

**AN EVALUATION OF THE CADASTRAL SYSTEM IN KENYA
AND A STRATEGY FOR ITS MODERNIZATION**

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**A thesis submitted in fulfillment for the award of the Degree of
Doctor of Philosophy in the University of Nairobi, School of
Engineering, Department of Geospatial and Space Technology**

AUGUST, 2013

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
List of Figures	ix
List of Tables	x
List of Appendices	xii
List of Abbreviations and Acronyms	xiii
ABSTRACT.....	xvii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 General Background	1
1.2 Statement of the Problem	5
1.3 Research Objectives.....	7
1.4 Justification and Relevance.....	8
1.5 Scope and Limitations of the Thesis	11
1.6 Significance of the Study.....	11
1.7 Definition of Key Terms	12
1.7 Organization of the Thesis	15
CHAPTER TWO	16

THE CADASTRAL SYSTEM IN KENYA.....	16
2.1 The Structure of the System	16
2.2 Cadastral Surveying and Mapping System.....	16
2.3 The Cadastral Boundary Systems in Kenya	17
2.3.1 The Fixed Boundary	17
2.3.2 The General Boundary	18
2.3.3 The Fixed General Boundary.....	21
2.4 The Land Tenure Systems in Kenya	21
2.4.1 The Public Land Tenure.....	22
2.4.2 The Private Land Tenure	22
2.4.3 The Customary Land Tenure	23
2.4.4 The Informal Land Tenure.....	24
2.4.5 The Ten-Mile Coastal Strip.....	24
2.4.6 A Critique of the Land Tenure System in Kenya	25
2.5 Land Registration Systems in Kenya	26
2.5.1 Registration under RDA	27
2.5.2 Registration under LTA	27
2.5.3 Registration under GLA	28
2.5.4 Registration under RTA	29
2.5.5 Registration under RLA	30
2.5.6 Land Registration Act No.3 of 2012	30
2.5.7 A Critique of the Registration Systems	31
2.6 The Cadastral Processes in Kenya	31
2.6.1 General Introduction	31
2.6.2 Physical Development Plans	31
2.6.3 The Physical Planning Act.....	32
2.6.4 Allocation of New Grants	32
2.6.5 Cadastral Surveying Processes	33
2.6.6 Land Adjudication Processes.....	36
2.6.7 Land Subdivision Processes.....	37
2.6.8 Title Registration Processes	38
2.6. General Comments	44
CHAPTER THREE	45
STRATEGIES FOR A MODERN CADASTRAL SYSTEM	45
3.1 General Introduction	45
3.2 The Achievements.....	45
3.2.1 Land Adjudication Programmes	45
3.2.2 Settlement Schemes and Cooperative Farms	46
3.2.3 Information Communication Technology (ICT) Unit	46
3.2.4 National Land Information Management System (NLIMS)	47

3.2.5 Computerization in the Department of Survey.....	47
3.2.6 Kenya National Spatial Data Infrastructure (KNSDI)	48
3.2.7 Development of a National Land Policy	48
3.2.8 Development of Unique Parcel Identifier	49
3.2.9 Mapping of the Exclusive Economic Zone.....	49
3.2.10 Development of a Modern Geodetic Reference Frame.....	50
3.3 Challenges Facing the Cadastral System in Kenya	51
3.3.1 The structure of the system	51
3.3.2 Land Tenure System.....	52
3.3.3 Digital Land Information	52
3.3.4 The Cadastral Data Models.....	53
3.3.5 Land Parcel Boundaries.....	53
3.3.6 Land Registration Systems	54
3.3.7 Slow Adoption of Modern Technology	54
3.3.8 Duplication of Land Information	55
3.3.9 Low Cadastral Coverage.....	55
3.3.10 Lack of 3D Cadastre.....	55
3.4 Evaluation of the Cadastral system	56
3.5 Cadastre 2014 Model.....	56
3.5.1 Cadastre 2034	60
3.5.2 A Critique of Cadastre 2014 and Cadastre 2034	61
3.5.3 A Summary.....	61
CHAPTER FOUR	63
RESEARCH DESIGN AND METHODOLOGY	63
4.1 Evaluation of the Cadastral System	63
4.2 Testing of Geospatial Technologies	64
4.2.1 The GPS Technology.....	65
4.2.2 Point Positioning	65
4.2.3 Relative Positioning.....	66
4.2.4 GPS-RTK Positioning.....	68
4.2.5 Field Measurements	69
4.2.6 Measurements of General Boundaries.....	74
4.3 Remote Sensing Technology	75
4.3.1 Introduction	75
4.3.2 The study Area	76
4.4 GIS and Cadastral Modelling in Kenya	78
4.4.1 Introduction	78
4.4.2 Design of the Modern Cadastral Database Model.....	79
4.4.3 Conceptual Data Modeling	80
4.4.4 Logical Modeling	82

4.4.5 Physical Level Modelling	89
4.4.6 The study Site.....	89
4.4.7 Transformation of Coordinates.....	89
CHAPTER FIVE	92
DATA FINDINGS AND ANALYSIS	92
5.1 Results of the Evaluation Processes	92
5.1.1 The Strengths of the System	95
5.1.2 The Weaknesses of the System	97
5.2 Results of Geospatial technologies.....	101
5.2.1 The Global Positioning	101
5.2.2 GPS and Fixation of General Boundaries	103
5.3 Satellite Imagery Mapping	105
5.3.1 Rural Land Parcels	108
5.3.2 Analysis and Discussions	108
5.4 Development of a Modern Cadastral Database	110
5.4.1 Distribution of Respondents	110
5.4.2. Requirements of the Respondents	112
5.4.3 Preferences by Members of the Public.....	113
5.4.4 Professional Groups Preferences	114
5.4.5 Communication of Cadastral Information	114
5.4.6 Data to be included in the Database.....	115
5.4.7 Modern Management of the Cadastre	116
5.5 Conceptual and Logical Modelling	117
5.5.1 The Three-Level Architecture	117
5.5.2 The Multi Valued Vector Map.....	118
5.5.3 Smiths Normalization Procedure	118
5.7 Physical Modelling	119
5.7.1 Transformation of Coordinates.....	119
5.7.2 Acquisition of High Spatial Resolution Imagery	120
5.7.3 Composition of Normalized Tables	122
5.7.4 The Query Operations.....	122
5.7.5 The Cadastral Database Model	130
CHAPTER SIX.....	133
CONCLUSION	133
6.1 Introduction	133
6.2 Summary	133

6.3 Conclusions	135
6.4 Recommendations	137
6.5 Areas for Further Research	138
REFERENCES	139
Appendices.....	146

List of Figures

Fig 2.1 Current Structure of the Ministry of Lands (Source; Department of Surveys, 2009) 19	
Fig 4.1 Map showing location of GPS Test site in Kwale County, Kenya.....	70
Fig 4.2 Leica GPS Receiver over control point SKP 201.S.1	70
Fig 4.3 SKP 201.S.1 and GPS Point (Mwakapeku)	71
Fig 4.4 Leica GPS Satellite Receiver at control point SKP 200.S.10	71
Fig 4.5 SKP 200.S.10 and GPS Point (DALGUBE)	72
Fig 4.7 Location of the Satellite Test site in Machakos County, Kenya.....	77
Fig 4.8 Three-Level Database Architecture (Connolly and Begg, 1999: 40)	81
Fig 4.9 Functional Dependency Diagram (Source: Own Figure)	85
Fig 4.10 Dependency Diagrams showing property ownership (Source: Own Figure)	86
Fig 4.11 GIS Database Study Site (Source, National Museums of Kenya).....	91
Fig 5.1 Layout of the Bumbani Parcels in Kwale County, Kenya	104
Fig 5.2 Layout of the Nucleus Estate in UTM Coordinates	105
Fig 5.3 Distribution of parcels by percentages	106

Fig 5.5 Parcels on Orthophoto and satellite imagery	106
Fig 5.4 Parcels Demarcated on Orthophoto	106
Fig 5.6 Area variations per category	107
Fig 5.7 Distribution of the respondents (Source: Field Study, 2009)	111
Fig 5.8 Requirements of the respondents (Source Field Study, 2009)	113
Fig 5.9 Preferences of Members of the Public (Source: Field Study, 2009)	113
Fig 5.10 Professional Group Preferences (Source: Field Study, 2009)	114
Fig 5.11 Communication of Cadastral Information (Source: Field Study, 2009)	115
Fig 5.12 Data to be included in the Database (Source: Field Study, 2009)	116
Fig 5.13 Management of Cadastral Data(Source: Field Study, 2009)	117
Fig. 5.14 Digitized cadastral map of Mavoko Site (Source: Field Work)	120
Fig 5.15 Cadastral map and the orthophoto imagery of the study area	121
Fig 5.16 The cadastral Systems in sustainable development [Enemark, 2004]	131

List of Tables

Table 2. 1 The Process of preparation of the Part Development Plan (PDP)	34
Table 2.2 The Process of allocation of Government New Grants	35
Table 2.3 The Process of Setting Apart of Trust Lands	35
Table 2.4 Contents of the index card	36
Table 2.5 Precise Cadastral Processes	36
Table 2.6 The Process of Land Consolidation	40

Table 2.7 The Process of Systematic Land Adjudication	41
Table 2.8 Urban Subdivision Processes.....	42
Table 2.10 The Conveyancing Process of Title Registration	42
Table 2.11 Title Registration Process	44
Table 4.1 Coordinates of SKP 201.S.1 (MWAKAPEKU)	71
Table 4.2 Coordinates of 200.S.10	71
Table 4.3 Parcels Ownership	86
Table 4.4 Back Plans	87
Table 4.5 Survey Mark	87
Table 4.6 Surveyor.....	87
Table 4.7 Deed Plans Table	88
Table 4.8 List of Datum Coordinates (Source: Survey of Kenya, Ruaraka)	90
Table 5.1 International Standards and Performance Gaps.....	92
Table 5.2 Results of Differential GPS Observations in UTM	103
Table 5.3 Transformation parameters for Cassini-UTM Projections.....	103
Table 5.4 Sampled Parcels in the study Area	106
Table 5.5 Parcel size categories.....	107
Table 5.6 % area differences, orthophoto/ satellite.....	107
Table 5.7 % area differences, orthophoto/ PID	107
Table 5.8 Derived Transformation Parameters	120

Table 5.9 Label Query to show PIN Numbers of plot owners.....	124
Table 5.10 Query of selected forty plots in the study area	125
Table 5.11 Query showing multi plot ownership (1:M) Relationship.....	126
Table 5.12 Plots whose areas are greater than 0.06ha in Red (selection)	126
Table 5.13 Developed plots in Red and undeveloped plots in Blue	127
Table 5.14 Geodatabase containing files and relates.....	128
Table 5.15 Selected multiple owned plots in ArcMap (1:M) Relationship	128
Table 5.16 Plot L.R.Nos 26699/898 and the relates in ArcMap	129
Table 5.17 Multi-Owned plots labeled onto the cadastral digital map	130

List of Appendices

Appendix 1 Questionnaire and cover letter.....	146
Appendix 2 Questionnaire for members of the Afya Sacco	146
Appendix 3 Ownership Table.....	149
Appendix 4 Surveyor Table.....	150
Appendix 5 National ID Table	152
Appendix 6 Passport Table	153
Appendix 7 Deed Plans Table.....	154
Appendix 8 Survey Mark Table	155
Appendix 9 UIButton Script	158
Appendix 10 Add Label Script.....	159

Appendix 11 List of Cassini Coordinates of the Nucleus Estate (1950) Arc Datum.....	160
Appendix 12 List of UTM Coordinates of the Nucleus Estate (1960 Arc Datum)	161
Appendix 13 List of UTM Coordinates of the Bumbani plot (1960 Arc Datum).....	162
Appendix 14 List of Activity Diagrams	163

List of Abbreviations and Acronyms

UN	-	United Nations
FIG	-	International Federation of Surveyors
UNCHS		United Nations Centre for Human Settlement (Habitat)
USA	-	United States of America
CFD	-	Swedish Central Board of Real Estate Data
GPS	-	Global Positioning System
GDP	-	Gross Domestic Product
ICT	-	Information and Communications Technology
SWOT		Strengths, Weaknesses, Opportunities and Threats
MVVM		Multi Valued Vector Maps
GIS	-	Geographic Information Systems
MoL	-	Ministry of Lands
NACHU	-	National Co-operative Housing Union
UTM	-	Universal Traverse Mercator
PWD	-	Public Works Department
PDP	-	Part Development Plan
RTA	-	Registration of Titles Act
GoK	-	Government of Kenya
PIDS	-	Preliminary Index Diagrams
RIMS	-	Registry Index Maps
RLA	-	Registered Lands Act
IBEA Co	-	Imperial British East Africa Company
RDA	-	Registration of Documents Act
LTA	-	Land Titles Act, Cap 282 of 1908

ABSTRACT

The Cadastral system in Kenya was established in 1903 to support land alienation for the white settlers who had come into the country in the early part of the 20th Century. In the last hundred years, the system has remained more or less the same, where land records are kept in paper format and majority of operations are carried out on a manual basis. The lack of a modern cadastral system has contributed to problems in land administration in the country.

The Government has expressed the need to modernize the cadastral system in order to facilitate better land administration, support the development of an integrated Land Information Management System and a National Spatial Data Infrastructure. However, one persistent denominator to these efforts has been the lack of strategies for such modernization.

This study set out to contribute to the solution of this problem through the following objectives; evaluation of the current cadastral system in Kenya, identification and analysis of appropriate technologies and strategies for modernization of the cadastral system in Kenya, and testing of the suitability of the identified technologies and strategies in the cadastral system.

The Methods adopted included; administration of standard questionnaires to selected stakeholders, personal interviews, field observations and review of existing literature on cadastre. Stake holder involvement in the study consisted of private and public sector Land Surveyors, Lawyers, Valuers, members of Co-operative organizations, and general users of cadastral information.

The study also carried out field measurements with selected geospatial technologies in selected study sites to assess their suitability in cadastral mapping and modelling. These technologies included; Global Positioning System, high spatial resolution satellite imagery, and Geographical Information System. Further work involved the development and testing a new cadastral model based on the Multi-Value Vector Maps approach and Smiths Normalization procedures.

The main results from the research are that; the administrative structure is bureaucratic, complex and highly centralized; the cadastral processes are equally complex, duplicative and slow; and all the tested technologies were found suitable for cadastral mapping and modelling, however, the GPS technology lacks proper guidelines for application and calibration bases.

In terms of cadastral modelling, it was found that Smiths Normalization and Functional Dependency Diagrams automatically produce fully Normalized Tables and successfully query and display of multi-parcel ownerships. The study also found out that a hybrid of Object-Relational database management system is better-suitable for the development of GIS-based cadastral databases than typical Relational or Object-Oriented models on their own.

The study concludes that the main problem with the cadastral system in Kenya is lack of computerization and decentralization, and therefore recommends for a complete decentralization of the administrative system and implementation of a comprehensive computerization possibly through the development of a Land Information System.