spatial referencing, map layout, symbolization and labeling of various types of maps.
- (iv) Records management in survey offices at national and local government levels.
- (v) Survey beacons.

To operationalise the standards and other provisions of this Act, the Minister should be able to make written guidelines for surveying (*survey guidelines*) stating ways of complying with survey standards developed. A survey guideline should clearly indicate the survey standard to which it applies. Furthermore, it should clearly indicate the ways in which a survey may be carried out to comply with the survey standard.

Some of the above guidelines existed in form of Survey Regulations issued by the Commissioner and Land Regulations. However, most of these are now obsolete and cannot be used anymore. Therefore, new guidelines need to be put in place

Recommendations

(1) The Minister should be empowered on the recommendation of the Commissioner by Statutory Instrument to prescribe survey standards and guidelines, to include at least the following:

- ***spatial references to be used for all National Spatial Datasets;***
- ***the information to be collected during surveys;***
- ***the information to be shown on the plan of survey, including how the information must be shown (identification, credits, map number, north arrow, scale bar, etc)***
- ***parcel identification;***
- ***the accuracy level to be achieved on various types (classes) of survey;***
- ***the characteristics of the survey marks to be used;***
- ***documentation of National Spatial Datasets;***
- ***the establishment of a National Geographical Committee for harmonisation of geographical names;***
- ***the form of presentation of survey data in digital formats;***
- ***the methods of observation and submission of survey jobs, taking into account the type of equipment used.***

Before making a survey standard or survey guideline, the Minister should consult with affected entities such as the surveyors' professional institution, Surveyors Registration Board, local governments whose area is affected by the standard or guideline, and other entities the Minister considers appropriate.

(2) The Minister should be able to exempt a person or an institution or an area from conforming to a certain standard.

(3) If there is an inconsistency between a survey standard and a survey guideline, the survey standard should prevail to the extent of the inconsistency.

4.2.4 Capture and sharing of National Core Spatial Datasets

The Surveying and Mapping Department is the custodian of two important datasets: the cadastral dataset and the topographic map. Most of the data is in paper form and does not provide many opportunities for its applicability. Furthermore, many potential users of spatial datasets are not aware of its availability or its potential use. Considering that most GIS applications require these datasets as basic input layers for analysis, there is a need to mandate and oblige the Surveys and Mapping Department to:

- (i) capture, maintain and update the above core datasets in digital format with a national coverage;
- (ii) set standards for development of these datasets;
- (iii) develop metadata at discovery, exploratory and feature level for users to identify, assess and use the datasets;
- (iv) Provide access of the datasets to the LIS Centre/Institution for dissemination; and
- (v) provide guidance to other institutions that intend to use public funds for undertaking mapping activities in Uganda.

Recommendations

The Surveys and Mapping Department should be legally obliged to:

- (1) capture, maintain and update the above core datasets (cadastral dataset and the topographic map) in digital format with a national coverage;***
- (2) set standards for development of the above datasets;***
- (3) develop metadata at discovery, exploratory and feature level for users to identify, assess and use the datasets;***
- (4) provide access of the above datasets to the LIS Centre/Institution for dissemination; and***

(5) provide guidance to other institutions that intend to use public funds for undertaking mapping activities in Uganda.

4.2.5 Power of a Minister to amend Schedule

The Act authorises the Minister, with the approval of Cabinet, by statutory instrument to amend the Schedule to the Act.

4.2.6 Mode of amendment

As we have already observed, the current form of the Act is outdated in that it does not provide for use of modern techniques. It does not provide for mapping infrastructure and the diffusion of a spatial data infrastructure. It also contravenes various sections of the Land Act and the Constitution. Many of the sections require rewriting to make them compliant with modern techniques and achieve harmonisation with other laws. In view of the extensive amendments proposed in this Act, we consider that the whole Act needs to be re-enacted..

Recommendation:

- ***The whole Act should be re-enacted.***

5 Summary of Conclusions and Recommendations

Issue	Recommendation
Definition of a surveyor	<ul style="list-style-type: none"> • Section 1 of the Act should be amended so as to define a surveyor as a Registered/Licensed Land Surveyor, or a Government Land Surveyor with written authority from the Commissioner or District Surveyor. This definition should exclude other types of surveyors, such as quantity surveyors and valuers.
Who is authorized to execute surveys?	<ul style="list-style-type: none"> • A new subsection should be added to section 2 to clarify that non-government surveyors can be registered and licensed to carry out surveys.

	<ul style="list-style-type: none"> • Control-surveys and any other special surveys should be the responsibility of the Commissioner, especially primary and secondary control-surveys. However, the Commissioner may authorize a private surveyor to carry out control-surveys. • District Surveyors should be empowered to authorize cadastral surveys and lower order control-surveys in their districts. These surveys should conform to the general standards set by the Commissioner. • A District Surveyor should be compelled to avail survey records in his or her district to the Commissioner for quality assurance and custody. The district surveyor should keep copies of survey records at the district. • The name of the officer approving the survey should be clearly indicated on the deed plan so as to own responsibility. • For technical matters concerning land surveying, District Surveyors should be responsible to the Commissioner. However, this should not limit the powers of Local Governments as stipulated in the Local Government Act.
Power of Minister to order special surveys	<ul style="list-style-type: none"> • In addition to the existing provisions and to ensure quality control of the special surveys, where an officer other than the Commissioner is appointed to carry out a special survey, that other officer should be under the control and supervision of the Commissioner.
Board to license surveyors	<ul style="list-style-type: none"> • Sections 4-18 of the Survey Act, having been superseded by the Surveyors Registration Act, should

	<p>be repealed.</p> <ul style="list-style-type: none"> • The specific amendments to these sections should be considered while reviewing the Surveyors Registration Act.
Power of surveyors to enter land	<ul style="list-style-type: none"> • Surveyors may enter government properties for purposes of undertaking survey or erecting permanent survey marks • The power to enter on private land should be subject to giving reasonable notice to the owner/occupier, with copies to the local councils in the area. • Upon entry upon private property, the Surveyor should state: <ul style="list-style-type: none"> • the purpose of the survey; and • that this Act permits him/her to access private property. • Where consent has not been granted because an owner/occupier is not available, the Surveyor should be entitled to enter those areas of the property where the public are generally permitted to enter to consult the owner/occupier. However, this should be done in the accompaniment of local leaders in the area. • Upon entering the property, the surveyor and his/her team should be entitled to set up equipment only for the purposes of executing a survey.
Power to issue notice of intention to carry out a survey	<ul style="list-style-type: none"> • Responsibility for publishing the notice to carry out a general survey should be entrusted to the Commissioner of Surveys and Mapping or to a District Surveyor.
Power to issue notices	<ul style="list-style-type: none"> • The Act should be amended to provide for payment

<p>to procure attendance by a surveyor</p>	<p>of fees for manual labour offered to a surveyor while clearing boundaries, or for acquiring inter-visibility between survey instrument and target.</p> <ul style="list-style-type: none"> • The Act should be amended to ensure reasonable notification to current land owners and neighbouring landowners that they are required to be present or represented while boundaries are being demarcated. If they choose not to attend, then prima facie they should be taken to agree with the boundaries as demarcated by the survey. Costs of showing boundaries to the surveyor by the owners and neighbours (excluding manual labour) should be borne not by the surveyor but by the person for whose benefit the survey is made.
<p>Power to clear lines</p>	<ul style="list-style-type: none"> • There should be provision for payment of a fee when a person is required to clear boundary lines. Where a private surveyor carries out a survey, this fee should be negotiated as part of the fees paid by the land owner to the surveyor. • The above provision should be waived once an area has been declared a Systematic Demarcation Area. • The Minister responsible for Lands should from time to time declare certain areas Systematic Demarcation Areas, in which a new set of guidelines should be developed to rapidly demarcate and survey land.
<p>Compensation for damage done by clearance</p>	<ul style="list-style-type: none"> • Section 23 should be amended to provide that the compensation payable under it be negotiated between the surveyor and the land owner, with an option of arbitration by the Area Land Committee. • If that negotiation or arbitration fails, disputes over

	<p>compensation should be handled by the Chief Magistrates Court, with a right of appeal to the High Court.</p> <ul style="list-style-type: none"> • Where the Commissioner or District Surveyor becomes aware that any control or boundary mark lawfully erected is damaged, destroyed or removed, or requires repair or clearance, the Commissioner or District Surveyor may cause the mark to be re-erected, repaired or cleared, and may recover any expenses incurred from the person responsible under the Act for preserving the mark and keeping it clear.
<p>Power to summon a person to give information</p>	<ul style="list-style-type: none"> • The surveyor's power to summon should apply only to sporadic adjudication and should be cleared by the relevant Local Council in the area. If an area has been declared a Systematic Demarcation Area, the summons should be issued by the Chairperson of the Area Land Committee established under s 64 of the Land Act. • The person summoned should be entitled to a witness allowance.
<p>Government Surveyor to mark out boundaries</p>	<ul style="list-style-type: none"> • In Special Demarcation (SD) areas, boundaries of land parcels at local levels should be adjudicated and marked out by Area Land Committees. Outside these areas, or when the survey is undertaken on government land, the surveyor should mark the boundaries in presence of Local Councils and neighbours of the land. • The materials for marking boundaries should be selected by the Surveyor or the Area Local Committee, as the case may be, with the approval of

	<p>the Commissioner of Surveys and Mapping.</p> <ul style="list-style-type: none"> • Failure by a neighbour to appear to endorse adjudication of a boundary should not prevent the survey from continuing, as long as there is reasonable evidence to show that the surveyor or the Committee made reasonable efforts to contact the neighbour. • The determination of any boundary under this section should not prevent a person from seeking any legal remedy that he or she has for disputing the boundary or establishing any other unsurveyed boundary.
<p>Duty to preserve survey and boundary marks</p>	<ul style="list-style-type: none"> • The protection of boundary markers should be the responsibility of citizens. However, the institution to take formal responsibility should be the Surveys and Mapping Department. The Area Land Committees established under s 64 of the Land Act, and Local Council chairperson, should monitor the condition of survey marks in their area of jurisdiction. • As far as possible, survey marks (pillars) should be established on public buildings or Government institutional sites to minimise their destruction. • Where survey marks are established on private land, the land owner should be compensated and the site secured. • The destruction, damage or removal of survey and/or boundary marks should be reported to the Area Land Committees, Local Councils or District Surveyor, who should take appropriate action to have them restored. The District surveyor should in turn inform the Commissioner. • Destruction of survey beacons maliciously or intentionally should be criminalised, with a heavy penalty.

	<ul style="list-style-type: none"> • The offence under s 31 of the Act should be extended to include the obstruction of any licensed surveyor, and the penalty should be increased to reflect current economic reality.
Recovery of expenses and fees	<ul style="list-style-type: none"> • The Attorney-General should handle suits by the Government in relation to expenses described under s 32(1) and (2). Local governments should institute suits in their own names. • Section 32 should be amended to allow suits to be filed not only in Magistrates Courts but also in District Land Tribunals in accordance with their jurisdiction under the Land Act and Magistrates Court Act. • Section 32 should also be amended to align it with the Government Proceedings Act and the Local Governments Act.
Service and publications of notices	<ul style="list-style-type: none"> • To enable wider publicity of notices, in addition to posting a notice at the administrative headquarters, a copy should also be posted at the Land Committee offices and the sub-county headquarters, as stipulated in regulation 20 of the Land Regulations. Copies of notices should also be sent to affected local councils.
Survey camps	<ul style="list-style-type: none"> • The Act should be amended to ensure, where survey camps are established on private property, that there is prompt payment of fair and adequate compensation in line with Article 26 (2)(b) of the Constitution and s 72 of the Land Act.
Immunity from civil and criminal liability	<ul style="list-style-type: none"> • The Minister, Commissioner, District Surveyor or Authorised Officer should not, in a personal capacity, be liable for any civil or criminal proceedings in

	<p>respect of any act done in good faith in the performance of his or her duties under this Act. However, this immunity would not exist for gross negligence.</p> <ul style="list-style-type: none"> • The immunity would apply to an authorised person; and for the purposes of the Act, authorised persons would include a registered/licensed surveyor or a Government Surveyor with written permission from the Commissioner, or district surveyor or a person appointed by the Minister under this Act.
Unauthorised surveys	<ul style="list-style-type: none"> • A non-authorised person, who carries out a survey in a manner not authorised by this Act and subsidiary legislation, commits an offence and should be liable, on conviction, to a fine not exceeding five thousand currency points or imprisonment not exceeding two years, or both.
Power of a registered/licensed surveyor to conduct a survey	<ul style="list-style-type: none"> • Instructions to Survey should be waived for private licensed surveyors, but should be enforced for Government Surveyors and other people commissioned to execute surveys under this Act. <p>mPrivate/Licensed Surveyors may optionally seek guidance from the Commissioner, if in doubt about what technical standards should be applied for a given survey.</p> <ul style="list-style-type: none"> • The Commissioner should produce and issue a handbook detailing survey standards to be applied to various types of surveys in different areas.
Survey and mapping standards	<ul style="list-style-type: none"> • The Minister should be empowered on the recommendation of the Commissioner by Statutory Instrument to prescribe survey standards and guidelines, to include at least the following: <ul style="list-style-type: none"> • spatial references to be used for all

	<p>National Spatial Datasets;</p> <ul style="list-style-type: none"> • the information to be collected during surveys; • the information to be shown on the plan of survey, including how the information must be shown (identification, credits, map number, north arrow, scale bar, etc) • parcel identification; • the accuracy level to be achieved on various types (classes) of survey; • the characteristics of the survey marks to be used; • documentation of National Spatial Datasets; • the establishment of a National Geographical Committee for harmonisation of geographical names; • the form of presentation of survey data in digital formats; • the methods of observation and submission of survey jobs, taking into account the type of equipment used. <ul style="list-style-type: none"> • Before making a survey standard or survey guideline, the Minister should consult with affected entities such as the surveyors' professional institution, Surveyors Registration Board, local governments whose area is affected by the standard or guideline, and other entities the Minister considers appropriate. • The Minister should be able to exempt a person or an institution or an area from conforming to a certain standard. • If there is an inconsistency between a survey standard and a survey guideline, the survey standard
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	should prevail to the extent of the inconsistency.
Capture and sharing of National Core Spatial Datasets	<p>The Surveys and Mapping Department should be legally obliged to:</p> <ul style="list-style-type: none"> • capture, maintain and update the above core datasets (cadastral dataset and the topographic map) in digital format with a national coverage; • set standards for development of the above datasets; • develop metadata at discovery, exploratory and feature level for users to identify, assess and use the datasets; • provide access of the above datasets to the LIS Centre/Institution for dissemination; and • provide guidance to other institutions that intend to use public funds for undertaking mapping activities in Uganda.
Mode of amendment of Act	<ul style="list-style-type: none"> • The whole Act should be re-enacted.