

Journal of Land Administration in Eastern Africa



JLEA Volume 1
Number 1

January –June 2013

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Land Registration Systems in Eastern Africa

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Editorial

This is our first edition of the Journal of Land Administration in Eastern Africa, a publication of the Eastern Africa Land Administration Network (EALAN) that is hosted and managed by the Ardhi University in Tanzania. In November 2011, Ardhi University had agreed to a suggestion by the newly established Eastern African Land Administration Network (EALAN) to make the Journal, a property of the network. The EALAN comprises of universities conducting education and training in land administration in Tanzania, Kenya, Uganda, Ethiopia, and Rwanda. JLAEA mirrors the aspirations of EALAN whose mission is to ensure quality education and training, research, scientific publications, information dissemination, documentation and public services through integrated cross disciplinary team work in land administration.

In this issue our readers will be apprised of the evolving land administration in the Eastern African region with an in-depth historical account of land surveying as a professional practice and prerequisite in the land registration systems from Kenya and Tanzania where the Surveying profession was introduced more than 100 years ago. In the Kenyan case, Gordon Wayumba struggles to situate the historical cadastral system in the context of the 2010 Kenya Constitution which for the first time introduced a land commission as an important intervention in the strained land relations in Kenya. Subsequently he traces the evolving land tenure systems over the years making a case for the need to decentralize land registration systems that have tended to be heavily centralized in the national capital, Nairobi. Evarist Liwa on the other hand writing on the 120th Anniversary Year of surveys and mapping in Tanzania, reflects on the comparative advantages that private sector surveyor has in executing cadastral survey and urges public sector surveyor to concentrate on the approval of surveys in accordance with the laid down laws and procedures. The author believes by separating the roles, there would be lessened budget constraints and enhanced attention to the important role that surveys and maps play in land administration.

The historical recount of the practical challenges that the Surveying/Geomatics profession has undergone over the last 100 years in Eastern

Africa is mediated in the next article by two Scholars at the Makerere University, Gidudu and Musinguzi. The authors looked at the changes that land surveying education has undergone over the last 15 years in Uganda with special focus on developing and maintaining industry-induced curriculum. Eugene Silayo draws broad guidelines on way forward in formulating and implementing national land policies taking cognizance of the obtaining conditions as explained by the first three papers. In his paper Silayo, considers land scarcity as a growing problem that poses serious challenges to mankind development requiring multiplicity of skills to tackle. He identifies critical land sector issues that require attention and appeals for innovation and networking as the key strategies that he considers appropriate in national policies of eight countries in Eastern and Southern Africa that he had reviewed.

Land acquisition is a sensitive matter in any land administration system. Nimrodi Mushi has explored ways of managing the planning process of peri-urban areas with minimal land acquisition in his paper titled 'Participatory Methodology for Planning of Peri Urban land Use in situ. He underscores the need for systematic data management and involvement of the parties to mitigate negative impacts to the host communities and maintain quality of the environments that they have created over time. From Rwanda, Cletus Ndjovu and Richard Manirakiza look at land acquisition from the perspectives of post-war conflicts. Based on research findings at Gasenyi in Rwanda, the authors theorize that the lost trust that led to open conflicts will be invigorated where governments act in haste in post-war reconstruction efforts. The need for exercising care, community consultations, educating and complying with set laws is crucial to restore lost trust and in avoiding igniting secondary conflicts. Victor Akujuru addresses major areas of complaints against assessed compensation with suggestions from a project that was carried out in the Niger Delta in Nigeria.

In the last paper, a discourse analysis of perception of the land administration as a new area of study in the Eastern African Region is made. Felician Komu traces the evolution of valuation education in the region in an attempt to

establish how it has shaped understanding on land administration. While observing reluctance amongst the old established valuation schools within the region to embrace the growing needs for a hybrid discipline of land administration, he found new schools including in those countries where valuation has had firm ground to have pioneered establishing of undergraduate programmes in land administration.

Towards the end of this edition our readers are informed of what has been happening within the region. The Eastern Africa Land Administration Network (EALAN) runs annual workshop and courses. Eugen Silayo has kindly availed us with proceedings of the 2013 Courses while Prof Kironde reviewed the latest book on land laws that was published in Tanzania.

The Structure of the Cadastral System in Kenya
Gordon Wayumba¹

Abstract

The cadastral system² in Kenya was established in 1903 to cater for land alienation for the white settlers. Since then, a hundred years later, the structure of the system has remained more or less the same despite major changes in surveying technology. The government of Kenya has realized that the current structure is not conducive to economic demands of the 21st century and is interested in re-organizing the structure in line with the current constitutional dispensation and new paradigms in land management. So far, there has been no comprehensive study to evaluate the structure of the cadastral system in Kenya, and this paper presents the results of a study that was carried out in Kenya (as part of PhD research) to evaluate the structure as a means of providing information for re-engineering the cadastral system.

Keywords: Cadastral system, land tenure, reforms and land adjudication

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² Cadastral System here refers to the administrative and technical infrastructure responsible for cadastral surveying and mapping, adjudication of land rights, land allocation, land development planning, valuation and registration of the rights to land. This system is mainly housed in the Ministry of Lands in Nairobi but has branches in the Provinces, Districts and Local Authorities.

1.1 Historical Background

The origins of the cadastral survey system in Kenya date back to 1895 when Kenya was declared a British East Africa Protectorate and there was, therefore an urgent need for some form of legislation to support land alienation. The East Africa Land Regulations (of 1897) were published for this purpose as part of the East Africa Order in Council. Sections 3 and 8(a) of the Regulations expressed the need for a survey department [SoK, 1954].

In 1903 a land survey section was subsequently established in the Public Works Department (PWD¹) to provide a technical back-up for the alienation of land for the European settlers. The chief Engineer of the Uganda Railways, Mr. R. Barton-Wright [Caukwell, 1977: 63], was appointed as the chief Surveyor and Chief Land officer at the same time. He was supported by two members of staff, one Asian clerk and Mr.E.L.Waring as Assistant Chief Surveyor. The chief Engineer Railways therefore combined the three responsibilities of Chief Surveyor, Chief Land Officer and Chief Engineer Railways. At this stage therefore, both the departments of survey and lands were in the same organization.

In 1906 the surveying section was separated from lands and became an autonomous department (the Survey Department) under the Director of Surveys [SoK², 1954; Caukwell, 1977]. The new department had two branches; the Trigonometrical and the Cadastral branches; the latter being headed by a Deputy Director of Survey and was responsible for survey of all the new alienations.

1.2 Establishment of the Geodetic Network

Initially, cadastral surveys were based on local origin and such surveys were scattered all over the newly alienated areas without any encompassing datum. The land parcels which were close to the Uganda Railway were tied to the centre-line of the rails as a base and referenced by compass measurements to the telegraphic posts. Properties that were away from the railway line remained isolated and entirely depended on the goodwill of owner for maintenance of beacons. In 1903, the Chief Surveyor observed that this situation was not tenable as such isolated surveys would soon result in boundary conflicts.

The Chief Surveyor therefore recommended for the establishment of a proper triangulation network to control such surveys.

Due to the high demand for land for settlement and the need to control the isolated cadastral surveys, a triangulation scheme (the Kenya Major System) was established in Kenya for the first time in 1906. The Kenya Major System consisted of several chains observed in separate series and connected to the Angle-German Boundary Chain at four points. The network was scaled by three measured bases at Kisumu on Lake Victoria, Athi River south of Nairobi and at River Sabaki near Malindi town at the Coast. The Kenya Major System was never closed and adjusted as a whole. Consequently, a surveyor working across the triangulation chains would encounter a substantial displacement. To carry out subdivision or re-establishment surveys, it became necessary to know which triangulation chain had controlled the original cadastral survey.

In an effort to solve the problems of the Kenya Major System, the government initiated a new triangulation network in 1950. The new scheme was observed by the Directorate of Overseas Surveys (DOS) from Britain and popularly became known as the DOS Triangulation Network. The new network strengthened the Kenya Major by re-observing some of its controls. The triangulation was originally computed on the CassiniSoldner projection but was later recomputed in the UTM projection and tied to the 30th geodetic Arc through Uganda. The new network also included the Mt. KenyaTana River Tellurometer Transverse which tested the performance of the Tellurometer³ for the first time.

Further strengthening of the geodetic network in Kenya occurred in the 1970s when Royal Engineers Surveyors from Britain connected the old triangulation schemes to the Clifford⁴ Triangulation along the Kenya-Ethiopia border. However, up to now, there has not been a comprehensive adjustment of the geodetic network in Kenya and the cadastral system continues to depend on a disjointed coordinate systems. The government is currently establishing 25 zero order and 75 first order Continuous Operating Reference Stations (CORS) to support the development of a

³ Tellurometer was discovered by George Wadley in South Africa in 1957 and this was the first international test outside South Africa. It popularly known in Kenya as the Tana River Tellurometer Traverse.

⁴ Clifford Triangulation was observed by Major Clifford to demarcate the Kenya-Ethiopia border in 1958.

modern geodetic network in Kenya, enhance cadastral mapping in the country, and the development of computer-based cadastral data processing.

1.3 Trigonometry and Topographical Surveys

In the second phase of the operations of the cadastral system, Trigonometrical section was established in 1904 to provide a geodetic base for all subsequent surveys. In 1932, the Trigonometrical section became useful when gold was discovered at Kakamega in Western Kenya. There was an immediate need for survey to demarcate the mining leases and concessions, and triangulation to provide a frame-work for a topographical map. The topographical maps assisted in geological surveys of the area and mapping mining claims.

1.3.1 The Cadastral System and Topographical Mapping

Since 1904 when the first triangulation measurements were conducted and topographical section expended into a major mapping section. The present basic mapping scales in Kenya are, 1:250,000; 1:100,000; 1:50,000; 1:10,000; 1:5000 and 1:2,500. The 1:250,000, or the quarter million series as it is popularly known, mainly provide the base data for preparation of constituency and provincial administrative boundaries. The 1:50,000 series is the main planning map in Kenya and it presently covers 60% of the total area of the country. The 1:10,000; 1:5,000 and 1:2,500 series provide the base maps for topo-cadastral mapping in most urban centers in Kenya. Nairobi is covered by the 1:2,500 and 1:5,000 maps while the rest of other urban towns are covered by the 1:10,000 series

Apart from the 1:50,000 mapping programme, the other maps that are prepared for various development requirements include, the 1:1 million scale map for the whole of Kenya, which was produced for the first time in 1951 as a political boundary map for the whole country.

These maps have supported the cadastral system in Kenya in various ways. For example, the 1: 50,000 topographical sheets are the back-bone of adjudication and consolidation surveys in the group ranch areas while the 1:2,500 and 1:10,000 topographic maps are the base for topo-cadastral maps in major urban centers in Kenya. The

1:1,000,000 series are the base for the presentation of international and provincial boundaries, as well as Forest Reserve Boundaries, National Parks and Reserves.

1.4 The Current Status of the Cadastral System

Today, a hundred years later, the cadastral system in Kenya has grown into a major organization with branches all over the country. The headquarters of the system is based at the Ministry of Lands in Nairobi which is responsible for all cadastral operations in the country. At the top of the Ministry is the Minister for Lands who is responsible for the political issues affecting the system. The Permanent Secretary is responsible for day to day operations of the Ministry through the heads of departments of: Survey, Lands, Physical Planning, Land Adjudication, and Settlement. Recently, the department of Land Reform Unit, Administration and Planning was created. The various departments in the Ministry depend on each other for the supply of information needed for the day-to-day administration of land. For example, the Commissioner of Lands initiates the process of land alienation and allocation, while the Director of Physical Planning prepares the Part Development Plans (PDPs) based on the spatial information provided by the Survey Department [Figure 1.1].

After the promulgation of the Kenya Constitution 2010, the post of the Minister has been abolished and replaced with that of a Cabinet Secretary who is currently responsible for administrative, technical and political issues of the Ministry. The new officer is not be a Member of Parliament but is an ex-officio member. The positions of the heads of the various heads of departments have been re-organized to conform with the new Constitutional dispensation and the new devolved system of government.

In terms of land administration, three new Acts of Parliament have been enacted to control Land affairs in Kenya. These are the Land Act No 6 of 2012, the Land Registration Act No. 3 of 2012 and the National Land Commission Act No 5 of 2012. Under this new arrangement, the National Land Commission has taken over the responsibilities of the Commissioner of Lands and is currently responsible for the administration and management of all public land in Kenya. The new Land Registration Act is expected to revise, consolidate

and rationalize the land registration of titles to land in Kenya, while the Land Act will revise, consolidate and rationalize land laws to provide for the sustainable administration and management of land and land-based resources in Kenya. Two additional Bills; the Community Land Bill and the Eviction and Resettlement Procedures Bill are at the drafting stage and will soon be forwarded to Parliament for debate.

1.5 Functions of the Departments

1.5.1 The Department of Survey (Survey of Kenya)

In Kenya, the Department of Survey is responsible for the following tasks: establishment and maintenance of geodetic control network and provision of coordinate information to professional surveyors and other users; preparation and maintenance of base-maps (at various scales) for planning and national development; provision and maintenance of survey plans for property boundaries in support of land registration; execution of new grant surveys and compilation of deed plans and Registry Index Maps; liaison with the department of land adjudication and settlement in preparation of plans for land adjudication and settlement programmes; maintenance and storage of all survey records; approval of all title surveys records and numbers of all land parcels; survey and inspection of national and international boundaries.

In addition, the Department of Surveys performs the following duties: production of plans for gazettelement of administrative boundaries, forests and National Parks; production of settlement schemes, group ranches, company and cooperative farms; production, maintenance and provision of digital geographical data; implementation of hydrographic surveys; development and maintenance of the National Spatial Data Infrastructure. In all its operations, the department is guided by the Survey Act Cap 299 of the Laws of Kenya. **1.5.2 Department of Physical Planning**

The main role of the department of physical planning is the production of physical development plans and is the Land Use Planning Authority in Kenya mandated to oversee all planning activities in the country. The operations of the department are guided by the Physical Planning Act, Cap 286 of 1996. The detailed operations of the department can be summarized as

follows: Development of a National LandUse Policy; development of a National LandUse development plan; preparation of short-term and long-term development plans; development of the city plans for major towns in Kenya; assist in the implementation of the National Land-Use Information System; ensure full implementation of the Physical Planning Act, participation in research and development activities to generate information for planning needs; building of partnerships with other development agencies and partners to promote well planned human settlement and space.

1.5.3 Department of Lands

The department of lands is responsible for the following tasks: administration of government and trust lands; registration of titles and various land transactions; valuation of land for various purposes; resolution of land and boundary disputes; establishment and management of Land Control Boards and Land Dispute Tribunals; generation of revenue in the form of Appropriation in Aid⁵; management and custody of various land records. To implement the above mandate the re-current activities include the items summarised below.

- The alienation of both government and trust lands under the provisions of the Government Land Act (Cap 280 of 1915) and the Trust Lands Act (Cap 288 of 1939) respectively, including issuance of letters of allotment as a first step towards the ownership of land.
- Participation in the approval of development plans and part development plans for the urban areas.
- Preparation, registration and issuance of land title deeds for all categories of land under the Registration of Documents Act of 1901, Land Titles Act of 1908 and 1910, Government Land Act of 1915, Registration of Titles Act of 1919 and the Registered Land Act.
- Stamping and registration of documents relating to different categories of land in Kenya.
- Consideration and approval of building plans to ensure leaseholds are developed according to approved plans

⁵ Appropriation in Aid are funds collected by various Ministries on behalf of the Treasury for services rendered by the Ministries to members of the public, e.g. sale of maps, registration of titles etc.

- Consideration and approval of applications for extension and change of user for all categories of land.
- Consideration and approvals for extension of leases.
- Establishment and management of the Land Control Boards and Land Dispute Tribunals.
- Setting apart of Trust Lands for public purpose development.
- Valuation of both government and trust lands for alienation purposes, lease extensions, change of user, stamp duty, compulsory acquisitions, and public trustees, rental purposes, rating rolls and, subdivisions and amalgamations.
- Processing and documentation of land subdivision scheme plans.
- Updating of land records.

1.5.4 Department of Land Adjudication and Settlement

The department consists of two divisions: Land Adjudication department which deals with land adjudication in the former trust land areas, land consolidation and group ranches; the department of Settlement which deals with settlement of the landless citizens. The Acts of Parliament which govern the mandate of the department are; the Land Consolidation Act (Cap 283 of 1968), Land Adjudication Act (Cap 284 of 1968), Group Representatives Act (Cap 287 of 1968) and the Agriculture Act (Cap 318 of 1955).

Land Adjudication Division is mandated to ascertain rights and interests on land in the trust land areas, and transform ownership from customary tenure to individual tenure through demarcation, survey and registration. Land consolidation on the other hand involves the gathering small sub-economic units of land into economically viable units. Available literature [Myles et al, 2009] indicate that currently, 8.55 million hectares of land (comprising 2.03 million parcels) have been registered after adjudication and consolidation in various parts of Kenya; 338 ranches (comprising 3 million hectares of trust land) have been registered; while the government has resettled 305,890 families in 469 settlement schemes and subdivided 2,700 cooperative farms, covering an area of 2.2 million hectares.

1.5.5 Land Reform Transformation Unit (LRTU)

The LRTU has been established to prepare the ground for the intended land sector reforms in connection with the new National Land Policy. The LRTU will oversee the transformation process and the establishment of organs that will drive the land reform from within the Ministry of Lands [Myles et al., 2009]. Basically, the mandate of the LRTU is to plan, manage, guide and facilitate the transformation.

The roles of the different components of the LRTU structure can be summarized as follows: the Minister for Lands is accountable to Parliament on land policy matters and maintains an oversight role over the LRTU and other functions that are set up to drive the land reform; and the Permanent Secretary has appointed a Steering Committee of persons recognized for their knowledge of public sector reform, land policy and land administration and land management. The Steering Committee is expected to provide leadership to the transformation process; and a Coordinator of the LRTU has been appointed and is assisted by a number of Technical Working Groups with participation from the wider society.

1.5.6 The Administration and Planning Department

The Information and Communication Technology (ICT) Unit is the most important component of this unit and is mainly responsible for, IT-Development, maintenance and computer operations. The unit is headed by an IT manager and consists of 24 ICT experts. The unit also drives the e-government initiative founded by the Treasury. A vision within this context is having a joint state of the art Computer Centre within the Government which should facilitate several aspects of computerization of the land sector.

The ICT unit has achieved the following milestones since it was launched in 2007 as part of the Rapid Results Initiative (the RRI); reconstruction of the GLA volumes/records, Central Land Registry, and the Lands Registry Division, creation of a land/property value database in the Valuation Department, creation of a Document Management System for approved development plans in the

department of Physical Planning, creation of a Document Management System for survey plans in the department of Survey of Kenya; and creation of a file tracking system for settlement plot files in the department of Adjudication and Settlement.

The unit has also achieved the following functions; computerization of the land rent collection and the information captured include; land reference number, file number, parcel type, locality, district, street, and lessee's details; development of a Settlement Fund Trustee (SFT) billing system in Microsoft Access; development of a standardized methodology for carrying out inventories of informal settlements; and (iv) support for the development of the Kenya National Spatial Data Infrastructure (KNSDI).

1.6 The Cadastral Boundary Systems in Kenya

Kenya operates three types of boundary systems: fixed boundary, general boundary and the fixed general boundary. These boundary definitions are either based on the English general boundary system as practised in Britain under the Land Transfer Act of 1875 [Larsson, 2000: 42] or the fixed boundary system based on the Torrens⁶ system from Australia [Larsson, 2000; Steudler, 2004]. In Kenya a slight variation of the two systems, the fixed-general boundary, has been adopted to achieve fixation of the general boundaries in areas where the land markets have appreciated.

1.6.1 The Fixed Boundary System

The fixed boundary system is one where the boundary is an invisible straight line between two terminal points, which are mathematically determined and demarcated with a monument (artificial or natural). Monumentation for fixed boundary surveys consist of coordinated beacons at the turning points of rectilinear boundaries. Natural features such as rivers, roads, and ocean line, may also be adopted as curvilinear boundaries. All fixed cadastral surveys (from all over the country and including those from Nairobi), are examined and authenticated by the office of the Director of Surveys in Nairobi. Under the fixed boundary system, all the parcels have their plans indicating

area, bearings and distances between the boundary beacons.

Where surveys are carried out under the Registration of Titles Act (RTA)⁷ for the establishment of fixed boundaries, the surveyor prepares deed plans with respect to each plot, which, after signing and sealing by the Director of Surveys, are forwarded to the Commissioner of Lands to support registration [Mwenda, 2001]. Areas which required fixed boundary surveys were those of; new grant allocations, urban leases, Trust Lands set apart for public use, Forest Reserves, National Parks and National Game Reserves, and company and cooperative farms where shareholders opted for a fixed survey.

Fixed boundaries have the advantage of easier relocation and re-establishment, especially where physical boundary marks are missing. These boundaries are also associated with fewer boundary disputes, especially in areas without mature and stable settlements or where visible and unambiguous demarcation on the ground is absent. Although no reliable figures are currently available, it has been estimated that the total number of properties under the fixed boundary system are approximately 300,000. It has also been estimated that the total area so far surveyed under the fixed boundary system had reached 3.4 million hectares by 1960 [Mwenda, 2001].

1.6.2 The General Boundary System

The general boundary system is used in a number of Commonwealth countries, especially the United Kingdom [Manthorpe, 2004: 19]. The term general boundary means that the exact line of the boundary is left undetermined but assumed to be represented by a visible physical feature. Some of the features commonly used in Kenya to define general boundaries are: hedges, walls, rivers or streams, coastlines, or any physical feature that may be found suitable for the definition of the position of the boundary. The concept of general boundaries was introduced in Kenya in 1959 by the Native Lands Registration Ordinance and the registry index map was intended to be used as the registration map [GoK, 1966: 70].

⁶ Sir Robert Torrens, a graduate of Trinity College Dublin, introduced a land title registration system in Southern Australia in 1858. This system was introduced in Kenya in 1919 and was supported by the Registration of Titles Act.

⁷ The Registration of Titles Act, Cap 281 was enacted in Kenya in 1919 to register the newly surveyed White Settler Community land in Kenya. Most of these settlers required secured title rights which they could use as collateral in England to acquire loans for land development. The RTA is still used in many parts of Kenya up to the present day.

The use of general boundaries was necessitated by the need to speed up land registration in the Trust Lands⁸ which had been created out of the “Native Reserves.”⁹ Through the process of land consolidation and adjudication, land owners agreed on the positions of their respective boundaries. The landowners were then asked to mark the boundaries of the plots by planting hedges as guided by the demarcation officers. Once the hedges had grown sufficiently enough to be air visible, aerial photographs were taken at the scale of 1:12,500. The photographs were then enlarged to scales of 1:5000 or 1:2,500 to facilitate the generation of representative diagrams. These diagrams have generally been referred to as

Preliminary Index Diagrams (PIDs)¹⁰.

Fig 1.1 Diagrammatic Presentations of the Departments of the Cadastral System in Kenya (Myles et al., 2009)

The aerial photographs initially generated were meant to be subsequently ortho-rectified in order to eliminate geometric distortions and produce more reliable representations of the land parcels [Adams, 1969]. This was to be accomplished through the re-fly¹¹ of the areas under adjudication. After the completion of this process, the Preliminary Index Diagrams would become Registry Index Maps (RIMs). However, after coverage of only a few areas, the re-fly system was abandoned in 1967,

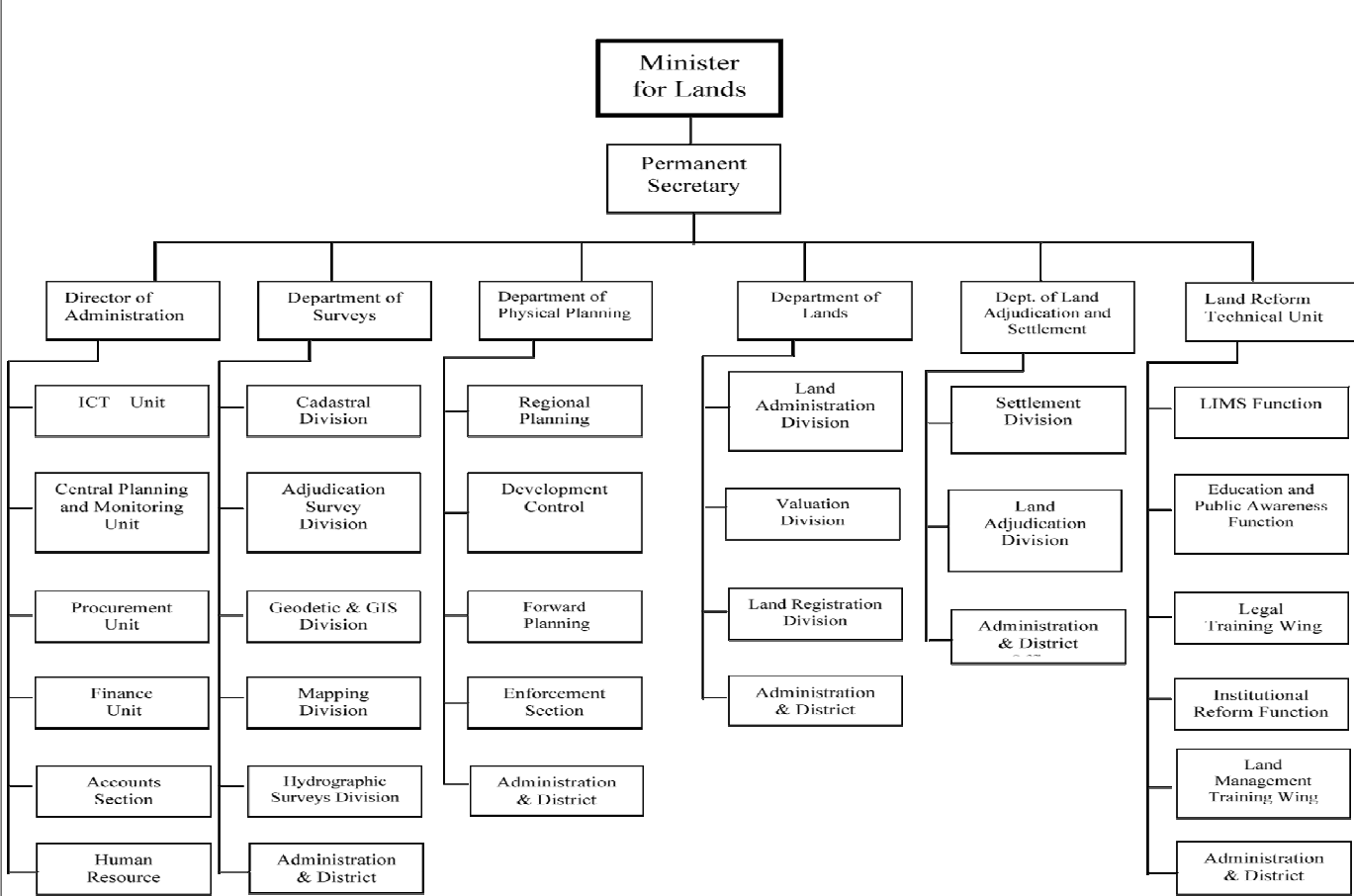


Fig 1.1 Diagrammatic Presentations of the Departments of the Cadastral System in Kenya (Myles et al., 2009)

largely due to shortage of funds. The Lawrance Mission also recommended for the abandonment of the re-fly programme (in the consolidation areas) in

⁸ Trust Lands were created out of the “Native Reserves” after the enactment of the Trust Lands Act in 1939.
⁹ The Native Reserves were created after World War I in 1918 to restrict Africans movement and provide a pool of Labour for the newly established European Farms.

¹⁰ Preliminary Index Diagrams (PIDs) are the tracings of land parcels images from enlarged un-rectified aerial photographs which served as interim cadastral maps in support of rapid land titling [Nyadimo, 2006].
¹¹ The reflies were the fully rectified aerial photos taken after the hedges had grown substantially to be air visible.

order for the survey staff to concentrate in the new, accelerated, adjudication programme [GoK, 1966: 61].

The general boundary surveys are lodged and processed at the District Survey Offices. Once the surveys have been checked and found acceptable, the Registry Index Maps (RIMs) are amended by the District Surveyor and the amended plans are forwarded to the District Land Registrar for preparation of titles. Several generic forms of the RIMs exist in Kenya, depending on the nature and accuracy of survey. These are the Interim Registry Index Maps, the Demarcation Maps, Registry Index Maps Provisional, Preliminary Index Diagrams and Registry Index Maps-Range Provisional [Mwenda, 2001].

Areas where the General Boundary surveys applied were: (i) areas where systematic land adjudication and land consolidation¹² surveys were taking place; (ii) group ranches where the shareholders opted for a general boundary survey; (iii) company and Cooperative Farms where the shareholders opted for a general boundary; and (iv) Settlement schemes for re-settling the indigenous people on former white settler farms. Available statistics [Myles et al., 2009], show that currently; the coverage of general boundary surveys is approximately 11 million hectares (comprising of 1.5million parcels and 338 group ranches).

The new Land Registration Act, No. 3 of 2012, has mandated that all plans submitted for registration must be georeferenced. The implication of this development therefore is that all general boundaries in Kenya will have to be fixed mathematically to the level of a fixed boundary. This will have the advantage of reducing boundary disputes arising from the general boundaries, particularly in areas where the physical boundaries are not well kept. It will also have the effect of improving the market value of the affected land parcels as the areas will be more certain and re-location will be well guaranteed.

1.6.3 The Fixed General Boundary

Sections 21 and 22 of the Registered Land Act (RLA) give the Chief Land Registrar the authority to cause a general boundary to be fixed by surveying to the level of a fixed survey. The areas

where fixed general boundaries apply are: (i) company and cooperative farms, where the shareholders opted for a fixed boundary survey; (ii) group ranches where the shareholders opted for a fixation survey; and (iii) areas where boundaries were previously surveyed under general boundaries but the clients later opted for a fixed survey to improve on the relocation and re-establishment of boundary beacons.

The procedures involved in the fixation of general boundaries generally consist of notifying the District Land Registrar of the intention to have the boundary fixed. The Land Registrar informs the abutting neighbours of the intention to have the boundary fixed and if any objection is raised, the matter has to be referred to the Land Control Board, otherwise the survey is executed and the Land Registrar certifies, on the survey plan, that the boundary has been fixed. Such plans are submitted to the Director of Surveys for checking and authentication in line with the requirements of the Survey Act. The fixation of general boundaries does not only assist in mathematical boundary relocation, but also raises the market value of the land as Banks find such boundaries more reliable than the general boundaries.

1.7 The Land Tenure Systems in Kenya

Kenya operates five main land tenure systems: the Public Tenure, Private Tenure, Customary Tenure, and two special types of tenure; the Informal Tenure and the Ten-Mile Coastal Strip. While the customary tenure dominates most of the rural lands in Kenya, the private and public tenure systems control land in the urban areas. The informal tenure is dominant in the urban areas as well as in several large scale farms in the country in the form of squatters. The Ten Mile Coastal Strip is found only in the Coast Province of the country and has the longest history of all the tenure systems in Kenya.

1.7.1 The Public Land Tenure System

According to the Sectional Paper No.3 of 2009 [GoK, 2009: 16] public land comprises all that land that is not private land or community land, or any other land declared to be public land by an Act of Parliament. Currently, any surveyed public land is registrable under the Permanent Secretary for the Ministry for Finance. All public land were originally, administered under the

¹² Land Consolidation were implemented in different areas from system adjudication.

Crown Lands Ordinance of 1902 and the Government Lands Act Cap 280 of 1915. These lands were vested in the President of the Republic of Kenya who over the years had powers to allocate or make grants of any estate, interest, or rights, in or over unalienated government land. However, with the promulgation of the Kenya Constitution 2012, these powers are now vested in the National Land Commission.

To secure tenure to public land, the Government has carried out the following actions; repealed the Government Land Act and established a Land Registration Act which has taken over all the registration aspects of the GLA, established a Land Act under the National Land Commission which will identify and keep an inventory of all public land. Additionally, the National Land Commission will establish the office of the Keeper/ Recorder of Public Lands who will prepare and maintain a register of all public lands and the related statistics. The National Land Commission will also establish a Land Titles Tribunal to determine the bona fide owners of land that was previously public or trust land.

So far, the categories of public land in Kenya include; forest reserves, water bodies, national parks, townships and other urban centres, land reserved for government institutions and any other special category of land that may be acquired by government for public use. [Njuguna and Baya, 2001] indicate that 10% of land in Kenya is currently categorized as public tenure¹³.

1.7.2 The Private Land Tenure System

The private tenure systems in Kenya consist mainly of freeholds and leaseholds. Most of the land parcels held under freehold have been created through land adjudication and consolidation or allocation of government land for private development. At present, freeholds are found in areas where tenure have been converted from trust land to individual tenure through the process of land adjudication and consolidation. Pockets of freeholds are also found in the urban centres in areas which were originally agricultural land but were eventually consumed by the towns through the urban expansion. In Nairobi for example, pockets of freehold land are found in areas which

were originally owned by the Imperial British East African Company (the IBEACo)¹⁴ and the Karen¹⁵ Blixen land.

Leaseholds are interests in land granted for a specific period of time. In Kenya, leases may be granted for 30, 33, 50, 99, 999 and 9999 years. The 99 years and 33 years leases may be granted by the Commissioner of Lands for urban plots. The 30 and 50 year leases are granted by the Local Authorities. The 999 year leases were granted to the white settlers in 1915 under the Government Lands Act. At the moment, 20% of land in Kenya is estimated to be under private tenure system as estimated by Njuguna and Baya [2001]. The 9999 years leases are found in parts of the Coast Province, the former white highlands and Nairobi area. These are special leases that were granted alongside the 999 years leases. The new Constitution fixes the maximum time for leases in Kenya at 99 years. Consequently, all leases with a time-frame above 99 years will be reviewed accordingly and fixed at 99 years term.

1.7.3 The Customary Land Tenure System

Customary land tenure is the system of land holding and land use which derives from the operations of the traditions and customs of the people affected. Customary law derives from the accepted practices of the people and the principles underlying such practices [Ezigbalike and Benwell, 2007]. The most important feature of customary land tenure is the predominance of communal ownership of whatever rights exist in any land.

In Kenya, this tenure system refers to unsurveyed land owned by different Kenyan communities under customary laws. Being a diverse country in terms of its ethnic composition, Kenya has multiple customary tenure systems, which vary mainly due to different agricultural practices, climatic conditions and cultural practices. The tenure system is currently governed by the Trust Land Act Cap 288 of 1939.

¹⁴ The IBEACo was a Bombay based Imperial East Africa Company (in India) that was granted a charter by Queen Victoria in 1885 to operate, open, and administer the East African Territory from the coast inland on behalf of the Queen; and Sir William Mackinnon was given the responsibility of managing the company. The IBEACo failed due to poor infrastructure and lack of structured public administration in the region and handed over its operations to the East African Protectorate in 1895.

¹⁵ Karen Blixen was a Danish Lady (Karen Denisen, also known as Tianne) who married a Swedish Royalty, Baron Gustav von Blixen-Finneke. The couple settled in Nairobi and acquired 6000 acres of land at the foot of Ngong hills, 12 miles South of Nairobi, in what is currently referred to as Karen Estate.

¹³ These figures are valid at the end of 2001

At present, land under customary tenure occupies approximately 70% of the total area of the country and most of these lands are gradually being converted to private tenure through the process of land adjudication. The programme which was initially designed to take just ten years from 1954, when it was initiated, has adopted a face of permanency due to the complicated cultures of the local communities, administrative bureaucracy, and several unresolved land disputes. Customary tenure systems are generally mixed with other tenure systems in the Group Ranches¹⁶, the Trust Lands and the TenMile Coastal Strip. With the promulgation of the new Constitution in Kenya, all the customary land will be administered under the Community Land Commission but the inhabitants will still enjoy all the customary rights they have had in their areas. The main objective of the Community Land Commission is to determine and register such rights. Previously, such rights have not been recognized in the laws of Kenya neither have they been registered.

1.7.4 The Informal Land Tenure System

Informal land tenure refers to a situation where the actual occupation and use of land is without much legal basis. Under this arrangement, groups of people occupy public or private land without the permission of the owner. In Kenya, such situations normally occur in the urban areas where rapid urbanization outstrips the capacity of the urban management to deliver sufficient and affordable housing for the population.

The production of low-cost housing affordable to lowincome migrants has not kept pace with the spread of the informal settlements due to (i) high building standards required by the local authorities, (ii) scarcity of land appropriately zoned for such development, and (iii) development of housing is biased towards middle and upper income groups. Available statistics [NACHU¹⁷, 1990] indicate that presently, 60% of Nairobi residents live in the informal settlements. For a long time, the Law in Kenya did not recognize the existence of this tenure. However, since the promulgation of the new constitution, informal tenure has been recognized in law and the government has put in place mechanisms for provision of secure tenure

¹⁶ Group Ranches are as special form of communal tenure established under the Land [Group Representatives] Act of 1968 and granted to a group with common customary rights over a defined piece of land.

¹⁷ NACHU is the National Cooperative Housing Union Ltd. An NGO in the Ministry of Housing concerned with the upgrading of the informal settlements in Kenya.

for the informal settlements through the Kenya Informal Settlements Improvement Programme (KISIP) [MoH, 2010]

1.7.5 The Ten-Mile Coastal Strip

The Ten-Mile Coastal Strip in Kenya is a piece of land approximately ten nautical miles wide from the high water mark of the Indian Ocean. It covers an area of 5,480.44 square km and is approximately 536 km long, stretching from the mouth of River Uмба at the KenyaTanzania border to Kipini at the mouth of River Tana, and the Lamu Archipelago.

The land tenure system in the Ten-Mile Coastal Strip has been dictated by the changing political circumstances in the area. Under the East African Regulations of 1897, people living in the Ten-Mile Coastal Strip were issued with certificates of ownership for a term of 21 years in the form of short-term leases. In 1902, land in the TenMile Coastal strip was considered as government land, and therefore available for alienation under the Crown Lands Ordinance. However, without some specific legal process, it was difficult for the government to separate land available for alienation and private land claimed by the Arabs [Okoth-Ogendo, 1976].

A provision for land claims within the Ten-Mile Coastal strip was therefore made possible in 1908 through the Land Titles Ordinance; which was specifically enacted to adjudicate the land rights in the area in order to separate private land from crown land. A land court, consisting of a recorder of titles, a surveyor and administrative officers was set up to listen to and determine the claims. The duties of the Recorder of Titles included boundary surveys and the preparation of maps to be attached to the certificate of ownership. The Surveyor and the administrative officers only received the claims. The process of adjudication was therefore solely left to the Recorder of Titles [Okoth-Ogendo, 1976].

During the adjudication process, most of the land parcels claimed by the landlords as private property were actually occupied by the indigenous people. The government is therefore currently faced with a complicated situation where majority of the indigenous people in the TenMile Coastal strip do not have secure titles to the land while the absentee

landlords, who hold the titles, are not residing on the parcels but are charging fees to the occupants on what the indigenous communities consider as their ancestral land.

1.8 Land Registration Systems in Kenya

Land registration system in Kenya is conducted in two main systems: the deeds registration and title registration systems. The deeds registration system was the earliest form of registration introduced by the Colonial government towards the end of the 19th Century. The system is governed by Part XII of the Crown Lands Ordinance of 1902 (repealed in 1910 by the Land Titles Act Ordinance and in 1915 by the Government Lands Act), the Registration of Documents Act (RDA), Cap 285 of 1901, the Land Titles Act, Cap 282 of 1908, and the Government Lands Act, Cap 280 of 1915. Title registration is governed by the Registration of Titles Act (RTA), Cap 281 of 1919, and the Registered Lands Act (RLA) Cap 300 of 1963. More recently, in 1987, the Sectional Properties Act No.21 was enacted to provide ways and means of registering sectional 3D properties including flats.

1.8.1 Registration under the Registration of Documents Act (RDA)

The RDA was the first registration Act in Kenya. It was a simple deeds registration system introduced in 1901 to register land transactions of the Crown Lands Ordinance and earlier land allocations¹⁸ at the Coast. The Act required that registration of transactions be effected within six months of execution. A copy of the registered documents was retained in the registry and an index of names registered was kept. The registration processes under the Act were not supported by any survey plans hence it was difficult to locate the registered property on the ground. Under the RDA, the proprietor had to trace the root of the title to the satisfaction of any intending purchaser.

Initially, registries for the RDA transactions were opened up at Mombasa, Nairobi, Malindi, and Naivasha. The Malindi and Naivasha registries were closed in 1915 and their records were amalgamated with Mombasa and Nairobi registries

¹⁸ Available literature [Caukwell, 1977] indicates that prior to the declaration of the Protectorate status over Kenya; several land transactions had taken place between the IBEACo and the Sultan of Zanzibar.

respectively. Two records were established under the RDA system; the “A” register which was compulsory and the “B” register which was voluntary. The compulsory register recorded all the transactions in land and immovable property while the voluntary register was used as a public record of any deeds or other instruments which might be accidentally lost. The Principal Register of Documents administers this Act.

The RDA is basically an optional registration system where titles are registered as deeds without any supporting documents such as, survey plans, deed plans. Apart from land documents, the system also registers such documents as marriage certificates, deed poles for change of name, architectural plans, aerial photographs and building plans.

The main weakness of the RDA is that titles are not supported by georeferenced plans re-establishment of land parcels can be a challenge. The government is currently in the process of converting all registration systems into one comprehensive system to be determined after the promulgation of the new registration bill. This will require a complete overhaul of all the registration acts in Kenya. To this extent, the UN-ECE [1996] has recommended that computerization of the deeds registration system in Kenya would offer an efficient and reliable system comparable to the title registration system.

1.8.2 Registration under the Land Titles Act (LTA)

Under the 1887 concessions, the 1894 and 1897 land regulations, and the 1895 land treaties, it was generally agreed that all existing land rights of the Sultan of Zanzibar within the ten mile coastal strip, be recognised and respected by the new colonial administration [Caukwell, 1977]. The Crown Lands Ordinance did not include these lands as Crown Land. The Land Titles Ordinance was therefore enacted to facilitate adjudication of land claims within the ten nautical mile coastal strip. Through this process of adjudication, it was possible to identify land which was legally occupied and the unoccupied land that could be alienated as Crown land.

The Act provided for the establishment of a land Registration Court presided by a Recorder of Titles. A surveyor was attached to the court to

define the boundaries of the adjudicated land claims. Upon adjudication by the Recorders Court, the successful claimants were issued with certificates of title. These certificates, according to the nature of the title adjudicated, were of three kinds:

- (i) certificate of ownership, giving a freehold title;
- (ii) a certificate of mortgage; and
- (iii) a certificate of interest, covering leaseholds.

The registration process was implemented as follows. Once the land claims were fully carried out, surveying and demarcation were carried out to create the survey plan. All other interests on the land were also noted. These include such items as bore holes, palm trees, houses, or any other fixed interest that could be noted on the parcel other than the actual ownership. Once the process of surveying and demarcation were finalized, the documents were handed over to the Registrar of Titles (RoT) in Mombasa. Under this Act, land ownership are registered under the deeds of ownership while other interests are registered with deeds of interests [Mwanyungu, 2012].

1.8.3 Registration under the Government Land Act (GLA)

By 1915, it had become clear to the Colonial government that the Crown Lands Ordinance, with its six pages of simple provisions, was inadequate to maintain a firm control on land matters as the protectorate developed [Caukwell, 1977]. The Government Lands Act repealed the Crown Lands Ordinance of 1902 and authorised the Commissioner of Lands to issue 99 year lease for urban plots and 999 year leases for the agricultural land. Under the Act, registration of grants and transactions was compulsory and unregistered documents or deeds had no validity in Law.

The registries at Malindi and Naivasha, set up under RDA, were closed and the registers in these stations were transferred to Mombasa and Nairobi. The Act was basically a deeds registration system supported by authenticated survey plans and approved deed plans. Under the Act, three registers were opened: one in Mombasa and two in Nairobi. One of the registers in Nairobi was for land within Nairobi and its environs while the other register was for land in the European settlements in the White Highlands.

Titles registered under the GLA are called indentures and are represented in the registry as

folios (pages) of the register, with one folio being devoted to each parcel of land. These titles are supported by a Conveyance or Assignment, depending on whether the property is a freehold or leasehold. Conveyances are freehold titles while the Assignments are leaseholds under the GLA. Under this system of registration, the land owner keeps the original registration documents and only copies are kept at the Land Registry; which are then used to prepare an indemnity for the government against loss, damage or alterations. In Kenya, some GLA titles are supported by accurate authenticated survey plans and deed plans while some are merely documents without supporting maps.

Some of the major weaknesses of the GLA system are: (i) the conveyance documents are kept by the land owner and in case of loss, damage or alterations, further transactions of the title are affected; (ii) the documents kept at the registry are susceptible to fraud as they are represented as simple folios which can be removed or altered; (iii) on transfer, the original documents have to be attached and in case of loss such transactions cannot be effected; and (iv) once several transactions have been carried under this registration system, the documents become bulky and unmanageable.

1.8.4 Registration under the Registration of Titles Act (RTA)

With the promulgation of the GLA in 1915, the white Settlers started to insist on title registration rather than deeds registration [Okoth-Ogendo, 1991:44]. Thus the introduction of the RTA system in Kenya in 1919 was seen as an achievement of the need to change from deeds registration to registration of titles which had been going on since 1896. The RTA was therefore enacted principally to provide for a title registration system as opposed to the deeds registration under the RDA, LTA and the GLA.

The Act was modelled upon the Torrens system of Australia and partly on the English Common Law as spelt out in the Land Registry Act of 1862 [Larsson, 2000]. According to the Lawrance Mission report [GoK, 1966: 65], the Act was not well drafted and by 1927, three separate committees had recommended for its repeal and replacement but the proposal disappeared due to the desire to have a uniform registration system for the three East African countries.

The Act took over all the previously registered deeds under GLA, or those subject to the certificates of mortgages, or any other interests issued by the Recorder of Titles under LTA and the RDA. It also applied to all leaseholds that had been converted from the terms of 99 years since 1902 (or even those of 999 years) to freeholds, and to any titles converted on a voluntary basis from GLA or LTA to RTA Titles [Ojienda and Rachier, 2000]. According to Okoth-Ogendo [1991:44], with the enactment of the RTA, the disinheritance of the African communities in Kenya, within the framework of colonial Law, was complete.

Upon first alienation of land, a grant is issued by the Government. The original grant and the copy are endorsed with the index number of the title. When a transfer is registered, the transaction is endorsed on the title itself so that all the transactions under RTA do not create anew title. All other transactions such as charges, and mortgage, are also endorsed on the original grant. Under RTA, the Government provided guarantee of title and indemnity against fraud, error of omission and commission, and negligence for the first time. Two registries are maintained under the Act; one in Mombasa and one in Nairobi.

All entries in respect of transactions are registered in their order of presentation. There are no separate columns for property, proprietorship or encumbrance sections as found in the Registered Lands Act system. Copies of all registered documents in relation to a parcel of land are kept in deed files, a copy of which is available for each parcel of land. Registration of land under the Statute requires a deed plan authenticated by the Director of Surveys. When land is subdivided under this Act, new titles (certificates of title) are prepared for each parcel in the subdivision and once all the subdivisions have been registered, the original title is cancelled and kept in the registry. This Act is administered by the Principal Registrar of Titles based in Nairobi.

1.8.5 Registration under the Registered Land Act (RLA)

Prior to the enactment of RLA, the government realized that some form of legal framework had to be developed to support the land consolidation program already in progress in Nyeri¹⁹ Districts

since 1945²⁰ [Sorrenson, 1967: 135]. The Native Land Tenure rules of 1956 were passed under the Native Lands Trust Ordinance of 1939 to give the programme some legal backing [GoK, 1966:37]. In 1959, the Working Party on African Land Tenure Reforms recommended the enactment of the Native Lands Registration Ordinance, although its applications had already been adopted in 1957 [GoK, 1966].

In 1960, the Native Lands Registration Ordinance was changed to Land Registration (Special Areas) Ordinance. The registration component of this Act was repealed by the Registered Lands Act Cap 300 of 1963. Parts I and II were not altered and became the Land Adjudication Act of 1963 [Onalo, 1986: 48]. This adjudication act was used to conduct all the land consolidation programmes between 1965 and 1968 when the new Adjudication Act was passed.

The Registered Land Act (RLA) was enacted to provide a complete code of land registration system in Kenya. It was the objective of the Government that this statute would eventually replace all the other Acts dealing with land registration in Kenya. At the time of enactment, the act superseded the registration provisions of the Native Lands Registration Ordinance of 1959 and the Land Registration (Special Areas) Ordinance of 1960. The act applies in areas where land have been surveyed under the general boundaries (as in adjudicated areas), areas where land have been fixed under Section 22 of the act; or areas which are being converted from the RTA to RLA under the Sectional Properties Act No. 21 of 1987.

The RLA provides for the establishment of District Land Registry Offices which maintain a registry map, parcels file, a representation book, and a separate register for the powers of attorney. In Kenya, the system has been decentralized to most of the administrative districts in tandem with the requirements of the general boundary surveys and the policy of providing cheap and accessible registration to a majority of Kenyans. As opposed to RTA and GLA registration systems where deed plans are the basis of registration, under the RLA

¹⁹ Land consolidation was started in Nyeri District in Central Kenya in 1954 and progressed to other Central Kenya in Kiambu (1956) and Muranga (1961)

²⁰ Chief MuhoyaKagumba of North Tetu began land consolidation in his location in 1945 and Chief Elliud Mugo also started the process in Iria-Ini location in Nyeri at the same time

system, great reliance is placed on the Registry Index Maps (RIMs)²¹.

The RLA system of registration is far much cheaper than that of RTA because: (i) it is operated at the District level, (ii) the system uses RIMs which contain several parcels of land instead of sets of deed plans drawn for each plot under the RTA, and (iii) the registration documents are prepared by the District Registry staff rather than Lawyers.

1.8.6 Land Registration Act No.3 of 2012

This is an Act of Parliament to revise, consolidate and rationalize the registration of title to land, to give effect to the principles and objects devolved government in land registration, and connected purposes. This Act has repealed all the previous land registration Acts in Kenya except the Registration of Documents act. Section 7 (d) stipulates that parcel files containing the instruments which support subsisting entries in the land register and any filed plans and documents must be georeferenced.

1.9 Conclusion

The main conclusions derived from the structure of the cadastral system in Kenya are that; the system is over-centralized in Nairobi, it is complex and duplicative in many areas, and it is bureaucratic and slow. Additionally, majority of the cadastral data are kept and operated in manual format and this compromises fast service delivery to customers. There is therefore a need for decentralization of the system to the newly created Counties and implementation of a comprehensive computerization of the entire system.

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²¹ Registry Index Maps are the maps that are prepared once the adjudication sections have been published. The maps contain several parcels numbered sequentially by District. The land parcels are usually given parcel numbers and the titles issues are land certificates. The RIMs have superseded the deed plans in RLA registration system.

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Towards 120 Years of Surveys and Mapping in Tanzania (1893 – 2013)

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Abstract

The history of surveys and mapping in Tanzania has been influenced by two European cultures through its colonization; first by the German and then by the British. During the German Administration, surveys and mapping activities were carried out by the Department of Surveys and Agriculture from 1893 to 1914. When the British took over the mandate for the territory after World War I, they also used the “old” German maps until when they started the surveys to produce other topographic maps from 1946. In 1961, the Surveys and Mapping Division was created. The division was charged with the surveys and mapping activities in Tanzania. Today there are still topographic maps from the Surveys and Mapping Division, but there are also maps and 3D Terrain Modeling from GIS and Remote Sensing made by different other organizations. In 2013 Tanzania will record its 120th year since surveys and mapping officially started. A number development has been achieved since then. The purpose of this paper is, therefore, to narrate the evolution of surveys and mapping activities in Tanzania.

Key words: mapping, triangulation, atlas, benchmarks, remote sensing, geographical information systems.

1.1 Tanzania - Background Information

The 19th Century History of the area that is now the united Republic of Tanzania was fashioned by the extension of the caravan trade from Zanzibar into the far interior, to the eastern Congo and Buganda. The area, called Tanganyika was part of the German colony and was later incorporated into the German East Africa, which also included the present-day Rwanda and Burundi. After the end of the First World War, the treaty of Versailles, in 1919, granted Britain a League of Nations mandate to govern the former Deutch-Ostafrika (German East ²Africa) which then acquired a new name, Tanganyika. In December 1961, Tanganyika became independent and, in April 1964, Tanganyika and Zanzibar united to form the present United Republic of Tanzania. Today Tanganyika is commonly referred to as Tanzania Mainland, and therefore, the rest of the information in this paper is for Tanzania Mainland. For the purpose of this paper, Tanzania is taken to mean Mainland Tanzania. Thus, the history of surveys and mapping in Tanzania had been influenced by the two European cultures through its colonization; first by the German and then by the British.

2.1 Pre-Colonial Surveys and Mapping of Tanzania

The maps of Tanzania and the whole of East Africa, produced in the nineteenth century largely ignore the scientific results obtained by explorers but reflect various concerns of Europe.

These include the need for simple topographic information and for a solution to the mystery of the Nile source. Another major factor was an increasing concern with the political status of the region. Consequently exploration of East Africa during the time attracted enormous attention among both scholars and the more general European public. The European explores to Tanzania during the 1850's and before were the first to produce their travel records which were indispensable in providing data to make sketchy maps of the piece of land now known as Tanzania. Because several explorers wrote accounts of their journeys which evoked widespread interest among the contemporaries in Europe, their records were readily published and so remained accessible to others including those who were interested to publish maps of Tanzania. The explorers include, among others, Henry Morton Stanley, Richard Burton, David Livingstone and John Hanning Speke.

2.2 Surveys and Mapping During the German Administration (1884 – 1918)

Tanzania traces its early official surveying and mapping from the days of German colonial administration in the late nineteenth century when, in 1893, the then Department of surveying and Agriculture was set up under Dr. Franz Stuhlman who encouraged the collection of topographic information for mapping purposes (Mascarenhas 1971). Following the settlement of European farmers (then mainly Germans) in rural

mainland Tanzania in the 1880s (ILife 1971), the areas which were occupied by them, notably along the then (1898) newly completed railway, Kilimanjaro, Meru, Kilosa, and Morogoro were surveyed first and mapped at 1:300,000 scale for cadastral purposes. The Germans continued with topographic mapping at 1:300,000 scale and by 1914, 36 multi-coloured map sheets covering the whole of Tanganyika, including the present Rwanda and Burundi, had been published. Some of these map sheets covered an area of 1.5° latitude by 2° longitude, others covered 1×1 degree. Each sheet was named by a letter and a number (e.g. A1, B3, etc.) as shown in Figure 1. The information that was contained in them was mainly relief, location of various tribal settlements, the then principal exploration and communication routes and hydrological features. The names of the places shown in these maps were not the same as those found in the later maps published by the British. Tribal names were used to describe the location of some places. The surveys that led to the publication of these maps based on the isolated triangulation networks which, at that time, were primarily established for boundary surveys. The first triangulation network with a local astronomical origin (near Lushoto) was established between 1894 and 1911 (Rowe 1933) and covered the Usambara Mountains

as well as to demarcate the Anglo-German boundary between Kenya and Tanganyika. The second triangulation network was established in 1898, with another astronomic origin. This triangulation covered the Mbeya and Rukwa areas and was later used to demarcate the boundary between Tanganyika and Nyasaland. The third triangulation was observed between 1902 – 1906. For this, the geodetic longitude of Zanzibar which was used as the origin was transferred across the Zanzibar channel to connect to the Usambara Mountains triangulation. This and the whole triangulation network which covered the Tanganyika – Kenya boundary was recomputed and further triangulation extensions were made to cover the lake zone as far as Kagera. The primary intention of this later extension of the triangulation was to allow the demarcation of the boundary between Uganda and Tanganyika. The fourth network was established in 1907, with a local astronomical origin, in the south western corner of the country (Mbambabay). This triangulation network was used to demarcate the boundary between Tanganyika and Mozambique (Figure 2). The only triangulation network which was not used to demarcate the German East Africa boundary was that which was established between 1912 and 1914 in Morogoro area. It is believed that this triangulation network was purely for cadastral purposes since, at that time, Europeans were continually being settled in this area to start sisal plantations and a cadastral survey of these plantations needed as well controlled network. The network was, thus, used to provide controls for cadastral surveys.

However, the German surveyors did not finish demarcating all the boundaries of Tanganyika; the work was later completed by their British counterparts by adopting some of the original German field observations and extending these as required.

2.3 Atlas Mapping During the German Administration

The first “atlas” of Tanganyika was compiled by Dr. Dietrich Fulleborn and published in 1906 as volume nine of a twelve volume set recording the physical and natural history and geography of German East Africa. Although it was published as an “atlas” it may be incorrect to define this publication as an “atlas” in the true geographic sense since this “atlas” consisted mainly of a series of photographs that showed various landscapes

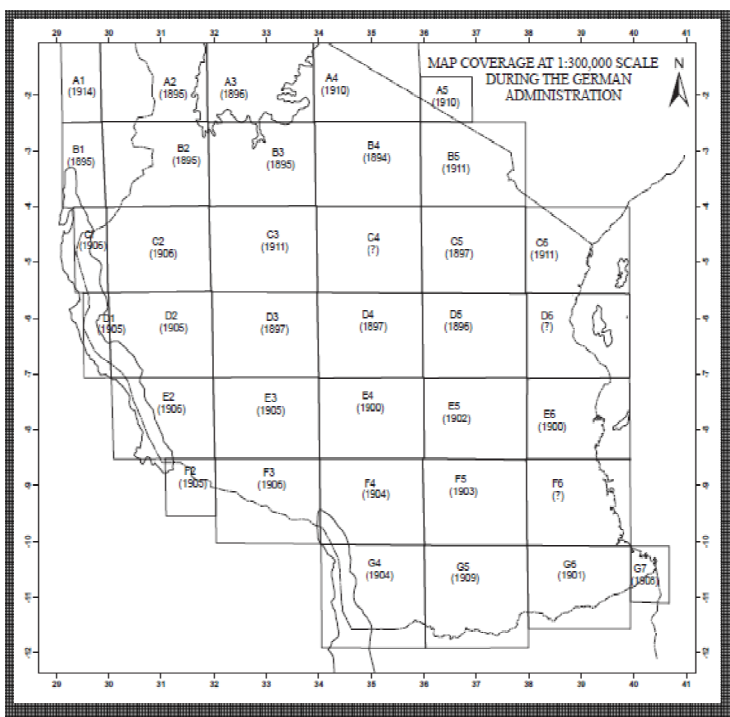


Figure 1: Map Index during the German administration

This was extended later during this period to the North to cover the Pare, Moshi and Arusha areas

and the indigenous people who occupied them. Also it would not be correct to define it as a “national atlas” as only two map sheets were included in the “atlas”. The main map was at the scale of 1:1,000,000 and covered the southern part of the German East Africa Territory which included the present Ruvuma, Lindi, Morogoro, Iringa and Mbeya regions and extended as far North as Dar Es Salaam.

The second map is at the scale of 1:510,000 and only covers a small area north of Lake Nyasa. However, this “atlas” richly deserves its place in the History of mapping in Tanzania as the first atlas to record the physical and human geography of the country. Later, the first map which depicted the distribution of population in Tanganyika was compiled using, as its base, the 1:300,000 and 1:2 Million scale maps which had been drawn during the German administration (Gillman 1936).

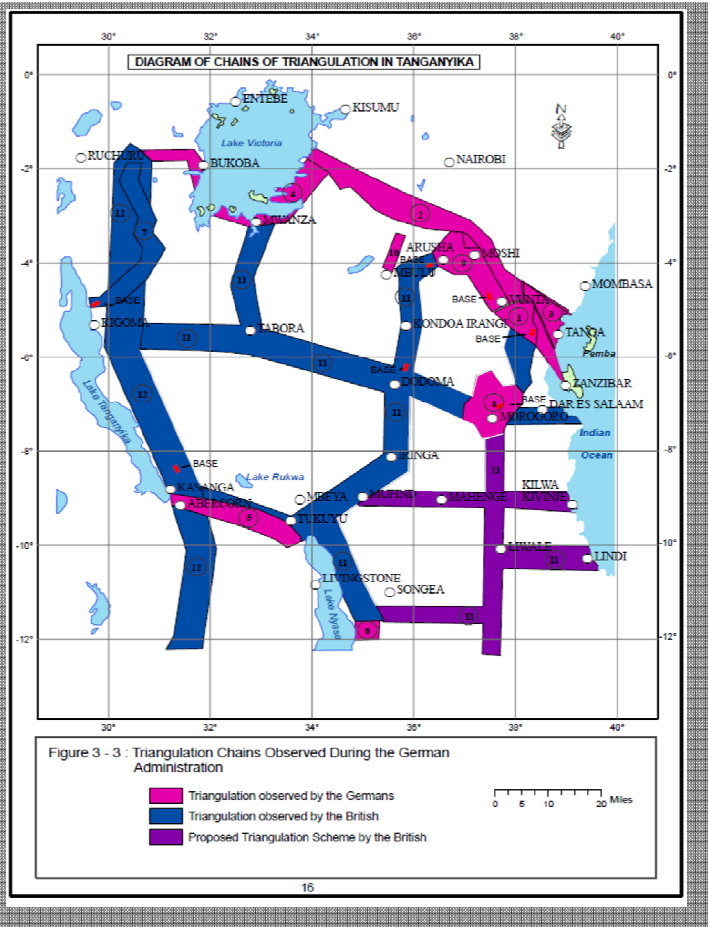


Figure 2: Tringulation schemes during the German and Bristish administration

2.4 Surveys and Mapping during the British

Administration (1918 – 1961)

The British administration (1919-1961) which took over from the German administration after the First World War formed the Surveying Department under the Ministry of Lands and Mines in 1920. Later it was moved to the Ministry of Lands, settlement and water Development. The Department resurveyed all the properties which originally belonged to German nationals. These surveys were so sporadic and unrelated to one another that it was considered necessary to unify and co-ordinate them on a common origin. Following the geodetic initiative to measure very long lines to help determine the shape and size of the Earth, a triangulation network along the Arc of the 30th Meridian (from North Cape in Norway to Cape of Good Hope in South Africa) started in South Africa in 1905. During the early part of the twentieth century (1905-1914), observations for this triangulation scheme had already been made northwards as far as Southern Rhodesia (now Zimbabwe), and a considerable amount of work had also been done in Uganda. There was, therefore, a break in this Arc represented by Tanganyika, Burundi and Rwanda (the German colonial territories). It was, therefore, logical for the British to continue with this network to cover that part of the Arc which crossed Tanganyika both to continue the geodetic/scientific work of which it formed a part and also so that the existing isolated triangulation networks and surveys could be connected together.

In 1931, Major M. Hotine, R.E. led a field survey party to Kigoma in the western part of the country to continue the triangulation work along the Arc (Hotine 1934). Observations were made from the south eastern corner of Lake Tanganyika, where a base was established at Kate, extending northward to Kasulu where another base was measured. This triangulation was connected to the existing network along the Arc in Northern Rhodesia (now Zambia) and, to the triangulation network observed by the Germans in 1898 (Figure 3).

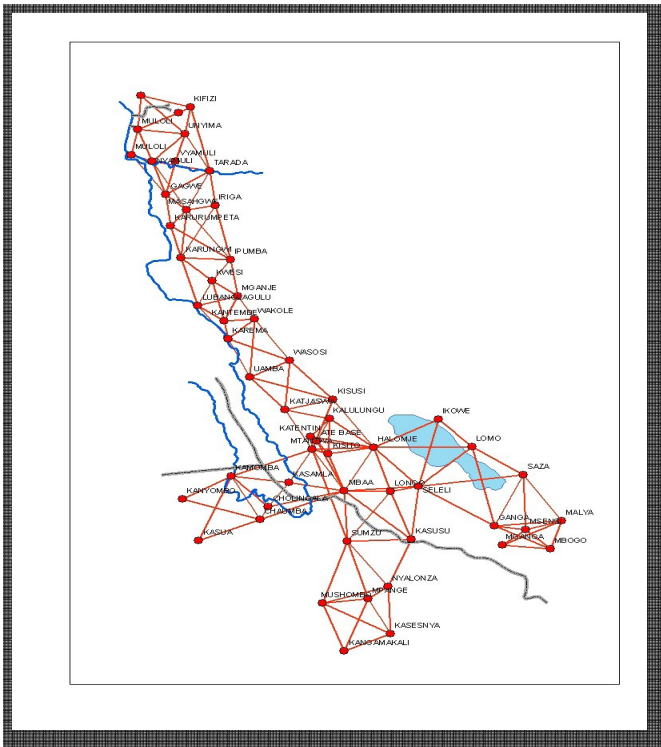


Figure 3: Triangulation scheme observed by major Hotine during the British administration

Later, in 1944, the British Colonial Surveys and Geophysical Committee put forward the argument that geodetic survey is essentially a matter which must be planned for a whole geographic region. The strength of this argument was such that, when the Directorate of Colonial Surveys came into being in 1946 and started its operations this policy was adopted in the British territories in East and Central Africa through the integration of various existing triangulations as they existed (Humphreys 1955).

Although Uganda and Kenya already had a considerable amount of triangulation, this had been done in piecemeal fashion and the networks were of variable quality. In Tanganyika, other triangulation networks that had been observed in the period from 1931 to 1938 had not been computed, thus leaving the triangulation networks in the three East African countries disconnected. As a result, in 1950, it was decided to re-compute the Arc triangulation between Southern Rhodesia (now Zimbabwe) and Uganda. The Tanganyika and Kenya circuits which were linked to the Arc were then recomputed and adjusted to the same datum.

In 1953 a new triangulation chain of 960km in length was observed by the Directorate of

Overseas Surveys (DOS), breaking off from the existing triangulation near Morogoro and running southwards to the Tanganyika-Mozambique border. Here it joined up with the Portuguese triangulation. Finally it turned northwards along the mountains east of Lake Nyasa to rejoin the main Tanganyika circuit. This work was completed in 1954 (Figure 4).

The Arc and its attached loops of triangulation networks established during the British administration formed a foundation for the mapping of the whole of Central and East Africa. This control framework now constitutes the basis of accurate control surveys for geodetic and topographic mapping activities in Tanzania.

2.5 Atlas Mapping During the British Administration

The first official national atlas of the country was produced in 1942 and was named “Atlas of the Tanganyika Territory”. This atlas was significant as it was the only national atlas published in the whole world during the years of World War II. The atlas was printed in full colour and contained 29 pages incorporating 44 individual maps at various scales, a statistical section and tables, short descriptive text panels and a gazetteer (Shand, 1997). The majority of the 18 full size map plates were at the scale of 1:4,000,000 and portrayed topics relating to physical and natural environment. A second edition of this atlas was published in 1948 with revised information and the addition of 5 new maps and graphs of mineral production. The new maps portrayed soils, hydrology, vegetation, malarial areas and principal mines.

Third updated and last edition of atlas during the British administration was published in 1956 and renamed the “Atlas of Tanganyika” (Shand, 1997). The changes in content from the previous edition included the increase in scale of the majority of maps to 1:3,000,000, the combination of the three population maps, the complete removal of the historical section and the addition of 5 new map plates giving a total of 27 map plates.

The 5 new map plates portrayed meteorological data, the distribution of labour, main labour routes, water supplies and extracts from published large scale maps of Dar Es Salaam, Tanga, Dodoma and Morogoro at various scales.

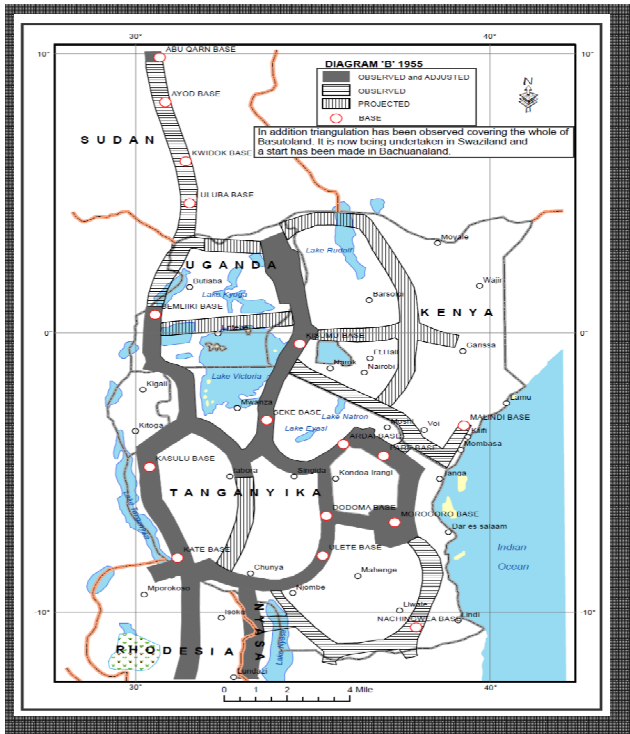


Figure 4: Triangulation scheme by 1955 during the British administration

2.6 Pre-world war II Aerial Surveys

The first aerial surveys were carried out in Tanganyika territory in 1931 by the Air Section, which was under the Director of Surveys and Aviation (Gethin, 1931). From these aerial photographs, topographic maps covering the tsetse-fly areas in the territory were produced at 1:50,000 scale. It is not known how many sheets were published as a result of this project, but it is understood that parts of the Lindi, Mtwara and Tunduru areas in the Southern part of the territory were covered by these maps. Aerial surveys continued to be carried out in Tanganyika throughout the 1930s and, in 1939, more photography was flown in the areas south of Mount Kilimanjaro and Mount Meru, and for the first time, height information obtained from parallax measurements on the photographs was incorporated to produce contoured maps.

2.7 Post World War II Topographic Mapping

After the Second World War, the Directorate of Overseas Surveys (DOS) carried out extensive mapping operations at 1:50,000 scale using aerial photographs taken by the Royal Air Force and the Directorate of Military Surveys (DMS) between 1946 and 1958. During this time, priority was given to the mapping of the areas which were

considered as agriculturally viable. As a result of this policy, the areas south of Lake Victoria (between Tabora and Mwanza); the south-western part of the territory (Rukwa, the Usangu plains and Mbeya); the north –east coastal area; and the Kilombero River Valley and Masasi were mapped first.

All these areas were mapped at different times between 1954 and 1961. It is also interesting to note that the first task of map revision was carried out in 1956 by the DMS to revise map sheets covering the area around Lake Tanganyika as part of the training programme for military surveyors.

2.8 The Primary Leveling Network in Tanzania

The scheme for the primary leveling was originally conceived in 1960 by the then Commissioner for Surveys, Mr. C.W. Hindle, under whose direction a major part of the project was undertaken. The major routes were chosen to follow the railway lines, because roads were more liable to re-alignment. A total of 53 fundamental bench marks (FBM) were proposed, with each FBM being named after the town or locality in which it was built (Figure 5).

In 1961, the first lines from Arusha to Tanga – numbered 24 to 28 in loop A were undertaken. The leveling continued to be done piecemeal because of the lack of funds. Despite the problems of funds, by 1964 the leveling was connected to tide gauges in Dar Es Salaam, which was established in 1959; Mwanza (Lake Victoria), which was established in 1957 by the East African Railways and Harbours (E.A.R. & H.); and Kigoma (Lake Tanganyika), installed in 1957, also by E.A.R. & H.



Figure 5: Proposed leveling loops in Tanzania as of 1961

3. 1 Surveys and Mapping in Tanzania after Independence.

By 1961, when Tanganyika gained independence, DOS had already published map sheets at 1:50,000 scale covering 1/3 of the country. Also 70% of the territory had been covered by small scale aerial photographs. After independence Tanganyika established the Directorate of Surveying and Mapping to oversee the mapping activities in the country. However, most of the basic mapping at 1:50,000 scale has been carried out through foreign aid programmes. This will be explained in detail in section 3.1.1

3.1.1 \The Existing Topographic Map Coverage in Tanzania

Mapping, as categorized at the Division of Surveys and Mapping (DSM) in Dar Es Salaam, ranges from large scale, through medium scale to small scale.

Mainly these will be considered for the purpose of this report. The maps falling under this category are the basic topographic maps at the scale of 1:50,000. Small scale maps are those derived topographic maps at the scales of 1:200,000 to 1:500,000. Atlas maps are those individual map sheets which have gone into the making of the Atlas of Tanzania; these are at the scale of

1:3,000,000 or smaller. Other maps are made under the category of special Maps. Most of these special maps are related to tourism and do not play any significant role in this report.

3.1.2 1:50,000 Scale (series Y742)

This is the basic mapping scale covering the whole of Tanzania mainland in a series of map sheets. In fact, it forms part of the huge series of maps of East Africa (Uganda, Kenya and Tanganyika) at that scale which were produced by the UK Directorate of overseas Surveys from 1953 onwards. Prior to independence, the three countries were closely linked in many aspects (e.g. in terms of currency, customs, transport services (railways, airlines, etc.), universities, etc) and a common topographic map series was regarded as being quite logical at that time. Individual map sheets cover an area of 1/4 x 1/4 degrees and are sometimes referred to as quarter degree sheets. They are mapped on the Universal Transverse Mercator Projection. Maps in this series have been compiled by photogrammetric methods and ground control. All recent maps are published in five colors (red, blue, green, brown and black) and show a wealth of detail. Relief is represented by contours which are currently at intervals of 20 meters, although earlier sheets had a contour interval of 50 feet. A few of the earlier (provisional) sheets in the series gave planimetric detail only and, did not show relief. A total of 1,294 sheets would be needed to cover the whole of mainland at 1:50,000 scale (the islands comprising Zanzibar and Pemba have their own separate mapping programmes). By 1990, only about 70% of the whole country has been mapped although complete coverage was scheduled for 1986. These maps are the basis for all derived maps. The equivalent basic maps for the Unguja and Pemba are at the scale of 1:63,360. Two sheets cover each island. Foremost, among the foreign contributors to the mapping of Tanzania's 1:50,000 scale topographic mapping has been the Directorate of Overseas surveys (DOS) of the UK. As noted above, it carried out much of the original topographic map coverage in the period of the 1950s and 1960s, and this work continued into the 1970s. Since then, during the 1980s DOS has also carried out a considerable amount of remapping-cum map revision covering 94 sheets in the north-east part of the country starting from Arusha along the Kenya border and continuing to the south of Dar es Salaam to the Rufiji delta. Aerial photography was flown at 1:65,000 scale. While

most of the photogrammetric compilation and the cartographic work were done in the UK, final printing was carried out locally by the Tanzania Surveys and Mapping Division (Petrie 1993). Again, quite a significant contribution has been made by Canada through a series of aid programmes. This includes a considerable programme of 1:50,000 scale topographic mapping mostly in the southern part of the country - around Mtwara (1979), Mbeya (1985), and Songea (1991), also Kagera (1987) near Lake Victoria.

This was organized by the Canadian National Mapping Organisation (EMR) and executed by various Canadian commercial air companies (Petrie 1993). Further assistance with Tanzania's 1:50,000 scale mapping programme has come from the Japanese government and comprised of the production of 22 sheets covering part of the north –west of the country around Mwanza on Lake Victoria. A similar methodology to that the DOS has been adopted: the aerial photography has been taken at 1:60,000 scale, while the ground control operations was undertaken by the Division of Tanzanian surveys and Mapping (DSM) and the aerial triangulation and stereo plotting were being undertaken in Japan (Petrie 1993). Essentially this was a remapping project, the original maps having been produced by DOS.

3.1.3 1:250,000 Scale (Series Y503)

Topographic maps at this scale are compiled from the 1:50,000 scale series. Again this series originated with the Directorate of Overseas Surveys in 1953, a decision made in parallel with the development of the 1:50,000 scale series. Individual sheets cover 1 degree latitude by 1.5 degrees of longitude. These sheets are layered with altitude tints. In areas where full colour coverage is not yet available, unlayered versions exist as first editions. A total of 65 sheets cover the whole of Tanzania; all but ten have been published. Both the 1:50,000 and the 1:250,000 scale maps fit together the IMW 1:1 Million sheet system.

3.1.4 1:100,000 – 1:500,000 scale District Maps

These scales are used to map Districts as well as Regions for purely administrative purposes. These are essentially planimetric maps showing each administrative District or Region on a single sheet at scales which vary from 1:100,000 to 1:500,000 depending on the size of the District or Region. Prominent on these maps are the names and

locations of new villages which came into being after the villagization programme. Other information shown on these maps include communication routes, settlements (including villages), administrative boundaries, forest reserves and large farms.

3.1.5 1:1,000,000 scale (Series IMW 1301)

Topographic maps at this scale form part of the so-called International Map of the World (IMW) Series on the 1:1 million scale. These are published in accordance with the internationally agreed specifications for this series which include sheet size (4 degrees of latitude x 6 degrees of longitude), legend layout and representation of relief. Six sheets cover the whole of Tanzania at this scale. All have been published.

3.1.6 1:2,000,000 scale

This is the smallest scale map which shows the whole country on one sheet. The first edition of the map was published in 1965 by the Directorate of Overseas Surveys (DOS). It shows relief by contours and layer tints, roads, railways, towns and other urban centres. It also shows Regional and District boundaries, which are accentuated in pink. This is the base map from which the various atlas maps have been derived.

3.1.7 1: 3,000,000 scale

This is the typical scale used in the National Atlas of Tanzania. Tanzania has had several edition of the atlas produced during its mapping history. As explained before, the Germans published their atlas in 1906. The British then published three edition of the atlas between 1919 and 1956; the first two editions were published at 1:4,000,000 but there are no records about the dates of publication. The third edition was published in 1956 by the Surveys Division and the individual maps were at the scale of 1:3,000,000, the scale which has been adopted in all the later editions. It had 26 map sheets and 2 sheets of statistical information. Since independence, two editions of the atlas have been published. The first post-independence edition of the Tanzania National Atlas was published in 1967 by the Directorate of Overseas Surveys (DOS). It had 28 sheets with descriptive information on aspects such as physical features, climate, vegetation cover and population distribution. The last published edition of the atlas

was second edition which was produced in 1976 by the Division of Surveys and mapping. This consisted of 38 pages of maps on a diversity of topics, including population distribution, rainfall, etc.

3.1.8 Township Maps (Large scale maps)

These maps are intended to cover the legally defined township areas of Tanzania. Each township is covered by a series of basic maps at the scale of 1:2,500 or in the case of Dar es Salaam city, 1:5,000. The larger urban areas are in addition covered by derived composite map sheets at smaller scales. Typical large scales are 1:2,500; 1:5,000; 1:20,000 and in the case of Dar Es Salaam city, 1:25,000. The 1:2,500 scale maps are compiled photogrammetrically and are the main source of information for the making of the smaller scale urban maps. These maps, both basic and derived, show plot boundaries, individual buildings, communication routes and represent relief by contours. In addition, a large project funded by **Norad** (Norwegian International Development Agency) to produce township maps for nine towns was carried out in the 1990's. The towns that were covered by this project were parts of Dar es Salaam, Arusha, Moshi, Tanga, Tabora, Morogoro, Iringa, Mbeya and Mwanza. For this project, maps were compiled photogrammetrically in Norway by Norconsult Consortium of Norwegian survey companies (Viak and Blom Oppmalling), while the field completion was being done by surveyors from the Surveys and Mapping Division.

The input from the Tanzania end also involved the inclusion of the cadastral information for each of the towns. To this end, Norad installed a PC-based digital mapping system in the surveys and Mapping Division, which led to the establishment of the Digital Mapping Unit in the mapping section.

3.2 Cadastral and Village Mapping

Cadastral survey is perhaps the surveying activity which is best known to the common man in Tanzania. Primarily, cadastral surveying involves the determination of plot and/or estate boundaries. From these surveys, deed plans are drawn and are used in the registration of the individual pieces of land. For each piece of land, based on the cadastral

survey, a certificate of the right of occupancy is issued and can be used as a security for, in many cases, a mortgage. Cadastral surveys are carried out by rigorous ground survey methods as dictated by the Land Surveying and Surveyors Act of 1959. The Act also established the Board of Control and Licensing of Surveyors including dealing with complaints against licensed surveyors. In addition to the Act, the Government Notice no. 173 published on 5/6/1959 provides for the Land Survey (General) Regulations dealing with registration of surveyors, and, Government Notice no. 174 also published on 5/6/1959 provides for the Land Survey and Surveyors Regulations instructing the licensed surveyors on the technical procedures in carrying out cadastral surveying. Occasionally, the Director of Surveys and Mapping issues Survey Technical Circulars to address specific issues in order to quality control surveying and mapping practices.

Parallel to the cadastral surveys are the village surveys.

Until recently, the majority of cadastral surveys undertaken in Tanzania were urban surveys which were executed from plan data. This situation changed in 1983 when the Agricultural Policy of Tanzania became fully operational. Since then, the greater part of cadastral surveys had been concerned with the delineation of village boundaries and farms (Silayo 1987). In these surveys, the boundaries of the villages are determined and the individual properties existing within them. But instead of using ground survey methods, these village surveys are performed photogrammetrically. Boundary points within each village are identified on the aerial photographs and are plotted photogrammetrically using stereo plotters. These plots are used as the basis for deed plans and a certificate of occupancy is issued for the villages.

3.3 Atlas Mapping after Independence

3.3.1 Atlas of Tanzania (1967, 1976)

Following the independence of Tanganyika in 1961 and its subsequent union with Zanzibar and Pemba to form the United Republic of Tanzania in 1964, the first edition of a national Atlas of Tanzania was published by the Surveys and Mapping Division, in 1967 (Shand, 1997). The atlas retained its map scale of **1:3,000,000** but varied significantly in content from the three

previous atlases of the country with the omission of 4 map plates and 1 graph plate and the addition of 6 new maps giving a new total of 24 map plates plus 3 full plates of graph and statistical diagrams. Several of the existing maps had been extensively revised and redesigned. The map format was changed as the atlas was now available as a complete volume in a more convenient loose – leaf binding form and, since 1969; it had also been available as individual map sheets. Among the changes to contents was the omission of the physiographic map, the tribal and ethnographic map, the labour maps and the mineral production graphs. New major additions to the map plates included a map of potential land use, a geophysical map, a rainfall probability map, antiquities and monuments map, a fisheries map and setoff maps, figures and texts depicting population characteristics. What is significant about some of the new maps was the move from factually based maps such as a geology map to a more analytical type of map such as potential land use map. A fully revised and extended second edition of the national Atlas of Tanzania was published in 1976, again by the Surveys and Mapping Division. Statistical data for 1972 was utilized where available, the exception to this being the use of the 1967 population census data, in addition to changes in the map content, other major changes included an increase in volume and an extensive rewrite of the descriptive text panels together with the inclusion of many new photographs and diagrams.

3.3.2 Map Production for Tanzania National Atlases

The base maps used for all editions of the national atlas are compiled and derived from the 1:2,000,000 scale topographic map since this is the largest published scale that covers the whole of the country on a single sheet. Technical production initially involved the use of traditional analogue techniques such as pen and ink drawing, combined with the use of typeset lettering and positive masks. Area fills relied on a limited selection of glass line screens and pre-printed adhesive tones and patterns.

The latest (1976) edition of the atlas has seen the introduction of stable polyester films as the base material for the cartographic production process utilizing scribecoat (dyed in blank to create a positive) for linework, peelcoat for masking, and photographic stripping film and wax for name and

symbol stick-up, Higher resolution percentage line and dot tints screen were also available to create higher quality area fills and positive working colour proofing on white opaque astrofoil was also introduced (Shand, 1997).

3.3.3 Specialist/Thematic Atlas of Tanzania

3.3.3.1 Tanzania in Maps (1971, 1975)

According to the author, Prof. L. Berry, this book was aimed primarily at the people of Tanzania both within and out with formal education who wish to know more about the spatial aspects of their country and to those outside Tanzania who require a general overview of the country and its economy.

The book, printed in monochrome (black), contains 89 maps, 61 tables, diagrams, statistical data, extensive descriptive text and a comprehensive bibliography of the information sources used. It also includes chapters and maps of the physical environment (geology; soils; climate; relief; hydrology, etc) and maps of the natural environment portraying aspects of both biogeography (population; culture; industry; commerce; communications etc.) The first edition of the national Atlas of Tanzania is acknowledged as a major source for the data with several government organizations contributing to the non-spatial data and statistical information

3.3.4 Other Specialist/Thematic Atlases

The Regional Economic Atlas of Mainland Tanzania was published in 1968 as a research paper by S.B.A. Jensen of the University of Dar es Salaam and contained 18 maps at various scales. A report on the relative location of health and population in the rural regions of Mainland Tanzania by I.D. Thomas of the University of East Anglia, U.K. comprised a series of volumes including volume 3 which was published as a regional atlas of the Population and Health Facilities in Tanzania, 1978. This atlas, which covers mainland Tanzania only, contains a complete volume of monochrome pen and ink maps at various scales using proportional circles to plot population data against healthcare.

3.3.4.1 School Atlas for Tanzania

It should be noted that school atlases are often referred to as being atlases for a particular

country rather than an atlas of a country. This distinction is important since these atlases, while they may contain a specialist and detailed section on Africa and the home nation; also contain maps of the rest of the world as the major content within the atlas. Since the majority of school atlases for Tanzania and East Africa have been produced since the 1960s, they have benefited from the availability of national atlases as source data and changes in technology. These technological changes had been the introduction of high quality cartographic production processes using scribecoat, peelcoat, and photographic films. The use of full colour illustrations and photographs in these atlases has been a major factor in the introduction of the four-colour production process and the move from letterpress printing to the offset lithographic printing process.

3.3.4.2 Ramani kwa Shule za Primary (1963)

This primary school atlas, also titled “Tanganyika – our country”, is published in Swahili and may have been the first school atlas published for Tanzania. Like many school atlases; this atlas was published in a small format with a series of simplified general and specialist/ thematic maps at various scales for Tanzania and for the rest of the world.

3.3.4.3 Atlasi yenye Picha kwa Shule za Msingi za Tanzania (1969-1983)

Intended as a primary school atlas and again published in Swahili, this full colour atlas dedicates a total of 18 of its 40 pages to Africa and Tanzania and also contains many small illustrations as a complement to its maps. Tanzania is covered by 4 maps at scales of approximately 1:7,000,000 and 1:10,000,000, Zanzibar and Pemba are covered by two maps at the unusually large scale for small format atlas, of approximately 1:300,000 and 1:500,000 respectively.

3.3.4.4 Atlas ‘Kwa Shule za Msingi ‘Tanzania (1987)

This is another Swahili language atlas published by McMillan, and appears to be an updated, redesigned and extended version of the above atlas. A total of 37 of its 66 pages are dedicated to maps of Africa and Tanzania. It contains 14 maps of Tanzania at approximately 1; 7,000,000,

1:10,000,000 and 1:20,000,000 scales and a special 10 map section on Zanzibar and Pemba. Numerous statistical graphs, charts, diagrams and tables have been added to this atlas and the illustrations of the previous atlas have been substituted by full colour photographs.

3.3.4.5 New Secondary School Atlas for Tanzania (1988)

Published in English by the Longman Group and intended for secondary schools in Tanzania, this atlas probably contains the most comprehensive set of maps for Tanzania published to date in a school atlas. A total of 61 of its 152 pages are dedicated to maps of Africa and Tanzania. It contains 25 maps of Tanzania at 1:5,000,000 and 1:12:000,000 scales and includes a special 10 map section on Zanzibar and Pemba at approximately 1:1,000,000 scale, and 2 urban land use maps of Dar Es Salaam. The maps in the atlas are complemented by the extensive use of graphical images such as full colour photographs, statistical graphs, charts, diagrams and tables.

This atlas is one of the first atlases in which the cartography, produced by Wm. Collins & Sons, contains maps generated by digital mapping and desk top publishing technology. The maps have been created on a PC-based manual vector digitizing system and the map design and specification had been completed on an Apple Macintosh system utilizing vector based graphics and desk top publishing software. The output of the cyan, magenta, yellow and black final film separates for plate making was generated on a high resolution (1,240 - 2,400 dpi) raster image setter (Shand, 1997).

4. The Current Aerial Photography Coverage

Tanzania has been completely covered by aerial photography of varying ages and scales (Figure 6). Generally the photography used for the basic mapping at national level (i.e. at 1:50,000 scale) is in the scale range from 1:30,000 to 1:60,000. Photography taken for urban mapping (at 1:2,500 scale) is usually at 1:12,500 scale.

5. Current Mapping with GIS and Remote Sensing in Tanzania.

Although traditional aerial photogrammetric techniques dominate the mapping of Tanzania, the mapping community is quite aware of satellite

images and their potential applicability to mapping. Most of the satellite images available in the country have been acquired by other government agencies, mostly concerned with agricultural or forestry developments or with environmental problems. Thus, for example, quite a number of satellite images have been acquired Ardhi University, the University of Dar es Salaam and Sokoine University of Agriculture.

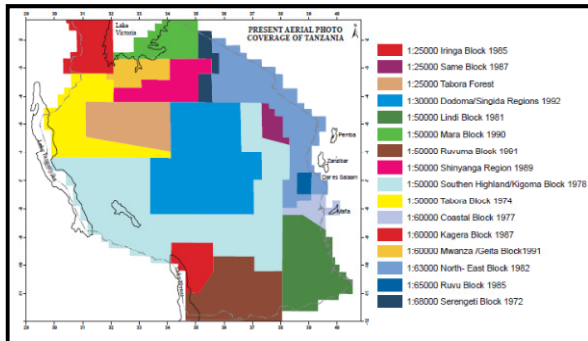


Figure 1: Current aerial photo coverage in Tanzania

It is also useful to note that the first map from satellite data in Tanzania was made as an experimental image map for Tabora and the area covering the West and Central parts of Tanzania at 1:1,000,000 scale from Landsat MSS imagery. The image map was produced by the U.K Directorate of overseas surveys (DOS). This image map had been produced in two editions (Bolderstone 1987). The first edition was produced by mosaicing together hardcopy prints of the 17 images covering the area. Additional information such as water features, railways and swamp areas were interpreted from RBV imagery and existing IMW maps. The second edition was produced in system of the Geodata Unit of the University of Southampton and the film writer facilities of the National Remote Sensing Centre (NRSC) in the UK. Landsat 3 and 5 MSS images as well as Landsat TM data were used as the basis for this edition

6.0 Training in Surveys and Mapping in Tanzania

In 1936, the first experiment to train primary school leavers as survey technicians. However, the programme was discontinued two years later, because the school leavers could not cope with course (Silayo, 2005). Between 1951 and 1953 attempts were made to resume to train school leavers, but again proved to be unsuccessful. The Survey training started again as a Department in

1956 as the Survey Training Centre (STC) at Mgulani area in Dar Es Salaam. This time the centre trained the field chainmen who had already been involved in field surveys. The objective then was to improve their technical and theoretical understanding of surveys and mapping. The training took variable times between six month and one year depending on the expected assignment for the particular group. The recruitment did not specify any qualifications in order to join the centre nor did it give any certificates after completion of the training period.

In 1958, the Centre was moved from Mgulani to the location currently occupied by Ardhi University. Then, the Centre was also charged with training of Cartographic draughts men as well as Survey Technicians. At this point a more rigorous training programme started. At this point, entry qualifications were specified, where, those with primary education (Standard Four) were allowed to join the centre. Later, entry qualifications were raised; where, those who had completed Standard Eight education were recruited for the training.

Professional surveying at degree level (Bachelor level) was not carried in Tanzania. Students were sent overseas, particularly to Canada, Poland, Hungary, and Russia; and to the University of Nairobi (Kenya) to get their degrees. Quite a number of surveying professionals who worked in Tanzania from 1972 were graduates from these countries.

However, in 1972, following the government's policy of decentralization of its activities to the regions, demand for more and better trained surveyors was felt. The STC status was therefore changed to the former Ardhi Institute. The Institute was charged with training of mid career sub professionals in Land Surveying, Land Management and Urban and Rural Planning. Training for these courses lasted for two years. Graduates of the institute were conferred with Ordinary Diplomas in their respective disciplines.

In 1974, the Institute was re-established by the Act of Parliament and its roles were modified. The institute then started offering full professional courses of three years duration. At the same time Tanzania stopped sending its students to Nairobi with the anticipation that the 'New' Ardhi Institute could now cater for the need of producing high level professionals in Land Surveying. Successful

students who graduated from Ardhi Institute were awarded Advanced Diploma in Land Surveying. The diploma programmes were rated as degree equivalent.

In 1996, Ardhi Institute was affiliated to the University of Dar Es Salaam and became a University College of Lands and Architectural Studies (UCLAS). UCLAS started offering Bachelors Degree programmes in Land Surveying and other areas of expertise. In 2007, UCLAS acquired University status in the Name of Ardhi University (ARU) and in the process the school of Geospatial Sciences and Technology was established. While Ardhi Institute and later Ardhi University were offering professional degrees in surveying and mapping, another institution, Ardhi Institute –Morogoro was conducting ordinary diploma level and certificates in the same discipline. The courses in Morogoro were tailored to produce technicians capable of carrying out cadastral and engineering surveys under guidance of a better qualified person.

7. Conclusion

For the past 120 years, as elsewhere in the world, mapping is still an active activity that is going on in Tanzania. The private sector in surveying has also expanded. However, the National Land Policy which came into effect in 1995 put new directions on how to handle land matters including surveys and mapping. In particular, Section 5 of the policy stipulates how surveys and mapping activities should be handled. For example, while in the past all surveying and mapping activities were carried out by the Government, Sub-section 5.1 sets a policy statement which now encourages the private surveyor to play a bigger role in executing cadastral survey while the Government should largely limit itself to undertake all basic and control surveys (topographic, geodetic, hydrographic and triangulation); supervise, check and approve all cadastral surveys in accordance with the laid down laws and procedures. Also, on realizing the increased demand for accurate and up to date topographic maps, the policy insists that the government rather than the private sector to concentrate on the production of topographic maps of the scale of 1:50,000 and the urban maps at the scale of 1:2,500. Sub-section 5.2 further, emphasizes that village demarcation should be done to protect use of natural resources within villages. The surveying and mapping authority

does not operate in ideal circumstances, indeed the conditions under which it conducts its operations, are not dissimilar to those found in other developing countries. Fundamentally, the budget is tight for the purchase of equipment and materials. This makes me conclude that in spite of its importance to the nation's development, insufficient attention has been paid to the surveys and mapping processes in Tanzania.

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Reviewing a Geomatics Curriculum: A Makerere University Perspective

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ABSTRACT

This paper discusses the approach, issues and considerations for developing a modern curriculum in Geomatics at Makerere University in Uganda. Makerere University began enrolling students to its four-year BSc. Surveying programme in 1990. However, the first review of this curriculum occurred around 1997 when the University migrated from a term system to a Semester system. The curriculum was adjusted essentially to have the courses modularized to fit the semester system without any significant alteration of course content. In the semester system, an academic year that previously comprised 3 terms was later constituted by 2 semesters and what was previously 4th term became the recess semester in the semester system but serving the same purpose.

In 2009, the department of Surveying, now renamed Department of Geomatics and Land Management, embarked on a comprehensive curriculum review process for its undergraduate degree. The review process included needs assessment among key stakeholders, training of staff in curriculum review as well as pedagogical skills, curriculum drafting, benchmarking, career guidance and accreditation of the new programme.

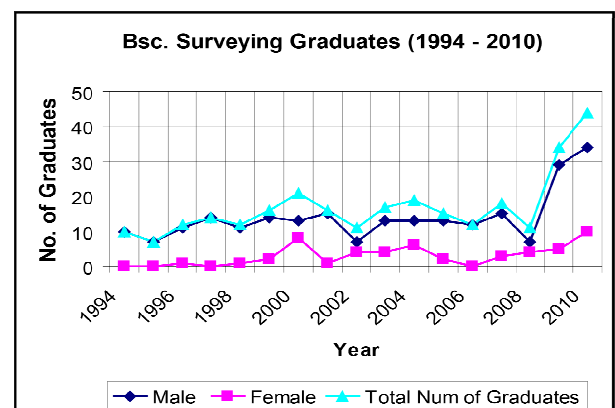
Our experience in the curriculum review process has led us to develop an opinion on the way in which a modern Geomatics curriculum should be implemented. In order to produce motivated and industry ready graduates to extend the frontiers of Geomatics technology, it is necessary to first and foremost attract students from the high school through career guidance. It is equally important to train teachers in pedagogical skills and modern techniques for delivering knowledge. Maintaining an active link between the university and professional bodies, benchmarking the curriculum regionally and internationally are some of the ways of ensuring that the curriculum is relevant to the industry needs.

Key words: Curriculum Review, Needs Assessment, Participatory Approach

1. INTRODUCTION

Before 1985, land surveying at Makerere University was offered as a service course in the Department of Civil Engineering under the then Faculty of Technology. In 1985 the government of Uganda mandated the University to establish a fully fledged Department of Surveying to provide for the training of Land Surveying professionals in the country. Previously, Land Surveying professionals were trained outside the country, which proved to be expensive and unsustainable. The newly developed Department of Surveying had its first intake in 1990 with a skeleton staff mainly seconded from the Ministry in charge of Lands and

Surveys. Since 1990, the intake has steadily increased from 10 students per year to an annual average of 50 students currently. The Department has now been renamed, Department of Geomatics and Land Management and the new programme has been renamed Bsc Land Surveying and Geomatics. The first cohort of students completed their studies in 1994 and Figure 1 depicts the number of students completing studies since then. As will be observed, the intake is mostly male dominated, however female intake has increased from 0 in 1994 to an average of 10 currently.



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Figure 1: Student Completion rates from 1994 – 2010

2. Evolution of the BSc Surveying Curriculum

The BSc. Surveying curriculum was a 4-year programme which was essentially geared towards meeting the industry demands of the time. Table 1 shows the original course outline and as can be observed, the curriculum followed the traditional Land Surveying curriculum. Admission to the programme was dependent on advanced level national examinations with a bias towards advanced level students studying Mathematics, Physics, and Chemistry (Or economics) or Mathematics, Geography and Economics. There was also provision for admission based on mature age examinations as well as diplomas in Surveying or Civil Engineering. However these two windows would constitute less than 20% of the admission in a particular year.

The programme was administered under the term system where an academic year consisted of three terms for most of the University courses and four terms for programmes with a strong practical component such as: Surveying, Medicine, Engineering, Architecture etc. The 4th term was usually reserved for extended hands-on experience. For the BSc. Surveying programme, the 4th term (amounting to 10 weeks) of the 1st year of study, was dedicated to a survey camp, during which students had extended practical exposure. This was an important opportunity for students to contextualise the theory with practice regarding use of equipment in solving relatively medium scale surveying tasks (Young et al., 2010).

In the 2nd and 3rd year of study, the 4th term was dedicated to industrial training (Field attachment), during which time students were attached to surveying firms, government departments, parastatals etc as long as there was survey work and a field supervisor to train the student. The purpose of these attachments was to introduce students to real life work environments, give them a feel of customer relations, office practice and etiquette. At the end of the industrial training, students were expected to submit a written report, approved by the field supervisors.

Around 1997, the University adopted the semester system for which the previous content under the term system had to be adjusted. An academic year which previously consisted of three terms was

repartitioned to two semesters. What was previously 4th term became known as recess semester in the new system. In response to these developments, the academic staff embarked on a review process that saw the previous content ‘modularised’ to fit into a semester system. Table 2 shows how the content in Table 1 was modified

Table 1: Original BSc. Surveying Curriculum

Year 1	Year 2
Survey Mathematics I	Survey Mathematics II
Principals of Surveying	Principals of Surveying II
Physics	Photogrammetry I
Plan Drawing/use of maps	Measurement Science
Natural Environmental Studies	Principles of Landscape Design
Introduction to Geodesy	Map Projections
Computer Studies	Computer Studies
Survey Camp	Industrial Training
Year 3	Year 4
Survey Adjustments and Computations	Digital Mapping and Remote Sensing
Land Law and Cadastre	Land Registration
Photogrammetry II	Professional Practice
Cartography	Business Management
Land Development	Geodesy II
Geodesy I	Final Year Project
Industrial Training	

As will be noticed, the curriculum essentially was tailored around the old curriculum with the addition of courses meant to improve interdisciplinary interaction between the Land Surveying graduates and allied professionals such as Land Valuers and Quantity Surveyors. In some unavoidable situations, content that was previously taught over three semesters was to be covered in one semester; typical examples of this scenario include Survey Mathematics, Natural Environmental Studies, Principles of Surveying I and so on. In other cases, content for an old course previously covered within three terms was split into two to fit in two semesters; examples of this

include Survey Adjustments and Computations which was split into Survey Adjustments I and II for semesters 1 and 2 respectively of 3rd year. Similarly Digital Mapping and Remote Sensing course was also disaggregated into Geographical Information Systems (GIS) and Remote Sensing and offered separately. Cross cutting courses such as Communication skills and Sociology were also introduced in the curriculum.

The curriculum as outlined in Table 2 has been in operation for the better part of the last 13 years without revision. During this time, technology advancements in the field of Geomatics have gained prominence especially in the fields of Global Navigation Satellite Systems (GNSS), Survey instrumentation, GIS and Remote Sensing. Similarly, advancements have been experienced in

ICT affecting the manner in which geomatics material could be presented to students for effective learning. New learning paradigms such as learner centered pedagogy are increasingly gaining currency. Unfortunately the existing curriculum was seen to be inadequate to meet these current trends and demands. As a consequence the curriculum was increasingly being deemed inadequate for training the modern surveyor to meet the future demands of the Geomatics industry locally, regionally and internationally. This paper therefore discusses the review process that the department undertook to develop a curriculum with a more modern and fresh outlook. Figure 2 gives the schematic model developed to come up with a modern programme responsive towards current and future Geomatics needs and trends.

Table 2: BSc. Surveying Curriculum adjusted to Semester System			
Year 1		Year 2	
Semester I	Semester II	Semester I	Semester II
Survey Mathematics 1	Introduction to Advanced Surveying	Survey Mathematics II	Principles of Landscape Design
Principles of Surveying 1	Measurement Science	Cartography	Photogrammetry 1
Physics for Surveyors	Land Economy 1	Building Economics 1	Hydrographic Surveying
Plan Drawing	Economics for Surveyors	Land Economy II	Computer Studies II
Natural Environment Studies	Computer Studies for Surveyors	Map Projections	Land Law for Surveyors
Communication Skills	Engineering Surveying	Sociology for Technology	
Recess Semester	Survey Camp	Recess Semester	Industrial Training
Year 3		Year 4	
Surveying Mathematics III	GIS	Land Development	Business Management
Survey Adjustments I	Survey Adjustments II	Cadastral Surveying	Satellite Geodesy
Land Registration	Geometrical Geodesy	Professional Practice	Survey Project
Photogrammetry II	Building Economics II	Survey Project	
Physical Geodesy	Land Economy III		
Research Methods	Remote Sensing		
Recess Semester	Industrial Training		

Table 3: Revised Curriculum – BSc. Land Surveying and Geomatics			
Year 1		Year 2	
Semester I	Semester II	Semester I	Semester II
Principles of Surveying and Instrumentation	Engineering Surveying	Mapping Science	Cadastral Surveying
Physics for Surveyors	Principles of Geographical Information Systems and Remote Sensing	Building and Maintaining Geo-databases	Principles of Satellite Positioning
Introduction to Computing	Computer Applications and Programming	Land Economy II	Introduction to Photogrammetry
Economics for Surveyors	Land Economy 1	Construction Studies	Hydrographic Surveying
Survey Mathematics	Geo-hazards and Environmental Studies	Statistical and Analytical Methods	Land Law for Surveyors
Communication Skills	Introduction to Urban and Regional Planning	Sociology for Technology	Introduction to Gender and Development
Recess Semester	Survey Camp	Recess Semester	Industrial Training
Year 3		Year 4	
Adjustment of Survey Measurements	Analysis of Survey Measurements	Professional Practice for Surveyors	Entrepreneurship and Business Management
Physical Geodesy	Advanced Satellite Positioning	Negotiation and Dispute Resolution	Land Administration and Registration
Mapping from Satellite Imagery	Research Methods for Surveyors	Survey Project	Survey Project II
Advanced Photogrammetry	Project Management for Surveyors	Electives (Choose 1 Course)	Electives (Choose 1 Course)
Geospatial Data Analysis and Modeling		Geospatial Information Management	Advanced Remote Sensing Applications
Adjustment of Survey Measurements		Space Geodesy	Real Estate Management
Recess Semester	Industrial Training	Land Policy and Land Reform Studies	Advanced Engineering Surveying

Figure 2: Schematic Model of Makerere University Geomatics Curriculum Review Process



3. Curriculum Review

3.1 Modern Paradigms in Geomatics Education

A review of literature shows that over the last 20 or so years there has been an interest in the quality of Land Surveying education globally as well as its responsiveness to emerging Geomatics industry trends. Surveying education seems to be influenced by advancements in technology, perception towards the profession and emerging trends in Geomatics pedagogy. The proliferation of digital equipment such as satellite positioning equipment, digital levels, total stations etc has seen a shift from classical techniques (Tunalioglu and Ocalan, 2009) to contemporary approaches. Google earth, availability of satellite imagery, GIS have all challenged the face of the spatial information management (Enemark, 2009) and as a result, most surveying curricula around the world (both in developed and developing countries) have increasingly incorporated these technologies. Many universities have rebranded their undergraduate programmes (and department names) to include / emphasize Geomatics / Geoinformatics in an attempt to improve the public's perception of their courses (Fajemirokun et al, 2009). This has been partly influenced by the need to make the course/profession more attractive (Fajemirokun et al, 2009) as well as to capture the paradigm shift from measurement to management (Enemark, 2009). On the pedagogy front, there is an increased shift towards learner centred pedagogy. A consequence of this shift is that emphasis is placed more on how students are learning and less on how teachers are teaching (Enemark, 2009). In the words of Bacher (2009), the paradigm shift is from teachers providing facts and knowledge in frontal lectures to facilitating students and guiding them to the sources of knowledge. The metamorphosis is from the sage on the stage to the guide on the side (Bacher, 2009). Enemark (2009) posits that these challenges necessitate curriculum design and course delivery that is innovative and responsive to these trends. In this regard, Enemark (2005) recommends that the education profile of the modern surveyor should encompass the 3 key areas of measurement science, land management and supported by and embedded in a broad multidisciplinary paradigm of spatial information management.

In order to facilitate the development of the revised curriculum, these issues were put into

consideration. Exposure to the intricacies of curriculum review was made possible through the training of departmental staff by a curriculum expert from the School of Education at Makerere University. The training involved exposure to emerging pedagogical paradigms specifically learner centered pedagogy, the curriculum review process, skills identification, course structuring in line with the standards set by national accreditation body (The National Council for Higher Education), course objective and content alignment etc. The curriculum review was spearheaded by a taskforce of academic staff members from the Department of Surveying, who from time to time co-opted students and members of the Institution of Surveyors of Uganda – the professional arm of the Surveying profession in Uganda.

3.2 Needs Assessment

Having mapped out the entire process for curriculum review, the first assignment was to undertake a needs assessment from current and previous students as well as professionals in the different geomatics sub disciplines such as cadastral surveyors, engineering surveyors, land administrators, geoinformaticians etc. The major incentive for carrying out a needs assessment was to ensure that the proposed curriculum was relevant to the local industry. It should be noted that this approach was in contrast to the one adopted in the first revision of the curriculum where staff merely adjusted content in the term system to suit the semester system without input from the students and / or industry. The participatory approach employed in this review, was therefore intended to create a sense of ownership of the entire process, and ultimately acceptance of the final curriculum among the students and most importantly future employers. The assessment employed a combination of questionnaires, face to face interviews and a workshop as data collection techniques. A summary of views sought from alumni and students included:

- Why they opted to pursue BSc Surveying
- Of the four choices they could apply for, was BSc Surveying their first choice, if not what choice was it?
- In light of their experience in the field, which courses did they consider most relevant
- What content they would like to see retained / removed / included in the new curriculum

- If they would favour a change from BSc. Surveying to BSc. Geomatics or BSc. Geospatial Engineering

The results of the needs assessment were summarized and presented in a workshop organized to further triangulate the results. Participants of the workshop included practicing private and Government surveyors, land administrators, GIS professionals, students and staff in the then Department of Surveying (Later renamed Department of Geomatics and Land Management).

The results from the needs assessment indicated that the majority of the students who were admitted to the programme did not list Bsc. Surveying as a 1st choice, but as a 2nd or 3rd choice. Most of the admitted students had failed to raise sufficient points to be admitted into the Engineering programme and settled for Surveying as a last resort. Likewise, most of the respondents indicated that even when they were originally admitted to the Surveying programme, they hardly knew what land surveying was about. This was indicative of lack of career guidance about the profession in high school. Despite this, it was also realized that about 70% of the graduates were successfully pursuing professions in the broad geomatics industry in Uganda and abroad. Furthermore, some of the shortcomings about the curriculum mentioned by respondents were that:

- The programme did not avail sufficient time to carry out practicals
- There was shortage of survey equipment
- There was a shortage of technicians to supervise practicals
- Some modules were too similar in terms of content and needed to be redesigned
- The sequencing of the courses required modification. For example, students went for industrial training (field attachment) before covering modules that prepared them for the task. One highlighted case was that cadastral surveying was covered in 4th year yet its content was potentially a prerequisite for the 2nd year and 3rd year industrial training
- The curriculum did not sufficiently cover advances in the Geomatics industry

An industry based needs assessment was also carried out to define the profile of the Geomatics professional this programme should deliver. To wit, the following questions were asked:

- What are the current challenges in the Geomatics industry?
- Which of the challenges should be addressed by the Geomatics programme?
- What competences should the Geomatics graduate possess in order to address the challenges

Based on the above questions, the curriculum drafting committee further posed the following guiding questions while developing course content and programme structure:

- What Course Outline captures all the above Competencies?
- How should the courses be sequenced so as to enable efficient learning?
- What should be the content of each course?

3.3 Curriculum Drafting

The views derived from the needs assessment were then analyzed and synthesized to inform the curriculum drafting process by defining the competence areas, relevant skills and profile of a Geomatics professional.

This fed into the development of courses with a view of ensuring that prospective graduates are sufficiently equipped with requisite knowledge and skills. Having listed the prospective relevant courses that a Geomatics professional needed to undertake, the next step was sequencing of the courses. The major consideration during sequencing was to begin with foundation courses followed by technical/professional courses and finally field practice preparation courses, details of which are depicted in Table 3. Foundation courses were meant to ground students in basic science before embarking on the technical courses. Foundation courses included mathematics, Information Communication and Technology (ICT), Physics etc. Most of these courses were allocated to the first year of the programme. Technical/ professional courses were scheduled in the second and third year of the programme while field preparation courses were scheduled in the final year. Field preparation courses were considered to be courses that prepared a graduate to practice efficiently in the field. These included professional ethics, business management and project management. Sequencing also ensured that courses which provided foundation information to other courses were offered earlier to facilitate smooth flow of information/knowledge. Sequencing also

facilitated students to specialise towards the end of the programme and this is the reason why elective courses were introduced in year four.

Initial compilation of course content was the responsibility of the academic staff in charge of the course. However, each lecturer would present the draft content to the entire team and would receive comments on the content. The outline of each course included: Course Name, Course Code, Course level, Credit units, Course Summary, Course Objective, Learning Outcomes, List of Topics, Mode of delivery, Mode of assessment, Proposed staff, and references for the course.

To ensure that the developed programme was comparable to regional programmes, staff visits were made to Universities in the region and internationally. This ensured that the revised curriculum was enriched with best practice regionally and internationally. The final draft was then presented to a stakeholders' workshop where it was discussed by all the stakeholders including a visiting professor. The visiting professor had been provided with a copy of the curriculum and had compiled an evaluation report for presentation to the stakeholders. The visiting professor and stakeholders present provided useful comments and suggestions which the curriculum drafting committee incorporated in the final version of the curriculum. Table 3 gives the outline of the final curriculum draft.

The first apparent difference between the old and the new curriculum is in the renaming of the programme name from BSc. Surveying to Bsc. Land Surveying and Geomatics. This was in tandem with the global trends in rebranding of surveying programmes. The programme name was also influenced by responses from industry about whether a change to BSc. Geomatics or BSc. Geospatial Engineering etc would be acceptable. From interaction with industry opinion was split down the middle. BSc. Land Surveying and Geomatics were agreed upon as a compromise with Land Surveying emphasizing the conventional role of a surveyor and Geomatics referring to the emerging disciplines for Geomatics professionals. This rebranding however only has credence when coupled with a change of teaching methods and curriculum review.

An evaluation of both curricula (Table 2 and 3) reveals a number of additional differences for instance some course modules were removed such as Introduction to Advanced Surveying. This was

because the course title was deemed a misnomer considering that it was a first year course, and yet it was inconceivable that one would be doing an advanced surveying course in first year. Besides, its content was an overview of content to be covered in the latter years. Furthermore, some courses were merged e.g. Plan drawing, Cartography and Map Projections were amalgamated to a new course named Mapping Science. The curriculum also increased the content of Geo-information and Satellite positioning courses in comparison to the previous curriculum. Another addition in the revised curriculum was the addition of management skills by the introduction of the following modules: Project Management for Surveyors, Negotiation and Dispute Resolution, Entrepreneurship as well as Business Management.

As mentioned before, there was a complaint in the previous curriculum about the sequencing of some of the course modules e.g. Cadastral Surveying which was covered in 4th year. This meant that when students went for industrial training at the end of 2nd and 3rd year, the field supervisors considered the students to be ill equipped since they did not demonstrate any basic knowledge of cadastral surveying, yet it is one of the most vibrant types of surveying in Uganda. In the new curriculum, this has been rectified by ensuring that by the time students go for their first attachment at the end of 2nd year industrial, they should essentially be comfortable with concepts of cadastral surveying, engineering surveying, GNSS and Geo-information.

The other significant difference is the 4th year electives one could opt to specialize in Geoinformatics and choose Geospatial information Management and Advanced Remote Sensing Applications in Semester 1 and 2 respectively. Alternatively one could pursue the Land Management option and choose the Land Policy and Land Reform and Real Estate Management in Semester 1 and 2 respectively. The other option would be Engineering Surveying with options in Space Geodesy in Semester 1 and Advanced Engineering and Mining Surveying in Semester 2.

3.4 Implementation of Revised Curriculum

In order to ensure that the revised curriculum was well implemented, the first task was to equip staff in pedagogical skills. Like in many Universities, staffs at Makerere University are essentially recruited on the basis of their undergraduate

performance and never gain any pedagogical training. It was considered that a brilliant student may not necessarily be a good communicator of knowledge and this is the reason why the pedagogy training was organized. The training broadly covered best practice in pedagogy – specifically learner centered pedagogy, learning theories, methods of instruction, and methods of assessment and monitoring of learning. The new curriculum was intended to incorporate both online and offline e-learning tools in its delivery. The main challenge to the incorporation of e-learning in developing countries like Uganda is poor bandwidth, intermittent internet and power outages. This is the reason why offline e-learning tools were included as options. The other anticipated challenge is getting students with different IT backgrounds, as different high schools have different IT proficiencies. For such students, remedial IT courses have been developed to be delivered in the first weeks of the semester. In terms of quality assurance, student assessment of course content, delivery as well as student assessment of lecturers has been introduced. It is also intended that there will be regular reviews of the programme content and industry evaluation of the students.

Through funding by the World Bank and Government of Uganda through the Millennium Science Initiative project managed by Uganda National Council for Science and Technology, new equipment and software have also been procured. This will ensure that the graduates are well grounded in theory and practicals to meet the local and international industry demands. Additionally technicians have been recruited to ensure that students have proper tutelage.

To address the challenge of lack of knowledge about the surveying profession by secondary school students and other potential applicants, it was decided that the department would be proactive in marketing the programme.

This has involved developing promotional material, actively carrying out career guidance in secondary schools, improving visibility of the Department at University open days and other fora, and launching a dedicated departmental website. It is hoped that through this deliberate effort, the department will be able to attract the highest calibre of students to the programme. As part of the marketing strategy, the Department has sought and been granted academic membership to the International Federation of Surveyors (FIG). It is

anticipated that this will go a long way in internationalising the programme. The department is also in the process of exploring department is also actively exploring student and staff exchange programmes with other Universities in a bid to keep its programme internationally relevant.

In order to keep the curriculum current and relevant the department has instituted monitoring and evaluation mechanisms. This will include regular review of the program through student evaluation of staff, teaching and teaching materials as well as feedback from industry based on industrial training. The development of the new programme faced a number of challenges; the main one being challenges of staffing. The geomatics profession has grown so much that the spread of expertise has broadened. This means that for each thematic Geomatics area e.g. Geodesy, Remote Sensing, GIS, Engineering Surveying, Cadastral Surveying, Land Management etc there is need for a critical mass of staff.

This situation is not helped by the low remuneration of University staff vis a vis what the industry pays which makes it even more difficult to attract graduates to pursue a career in academia.

3. Conclusion

The new curriculum is in its first year of implementation. In its development, effort has been made to engage in a participatory approach to ensure that the curriculum has a broad appeal. Best practice has been harnessed from the region and internationally. The strength of the resultant curriculum lies in its ability to produce a motivated graduate who is well grounded in both theory and practicals to address the current challenges in the Geomatics field.

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Professional Skills Needed in Formulating and Implementing National Land Policies

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ABSTRACT

Developing countries are facing a number of challenges in search of development. Various policies and strategies have been formulated and many are already in the process of implementation in different countries. Among the policies are National Land Policies (NLP).

Because of the explosion of human population, land has continued to be scarce. It is as if it were shrinking in size. Therefore, governments have had to conceive plans to optimize its use to bring about socio-economic cum political development without lowering its quality. Such conceptions have led to the development of National Land Policies. Such policies are intended to enable the present generation to exploit the land without degrading it so that it is also available for the needs of future generations.

Those in the land sector professions have been privileged a great deal to be in a position in which, through the formulation and implementation of land policies, may facilitate and influence the way land as a resource can be used for the development of mankind. In that respect, they have a noble task to proactively tackle the challenges that mankind faces with respect to the use of land in pursuit of befitting livelihood status and prosperity. During the process of formulation of land policies, governments rely on expert advice mainly from the land sector professionals, among them: land surveyors, valuers, spatial planners, geo-information experts, as well as other professionals; including lawyers, economists, architects and sociologists so that feasible policies that are pro-poor can be produced.

This paper addresses the role that professionals can play to contribute to the formulation and implementation of National Land Policies. Critical land sector issues that the policies address are examined, knowledge-based qualities that should characterize professionals are discussed, and options for the way forward are proposed. In the process the following are addressed: innovative approaches, networking, partnerships and cooperation. Examples are drawn from National Land Policies of eight countries in Eastern and Southern Africa.

Key words: *land policy, professional skills, competence, teamwork, equitable land rights delivery*

1.0 Introduction

Land is the part of the Earth Planet that is not covered by water and includes permanent fixtures to it such as buildings, infrastructure and plants. About 71 percent²⁴ of the Earth's surface is covered with water. Therefore, only 29 percent of the Earth's surface is land on which we live and carry out most of our activities and from them derive our livelihoods. Because of the ongoing global climate change, land may be reduced by swelling ocean waters as a result of global warming effect which continues to cause melting of the polar ice caps. Islands and low lying areas of larger countries, most of which are poor, face

severe threats from climate change. Examples include some Pacific islands and Bangladesh (Daily monitor No. 325, Issue of 22 November 2007, Kampala). There is no doubt that such countries need great care in planning their land uses.

The World Trade Organisation defines a natural resource as a material source of wealth that occurs in a natural state and has economic value. Land is, therefore, a resource. This resource is one of the two most basic of all the resources available for social and economic development in a country, namely land and water. When these two resources interact, they produce other resources including arable soils, forest, pasture, wildlife habitat and marine ecosystems (Kingdom of Cambodia, 2002; and Malawi, 2002).

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²⁴ <http://csc.gallaudet.edu/soarhigh/earth/earth.html> Accessed August 2007.

Land is a limited resource in that its surface area cannot be extended, but can instead be reduced! Because of the population explosion, land has continued to be a scarce resource. By its scarcity, it has value which must be protected. The best care and protection of land is

for the current generation to use it in a way that it will continue to sustain the lives of the limitless generations yet to come. In order to maximize its use in a beneficial way, governments prepare guidelines in the form of land policies that prescribe how best land should be allocated, used and managed in sustainable ways to bring about development. Van der Molen (2005) observes that a National Land Policy is a document that reflects the way governments want to deal with the land issue in sustainable development.

To get feasible policies, land sector professionals have a duty to conduct public awareness education on various land issues including land policy formulation; transparency in land administration; land tenure systems and rights; land description and registration; access to land; land valuation and taxation; participatory aspects of land use planning and management; land conservation and environmental management; the link between land use and poverty alleviation; etc. To be able to do all these effectively, the professionals must themselves be ready to keep learning and practice teamwork spirit. Various aspects of professional skills needed in formulating and implementing National Land Policies are therefore explored.

2.0 Why are National Land Policies Made?

To answer this question reference is made to a study made by Silayo (2007) in land policy documents of eight countries in Eastern and Southern Africa and one in South East Asia. Of the eight policy documents, five have been completed and four are still in draft form. Those which have been completed and are being implemented are of the Kingdom of Cambodia (the only one outside Africa), Malawi, Namibia, Rwanda, and Tanzania. Those which are still in draft form and therefore are still in the formulation process are of Kenya, Swaziland, Uganda and Zambia. This paper examines them with the view to enhancing the quality of the discussion.

National Land Policies (NLP) are made for varied purposes. They have been or are being made with the aim to:

- a) give guidance on how best to address noted shortfalls in the existing legislation on land (Kingdom of Cambodia, 2002);
- b) address national social and economic development constraints caused by the absence of a comprehensive land policy, weak planning coordination and limited human capacity (Malawi, 2002);
- c) redress the problems of access, dispossession, discrimination, and inequitable distribution of land and land tenure that characterized the pre-independence era (Namibia, 1998);
- d) establish a framework that meets the needs and national aspirations on matters related to land for the achievement of equity, stability, poverty reduction and economic growth (Kenya, 2007);
- e) establish a framework that will guarantee safe and stable form of land tenure, and bring about a rational and planned use of land while ensuring sound land management and an efficient land administration (Rwanda, 2005);
- f) address severe economic, social and environmental pressures on land resources (Swaziland, 1993);
- g) address problems that exist concerning land tenure, land use and degradation; land value and land market, land grabbing; and conflicting statutory land measures (Tanzania, 1995);
- h) resolve complexity and ambiguity in the constitutional and legal framework relating to ownership, control, conflicts, multiple land tenure regimes, and management of land resources (Uganda, 2007); and
- i) address inefficiencies among institutions responsible for land administration (Zambia, 2006).

From the foregoing country situations, it can be noted that distribution of land related resources and rights, responsibilities and restrictions over them are fundamental to the socio-economic as well as political developments of countries. For example, the way in which the benefits of agricultural activities, forestry, fishing, mining, tourism, urban expansion, industrial and transportation are conducted and sustained are closely linked to the allocation and management of land (Kingdom of Cambodia, 2002). Governments have therefore to formulate goals for the administration, use, management and distribution of the natural resources among their citizens. Such goals are embodied into the National Land Policies. The

policies provide a sound institutional framework for clarifying and documenting rights in land, managing land resources for sustainable economic and social benefits and making provision for equitable distribution. They form the basis of formulating land laws which will enforce land tenure rights on access, use and management of land to ensure conformity with well defined, legally recognized and enforceable environments that in turn facilitate the achievement of political, social and economic goals.

3.0 Formulation and Implementation of Land Policies – The Case of Tanzania

The formulation of a National Land Policy is a long process that involves a wide cross section of stakeholders. The main player is usually the ministry responsible for land development. In Tanzania, it is currently the Ministry of Lands, Housing and Human Settlements Development.

The absence of a land policy was at the centre of a host of problems in land administration, land tenure, land use and management. The problems had been propelled by various factors that included the increase of human population, which led to increased competition for the few available planned, surveyed and serviced plots in urban areas. In the rural areas, farming encroached grazing/forest land, large livestock population raised the demand for grazing land and at times conflicted with farmers; cultivation of marginal land, and investors wished to acquire large pieces of land. Land markets were not recognized. The villagization process of the 1970s adversely affected the customary land tenure systems, resulting to many litigations which had to be attended to by the country's judicial system. Indeed the court of appeal affirmed customary tenure rights in areas affected by the villagization process and so there was need to accommodate such decisions. Therefore, there was a felt need to establish a comprehensive land policy to guide land ownership, land tenure rights, access to land, land use and management, and to resolve recurring land conflicts (URT, 1995).

The process to formulate the land policy began in 1990 when an inter Ministerial Steering Committee was formed. It drew members from (a) Ministries responsible for: Agriculture and Livestock Development; Water Energy and Mineral Resources; Tourism, Natural Resources and

Environment; Lands, Housing and Urban Development; (b) Institute of Resources Assessment of the University of Dar es Salaam; National Land Use Planning Commission; National Environment Management Council; Attorney General's Chambers; and the Planning Commission. The Committee was assigned to make recommendations for the preparation of a National Land Policy which would take into account social and economic changes that had taken place since Tanzania attained independence in 1961. The report of the Committee led to the appointment of the Presidential Commission of Inquiry into Land Matters. The Commission was required to hear complaints from the public on land matters and to make recommendations for solutions, review land laws then in force, identify the main principles that would be built into a National Land Policy and recommend a desirable land tenure structure including its institutional structure and legal framework (URT, 1994).

The Commission visited districts on Mainland Tanzania and held consultations with the public and institutions. It also solicited written memoranda from (a) land sector and related experts, (b) members of the public through the media, (c) individuals and institutions, and (d) assigned local researchers and experts to conduct studies on selected topics. Furthermore, the Commission visited three African countries and one Asian country to learn and draw relevant lessons from their experiences (URT, 1994).

After receiving the report of the Commission, the Government analyzed it and caused further studies which involved external and local experts. Then the government prepared a paper which indicated the Commission's recommendations and the position of the government. It presented its paper at a two day National Workshop on Land Policy in Arusha Township from 27th-29th August 1991. After the National Workshop, the Government received additional comments and suggestions from the public and mass media. It considered and incorporated them into the final policy document. The Parliament endorsed the National Land Policy in June 1995 (URT, 1995, and The Guardian of January 30th, 2001).

When the National Land Policy was in place, the Government prepared a programme for its implementation. The most significant and involved part was the one on the formulation of the needed

process of legislation. The National Assembly enacted three new laws, namely; The Land Act No. 4 of 1999, The Village Land Act No. 5 of 1999, and The Land Disputes Courts Act No. 2 of 2002. Regulations for each of these laws were also made (URT, 2001).

Following successful legislation of the three Acts, the Ministry of Lands, Housing and Urban Development caused a study that culminated into Strategic Plan for Implementation of the Land Laws (SPILL). The strategic plan was designed to provide a broad framework for the implementation of the new laws (URT, 2005). SPILL aims at operationalising the new laws to achieve the Government's policy goals to streamline land delivery, enhance land tenure security, encourage optimal use of land and its resources, modernize agriculture, and reduce poverty, notably in rural areas where about 80% of the population lives.

It can therefore be noted that putting in place a land policy takes five distinct phases, namely; (a) problems/ issues identification, (b) design and formulation process, (c) legislative process that culminates into land laws based on the policy framework, (d) preparation of strategic plans for implementation of the laws, and (e) the translation of the strategies into perceived development. The land sector professionals are expected to efficiently and skillfully operationalise SPILL so that the goals envisaged in the laws can be achieved.

4.0 Salient Policy Features in Land Policies

In principle, there are no two country land policy documents that are identical. This is so because each policy aspires to address specific socio-economic cum political issues whose beginnings are different from country to country. There are, however, general issues which match although again they may differ in details. In this context, the examination of National Land Policies in Eastern and Southern Africa (Silayo, 2007(a)) reveals that there are common issues which may broadly be addressed. These issues are examined against a background model prepared by the European Union.

The guidelines that the European Union has prepared for the European donor community when dealing with developing countries are examined in detail and professional skill needs identified as they constitute a yardstick for loan issuances to developing countries. The European donor

community examines effectiveness of policy frameworks of countries in promoting democratic institutions at local and national levels as well as interventions built into the policy documents to suit a range of different settings. Specifically the following issues are covered: the way the policy addresses poverty alleviation, human rights and social justice, gender equality, agricultural development, conflicts and post conflict recovery, land administration and governance, local government and decentralization, land taxation, environment and land use planning (EU, 2004).

5.0 Professional Skill Needs in Implementing Land Policies

Based on the foregoing, this section discusses the issues that are necessary for feasible NLPs and identifies, *in situ*, the professional skills needed.

(1) Public Awareness about NLP

The identification of problems/issues or the need for a policy is usually an action by the government responding to public plea. The design and the formulation process involves professional inputs. At this stage, the land sector professionals, both in public and private sector services, cooperating with counterpart professionals allied to land matters are expected to participate proactively in the consultative discussions and public debates with the view to clarifying, modifying or changing the issues elaborated in the policy proposal. Professional associations should initiate and spearhead discussions on public seminars and workshops on topical issues in the draft proposals in order to broaden and strengthen the public debate among all stakeholders. The debate should reach as many people as possible in order to build ownership of the policy among the community who are the main stakeholders. A policy that is well understood by all stakeholders becomes easy to implement.

The professionals have, therefore, to display competence in this. To do so they have to carry out research on various issues so that they can present reliable information and implementable proposals which add value to the debate and policy formulation process.

(2) Land Rights Delivery in Support of Poverty Alleviation

The majority of poor people in developing countries lives in rural areas (EU, 2004) and

depends on the land for livelihoods. In Tanzania, about 80% of the total population does so. Therefore secured and increased access to land and natural resources for the landless and land-poor families is a key means of achieving food security and broadening the economic opportunities available to them. For the urban poor, access to planned, surveyed and serviced land parcels assures them of decent shelter and access to investment credit through pledging of the parcels and buildings thereon as collaterals.

In Tanzania, absence of readily available planned, surveyed and serviced plots continues to be an outcry of those who wish to build homes in urban centres (URT, 2005). Availability of such plots supports orderly urban development.

Professionals are the actors whose job is to deliver land rights to land seekers. Acting impartially and equitably, without bias or corruptive tendencies, land rights allocation can be done expeditiously and at low-cost. By this way professionals will have contributed significantly to investment and development initiatives that will alleviate poverty.

(3) Human Rights and Social Justice

In various countries, there are groups of people who are potentially marginalized because of historical past. Such people include the indigenous minority groups such as the San in Namibia, the Watindiga and Wahadzabe in Tanzania, the Aborigines in Australia, etc. as well as orphans, widows and the landless poor. These groups may easily be forgotten as they will most likely not be represented at any discussion groups or debate. They need some representation. Professionals may take the challenge and represent the land rights of such groups at various levels of policy formulation and implementation.

(4) Attaining Gender Equality Through Public Awareness of Land Laws

Equitable access to land rights through statutory mechanism is a straight forward matter. Indeed, all the eight Eastern and Southern African land policy documents examined (Silayo, 2007(a)); express full support that women should have equal opportunity as men to access to land rights. This augurs well with paragraph 7(d) of the World Summit on Sustainable Development (Johannesburg, 2002), which reaffirmed governments' commitment to promote women's equal access to land and their full participation in decision making. Zambia

(2006) goes further to propose a special 30% concession to women. Seemingly this is in conformity with the Southern African Development Community Gender Development Declaration 1997 which commits governments to have at least 30% of the positions in political and decision making structures held by women by the year 2005. Women access to customary land rights through inheritance is, however, still a land rights issue that seems to need further attention and action.

In the past, customary tenure systems ensured that communities did not have landless people, including women, orphans and the disabled. The invasion of the Western civilization into the traditional African cultures, for instance, has undermined many of the African customary values on access and use of land. Customary land right ownerships are being transformed from communal ownerships to individual titles. Because of this change, those who were dependent on the customary practices to fend for them have to change as well. Society has to help them. Women have therefore the right to get equal opportunity to customary land rights just as men do.

The land sector professional associations are the ones closest to the land administration question. They should use that opportunity to articulate strategies to introduce the land rights issue in school curricula so that future generations do not find themselves in the present situation in which some sections of society are being denied their birth land rights mainly because of ignorance. The Government of Tanzania intends to introduce land tenure issues into school curricula and conduct special programme for public education and awareness about the new land laws (URT, 2005).

(5) Large Scale Agriculture and Land Grabbing

Large scale agriculture needs a clarified land tenure security prior to investment. Allocation of land rights tenure can only be possible through the functions of land boundary adjudication, demarcation, survey, registration and titling. Large scale investors have many options. Those who have opted to get into agriculture should be embraced and motivated to proceed with their investment intentions. Professionals can play a significant role by undertaking the necessary functions expeditiously and at low cost.

Large scale farmers can be a potential cause of troubles too. They tend to be land grabbers or hoarders, acquiring far more land than they currently

need. For example, they may grab large pieces of land without due regard for the land requirements of neighbouring villagers. They may also buy up neighbouring small landholdings, usually from poor owners, thereby denying the poor possession of this resource which is their only source of pride, prosperity and security. In the long run, such actions increase poverty, create rural landlessness and foment social unrest and lawlessness.

Professionals should advise governments (village, local and central) on how best to prevent land grabbing from happening. In places where this has already occurred, land reform approaches should be conceived as soon as possible.

To protect land rights of the rural population, majority of whom are poor, the Government of Tanzania has been undertaking Village Boundary Surveys for the purpose of titling of all the village lands. There are presently about 13,000 villages in Tanzania of which 8,104 have already been surveyed and titled (Daily News of 1st October 2007, Dar es Salaam).

(6) Conflicts and Post Conflict Recovery

Land being a scarce source of wealth is always in high demand. Historical inequalities or increased land scarcity can have far reaching impacts on social peace (World Bank, 2003, and EU, 2004). Increasing scarcity of land in the presence of high rates of population growth, possibly with a historical legacy of discrimination and highly unequal land access, implies that many historical and contemporary conflicts have their roots in struggles over land. This suggests a special role for land policy in many post conflict settings (World Bank, 2003).

The causes of land conflicts in Eastern and Southern African countries include:

- (a) Unequal access to land, usually by a few while the majority remains without land. The few include government officials in power, the very officials responsible for land delivery, the rich, the elite and others connected to these categories. Often such people grab land in both urban and/or rural areas through corrupt practices and/or unregulated land markets that operate to the disadvantage of the poor/disadvantaged landholders.
- (b) Landholders are not aware about the land policy or the laws and regulations governing

land rights, land tenure, land use, land value, responsibilities, and restrictions.

- (c) Absentee landlords who control huge tracts of land.
- (d) Large scale farmers grabbing land that belongs to the minority tribes.
- (e) Improper adjudication at the time of initial registration.
- (f) Delayed or non-delivery of land services including inadequate good land governance practices.
- (g) Ethnic conflicts over land.
- (h) In the case of post-conflict areas, such as in Rwanda (2005) returning refugees find the land they previously occupied has been taken over by others.
- (i) The conventional judicial system does not seem to be doing well with regard to resolving land conflicts as court cases take too long (over 20 years!) to be resolved (URT, 1995, and URT, 2005); etc. Events in Mozambique and Ethiopia suggest that deployment of local land tribunals offers quick solutions in post conflict areas. After signing the peace agreement, the Government of Mozambique relied on informal local institutions to quickly mediate and resolve the conflicts that emerged during resettlement of its population. Similar success was also recorded in Ethiopia to resettle demobilized soldiers (World Bank, 2003). In both these examples, the success of the operations depended on the speed of the dispute resolution mechanism and subsequent resettlement.

The potential causes of land conflicts identified above may be happening in a country because of lack of guiding principles in form of land policy and laws, or the government is simply part of the problem creation! What can the professionals do to mitigate such circumstances, which can break down to national insecurity?

Land based professionals should constantly monitor, predict and analyze national trends of the occurrences of all land related conflicts as soon as they occur. This can best be done by establishing a land administration research centre whose main area of concentration will be to conduct research on land matters; monitor and predict developments. This can reveal issues that are prejudicial to national security for timely intervention.

(7) Land Administration and Good Governance

Land Administration is a process of determining, recording and disseminating information about ownership, value and use of land, when implementing land management policies (UN/ECE, 1996). Based on van der Molen's (2006) interpretation, the functions of land administration system can be to: determine (data acquisition through the process of adjudication and cadastral surveying), record, and disseminate (distribution or make available) information (meaningful data) about ownership (man-land relationship, title to land), value (monetary worthiness) and use of land (as zoned by physical planning). As land administration is a multidisciplinary activity, the joint efforts of social scientists, lawyers, land surveyors, process and logistic professionals, business administrators and Information Technology experts is required (van der Molen, 2006).

At the time of policy formulation and legislative processes, professionals should ensure that clauses that give discretion to land delivery officials are not included in the legislation or in the regulations. Discretionary authority held by government officials, traditional authorities or elected council members offers room for patronage and rent-seeking (EU, 2004) and thus encourage bribery, fraud and corruption. Land sector professionals ought to be in the forefront to understand, prevent and fight these vices. Furthermore, professionals should observe transparency in policy formulation and implementation; participate with local communities in policy implementation and be accountable for their advice and deeds.

For land administration to deliver the desired services successfully, all the key professionals need to cooperate and work together as a team; for instance through exchange of inter-departmental notes and programmes, holding regular meetings, focused discussions, etc. Members of the public will be able to facilitate implementation of land administration functions if they are aware about the requirements of the laws and regulations that land administration administers. The professionals could therefore work together with governments to conduct public education and awareness about land tenure rights, land use, land value, responsibilities, restrictions and legal options on resolution of disputes and conflicts. Specifically:

- a) Spatial planners should deliver development plans in time, constantly monitor and take prompt action on any land development that is contrary to plans.
- b) Land surveyors should avail suitable topographic maps needed for land use planning. They should also conceive innovative approaches to demarcating, surveying and mapping to deliver the maps/plans needed for land registration and titling efficiently and at low cost.
- c) Valuers should make impartial and transparent property value assessments for equitable taxation.
- d) Land officers should allocate land parcels fairly, equitably and transparently to potential land developers.
- e) Information technology experts are expected to avail timely and accurate information about land right records, land development, etc; and
- f) Registrars of titles are expected to be efficient in delivery of land rights efficiently while observing principles of good land governance.

(8) Decentralization and Capacity Development

Decentralization transfers management responsibilities to district and local community authorities so that these authorities become more accountable on the management of the resources in their jurisdiction. The professionals, working with these authorities, should deliver advisory services that will enable the authorities to better manage the resources sustainably and in accordance with the directions of National Land Policies.

Silayo (2007(a)) noted that land administration, (notably in cadastral surveying and land registration), in Eastern and Southern Africa has not been able to register appreciable number of land parcels due to inadequacy or lack of capacity. Decentralization of land administration and management functions to districts and lower levels can thus be seen to demand more human, institutional and organizational capacity than what already exists. Academic institutions offering studies in land administration disciplines, such as the Ardhi University, should team up with the Government and other stakeholders to establish a comprehensive capacity building programme in the land sector.

Through their associations, land sector professionals in industry, and academia should devise strategies for professional advancement and development in a bid to improve service delivery. For example, concepts in land tenure, land administration, land use planning and management, Information Communication Technology (ICT), etc. could be included in the academic curricula for all the land sector professionals. Furthermore, during their undergraduate studies the land sector students could be made to share these concepts through joint or common year(s) of study. This may be done so in geomatics (land surveying), real estate, land use planning and management, and ICT programmes (Silayo, 2002). This approach will improve networking and facilitate spirit of teamwork among the professionals when in both academia and industry.

(9) Land Taxation

Taxes on Land are a source of revenue to governments. The issues associated with tax collection are identification, assessment and collection (World Bank, 2003). Identification is achieved through a fiscal cadastre that contains a description of each property, a definition of its boundaries, names and addresses of land owners and the values of land parcels and improvements thereon. From this the role of the land sector professionals can be discerned:

- a) The land surveyors surveying the land parcel boundaries.
- b) The valuation surveyors determining the land and property values; and
- c) The land registrars certifying land ownership.

Valuation surveyors are the authorities in determining land and property values which constitute the basis of land and property tax. Konyimbih (1996) observes that the analysis and conclusions as to value will continue to depend on the reliability, judgment and integrity of individual valuers. Mundeme (2002) notes that due care must be exercised when compiling valuation report as the report is both a professional and a legal document. It would therefore be expected that valuation fieldwork and reports have measures built into them to ensure transparency and impartiality so that tax rates on land and properties can also be fair and equitable. But this is not always the case. Some valuation reports simply give 'opinion of value' without any indication of

the calculations showing how the declared values were arrived at (Silayo, 2004). Doing so mystifies the so called 'opinion of value' used by valuation surveyors. The reliability, judgment and integrity of individual valuers need to be harmonized such as through the valuers' educational system and professional practices. The need for impartiality and transparency becomes increasingly relevant in valuations for compensation and mortgage where property owners are known to have influenced inflation of values presented by valuers (ibid.).

(10) Protection of the Environment

Land policy has a role in preventing environmental degradation and its social and economic costs (EU, 2004). This can be done through sustainable utilization of natural resources. Using research findings (knowledge) professionals should be able to guide the policy formulation process as well as the legislative process and the formulation of strategies for implementing the laws by providing advisory services on among others:

- (a) The need to clearly define limits of ecological areas such as forest reserves, national parks, community open spaces, etc.
- (b) Governments working in collaboration with communities to set rules for the conservation of water sources, beaches, forest reserves, etc.
- (c) Governments agreeing with indigenous communities on participatory approaches and shared use of natural resources.
- (d) Governments taking action against land degradation due to soil pollution, overgrazing, deforestation, farming in wetlands, quarrying close to or within residential areas, etc.

The relevant question here may be asked thus: How often have professionals given a serious thought about environmental protection and conservation in the course of discharging their duties?

(11) Land Use and Environmental Planning

Population explosion has a number of ramifications. For example, in urban areas it causes urban sprawl resulting in many informal settlements/slums. Already in sub Saharan Africa, 72% of urban population lives in slums²⁵. Noting that people living in slums have a right to be in the city and that this recognition will begin to make slum dwellers legitimate citizens which will start to legalize their tenure, van der Molen (2006) underscores that UN-Habitat encourages

²⁵ www.dfid.gov.uk/mdg/slumdwellersfactsheet.asp accessed July 2007.

innovative approaches to land management and land administration. In addition to land use planning, control and implementation of plans ahead of development as a measure to prevent growth of new slums, professionals need to ask themselves: What is the role that they should take to conceive innovations that can be implemented to upgrade the existing situations in slum areas?

In rural areas, population explosion causes;

- (a) Devastation of forests through wanton cutting of trees for charcoal, firewood and farming,
- (b) Depletion of wildlife; and
- (c) Degradation of soils.

Professionals may advise governments to:

- Define protected areas and establish surveillance on encroachments.
- Collaborate with communities to establish areas for refugee settlements, where relevant.
- Empower local communities to manage natural resources with permission to have limited/controlled harvest from the resources; etc.

Land use planning and management of the environment relies on accurate information. Incorrect information can be a cause of faulty decisions which may be very costly to rectify. So improvement on efficient acquisition and timely production of geo-information is essential for land use planning purposes. The application of modern technology may be quite rewarding in this aspect.

(12) Being Proactive in Contemporary, Non-land Issues

In any country there may be many policy issues that may emerge for implementation at local, national, regional or global levels. Some of them may seem to be remote from the land sector issues. But subsequently they may, nonetheless, have connectivity with land matters. So land sector professionals should always find out, at an early stage, how they may be affected by emerging contemporary non-land issues that governments plan to have done in order to make the necessary interventions.

6.0 Attributes that Facilitate Acquisition of Skills

Based on professional inputs into the implementation of various issues in National Land

Policies, some qualities are essential to facilitate acquisition of the professional skills. They include sound academic qualifications and achievements, proven work experience/competence, application of innovation, flexibility to adopt new technologies, capacity building, belonging to professional associations, cooperation and teamwork spirit.

(1) Sound Academic Qualification

A sound academic qualification provides an entry into any profession. Many professional societies/associations demand that their members possess at least a Bachelor's Degree qualification (or its equivalent) from a recognized university/institution. This is essential for professional development and advancement of the profession.

(2) Professional Competence

Professional competence is the ability/quality of being qualified or knowledgeable to do something well in a given field of occupation/ career. Such ability is acquired through working experience got after the attainment of the basic academic qualification, and attending various forms of seminars, workshops, conferences, training, etc. It is the onus of professionals to identify themselves as knowledgeable experts in their fields of specialization. They are expected to do so through delivery of professional services. High quality services, efficiently delivered within set deadlines promote trust and professional integrity before the public.

(3) Professional Ethics

A code of ethics and professional conduct is a set of standards, rules, guidelines and values that govern and guide behaviour among professionals with the view to deterring wrong-doing and promote cooperation, honesty, integrity, responsiveness, impartiality, compliance with laws and regulations of a profession²⁶.

In the context of the foregoing conditions for professionalism, the public regards a land sector professional as a person that is trustworthy, a learned and knowledgeable person that is expected to act with integrity and in accordance with the ethical principles and adherence to the highest degree of objectivity. Based on this, many

²⁶ www.12manage.com/description_code_of_ethics.html accessed September 2007.

professional bodies have included in their constitutions clauses on code of ethics and admonishment for non-compliance.

Such Codes of Ethics provide the necessary framework of professional self regulation and behaviour when dealing with clients and colleagues within the profession. They guide professionals into attaining and improving quality of services and standardization of its products. Without adherence to the code of ethics, a profession will soon lose the trust of its clients, notably the public.

(4) Membership to Professional Associations cum Teamwork Spirit

To promote professional image and protect occurrences of unwanted individual behaviour that may tarnish the image of a profession, its members should form an association. The International Federation of Surveyors (FIG) presents four reasons for forming professional associations as being to:

- (a) unify the profession;
- (b) provide continuing professional development;
- (c) act on behalf of the profession; and
- (d) contribute to society's well being²⁶.

Through membership to professional associations, professionals acquire and share experiences on how to practice:

- i good governance through adherence to principles enshrined in their own constitution;
- ii accountability of the leaders and members;
- iii promotion of the spirit of networking so that professionals can work together, share resources;
- iv development of cohesion and unity amongst themselves;
- v promotion of transparency through supply of clear and credible information that helps members to get insights into various professional areas such as the state of the land market, the need to conduct public awareness education say about land policies, etc;
- vi enrichment and integration of ideas through group discussions and debates within their associations: The power of debates is aptly summarized by Horst (1995) who says: "Science advances when scientists disagree with each other, not when they all share the same point of view";

- vii establishment of standards of professionalism, education and code of conduct; and
- viii representation of the association in formal and informal forums; etc.

(5) Innovation

The Wikipedia dictionary²⁷ offers several definitions of this term. The one that fits well in this paper defines innovation as the process of making improvements by introducing something new. This has direct application in the implementation of land policies in various areas, including formalization of informal settlements, devising simple, reliable, cost effective and acceptable techniques for executing cadastral surveys, conceiving quick systems for land registration and titling, etc. Innovative professionals not only aim at efficient delivery of services but also have the potentials to develop their professions.

(6) Adoption of New Technologies

Many functions of the land sector disciplines, notably surveying and mapping as well as land information management, are technology driven. The use of modern technology such as Geographical Information Systems (GIS), Global Positioning System (GPS), Information Communication Technology (ICT), computerization of land records, etc. is essential to speed up data collection, processing, management and delivery of services to a wide range of users at low-cost. However, Lemmen (2006) notes that the World Bank and other international organizations see low-cost approaches as sometimes conflicting with ICT. But he quickly adds that such vision may be challenged, as low-cost approaches will probably require high technology. Land sector professionals ought to note this.

(7) Capacity Building

Capacity building may be considered as a process which includes acquisition of knowledge, skills and capability needed by an institution/community in its core activities to effectively manage change (Silayo, 2007(b)). Capacity building may be formal or informal. Formal capacity building is based on formal academic education and training, usually delivered in a class/lecture room environment. It includes education, research and various forms of training. Informal capacity

²⁷ <http://en.wikipedia.org/wiki/Innovation>, accessed August 2007

building is based on human contacts and relations such as networking, partnerships and cooperation, short courses, workshops and seminars, conferences, continuing professional education, study tours, visits, consultancy services, in service training, etc.

Professionals in land administration ought to continuously keep acquiring new knowledge through formal and informal channels so that they can cope with current technological challenges brought about by science and technology, contribute to innovations and inventions, and be effective in the delivery of timely, quality services at affordable cost.

7.0 Emerging Issues

This paper has reviewed the objectives and purposes for which land policies are made, and identified the necessary phases from policy initiation to the stage when the policies are translated into what was envisioned. In the process the land sector professional skill needs for successful policy formulation to implementation phases have been outlined. The discussion on the skill needs highlights the essence and synergy of establishing, developing and strengthening professional associations. Basically, the professional associations are needed to develop the land sector professions, their members through inculcating into them qualities which include development of teamwork spirit, good governance issues, and above all serve the public more efficiently. In particular, teamwork skills need to be emphasized because land development requires multiple skills which must be harmonized to achieve common objectives and goals. Moreover, teamwork spirit motivates ethical performances. Moreover, the professions will get recognition only if they prove to community that together, they owe the community a duty of care, are competent, efficient and deliver timely services to the community they serve.

In order to outline the applications of professional skills in land policy implementations, key issues in the policies have been discussed. Various role-play engagements have been identified for the land surveyor, the valuation surveyor, the physical planner, the land registrar, the land officer and the ICT experts, among others. The discussion is crowned by a call to adopt modern technologies in

the delivery of land services for effectiveness, efficiency and affordability.

8.0 Recommendations

The key stakeholders referred to in this paper include land sector and allied professionals, civil societies, members of the public, governments, and development partners. The identified recommendations, however, focus on the needed action by the land sector professionals.

The Land Sector Professionals:

- (1) Namely and allied professionals should develop mutual cooperation and partnerships so that clear, feasible land policies can be formulated and implemented to achieve the envisioned targets.
- (2) Should involve the communities they serve in a participatory way by conducting policy awareness as they deliver services.
- (3) Are urged to form strong associations to which membership shall be compulsory for all practitioners (i.e. professionals, new graduates and technicians) in the professions, and students aspiring to join the professions so as to improve the image of the professions and that of their members (through self regulation) and to be in a position to deliver high quality services.
- (4) Should make it mandatory for all their members to participate, on an annual basis, in at least one event that leads to acquisition of new skills/knowledge in their professions. Such events include attending workshops, conferences and short courses, writing and publishing of technical papers, etc.
- (5) Should adopt modern technologies in the acquisition of data, processing and prompt delivery of information and services.
- (6) Should be in the forefront to fight corruption as it denies the poor equitable access to land, delivery of land rights and services.
- (7) Are urged to advise governments to assist weak associations to raise funds for their local and international memberships and commitments as strong professional associations are an asset to the professions and their members, governments and the general communities.
- (8) Are encouraged to urge governments to establish in-country 'Land Administration

Centres' which shall undertake research and disseminate information about land policy, tenure, administration, use, planning and management issues so as to: (a) predict and prevent occurrences of land conflicts and growth of new slums, and (b) develop strategies to upgrade existing slums in urban areas, etc.

9.0 Appreciation

The comments suggested by Professor Alphonse Kyessi of Ardhi University on the draft of this paper are appreciated.

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Participatory Methodology for Planning of Peri Urban Land Use in Situ: The Case of Kibamba Dar Es Salaam

Nimrod Shitrael Mushi²⁸

ABSTRACT

The future is increasingly urban and inevitably so. Urbanisation is increasing at unprecedented rate in both Sub-Saharan Africa and developing world (UN Habitat, 1999). Alongside this rapid expansion comes the emergence of the peri-urban areas that are characterised of increasing intensification and co-existence of urban and rural areas, marked by dynamic flows of commodities, capital, natural resources, people and environmental pollution.

This paper describes a participatory planning methodology for the peri urban settlements in-situ. The methodology uses a variety of spatial imaging and information capture techniques to link different components of the peri urban processes' together, thereby providing a basis for reliability and replicability. This approach is based upon the appreciation that peri urban settlements are vibrant environments which require to be planned considering all its components.

At the same time the planning and management may require that some of the families be relocated internally or externally. The integrated spatial information systems described here provide the framework to support and merging these diverse needs. The process begins with obtaining latest satellite imagery which enables the planners to see a actual situation on the ground.

Key elements of the system comprise shack data, constraint factors, existing access and movement routes, existing properties and a detailed social and economic survey supported by on the ground corroboration analysis using GPS. The way in which this information is linked and utilised provides the basis for replicability in planning methodology for situ peri urban areas. Finally the overlays of this the different layers provide a basis for planners to propose a layout plan for discussion and implementation with stakeholders.

Key words: GIS, peri urban areas, urban planning, database management, property registration, map overlaying

1 Introduction

The rapid densification of peri-urban areas presents both opportunities and enormous challenges for urban and rural sustainability. Conflicts over land, water and tenure emerge namely: polluting industries, waste disposal, mining, construction and large scale cash crops all jockey for position with small scale agriculture and indigenous lands. This rapidly changing environment poses enormous challenges for the health and livelihoods of an increasing number of dis-enfranchised, poor and marginalized citizens who often lack access to basic health, water and sanitation services. These changes in the peri-urban environments also raise larger questions about the future and sustainability of our cities/towns Adell, G. (1999).

Despite an increased awareness of peri-urban transformations and a growing research demand, there is still little insight into the management approaches that will tackle the management of the land use in these areas, poverty alleviation and social justice alongside environmental integrity, and draw synergy from urban and rural relationships.

Peri-urban areas lie at the interface between urban and rural, in some form of transition from strictly rural to urban and are often places in crisis (Development Planning Unit (DPU) (2003). They commonly comprise a mixture of encroached farming land, older settlements surrounded by new developments, industrial sites and slums. These areas often form the immediate urban- rural interface, and may eventually evolve into cities of tomorrow (Allen A. Dávila, J. 2002, Mushi, N. 2003, Mushi, N. 2008).

Typically, these areas are outside the responsibility of city authorities and sometimes called grey areas. More than half the world's population lives in and

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around urban areas. In developing countries this proportion is higher and increasing. The impact that this growth has on food security, services, infrastructure and urban livelihoods needs to be understood and solutions found. Sub Saharan Africa is facing the greatest movement of people from rural to urban areas (UN Habitat, 1999). This movement unlike in Europe is not accompanied by provision of employment opportunities and as a result most of the people are settling in peri-urban areas (Choguill, C. L. 1991). The capacity of the responsible institutions in terms of human and financial resources is not adequate to provide the required services and infrastructure before people settle in peri urban areas. The planning of such areas thus demand more professional input in terms of knowledge, time, methodology, commitment and understanding.

They are the places where the greatest pressure on the natural resources, on poor people's livelihood strategies, on access to land, and on public amenities takes place (Rakodi, C. 1998, Payne, G. 2001). It is the place where the farming household and the urban migrant and/or slum dweller meet head on the former diversifying into more urban based livelihood strategies, the latter moving where new job opportunities are likely to be. Rural local authorities, who are responsible for managing peri-urban areas, lack both the capacity and the resources to manage their unplanned development; while urban governments are not necessarily keen to take them on. A Peri urban area has been defined differently by different people and groups in different regions. Below are some of the definitions:

- Peri-urban area in spatial context is defined as a zone around the built up area of a city, its perimeter or edge, the 'rural-urban fringe' where city and country land uses overlap (Aslin et al, 2004, Abbott, J 1994, 2000),
- It is a zone of interaction between urban and rural socio-economic systems or a transition zone between fully urbanized land in cities and areas in predominantly agricultural use / mixed land uses and indeterminate inner and outer boundaries or a zone of rapid economic and social structural change (Rakodi, 1998 cited in Adell, 1999).
- It is the space into which the town extends as the process of dispersion operates an area with distinctive characteristics which is only partly assimilated into the growing urban complex, which is still partly rural and where many of

the residents live in the country but are not socially and economically of it (Adell, 1999).

- It is ill defined as unrecognized and unregularized zone that has become a major hub of European Development, but is also a source of social inequality and where a land is wasted (Fagergren, C: 2000).
- An "uneasy, phenomenon usually characterized by the loss of rural aspects (like fertile soil, agricultural land, natural landscape) or the lack of urban attributes (such as services and infrastructure)" (Allen, 2003).

This paper has no intention of assessing the success or failure of different definitions of the peri-urban to account for the phenomenon. It needs to be kept in mind that all definitions are constructed; they can never be a map that entirely covers its territory at a one-to-one scale, in four dimensions and full technicolor.

2. Recent approaches in peri urban planning

Current approaches to peri urban planning fall into one of the two broad categories. The more common approach in Anglophone countries is that which evolved in countries such as Sri Lanka (e.g. Pathirana & Sheng, 1992), India (Ableson, 1996; Asthana, 1994), Pakistan (Environment and Urbanisation, 1995; Hasan & Vaidya, 1986) and Tanzania Infrastructure provision in informal settlements, (Kyessi A. 2002). These focus very much on upgrading and tend to operate on a sector basis.

In Tanzania, there has never been a comprehensive approach to upgrading of existing unplanned areas nor planning of the peri urban areas (Kombe, 2000). Past upgrading attempts have been sporadic and narrow. Major upgrading in Manzese and Mtoni Tandika areas in the 1970s and 1980s was supported by the World Bank as part of the Sites and Services and Squatter Upgrading Schemes. By the 1990s, as a result of maintenance neglect, the upgraded infrastructure had deteriorated and required a re-upgrade. Almost 20 years after the initial upgrading, the Community Infrastructure Upgrading Programme (CIUP) funded by the World Bank was launched in 2005. Despite its coverage of 31 settlements in Phases 1 and 2 (2005-2011), the bulk of unplanned and unserved areas still need to be upgraded.

To be precise, all the past attempts seek to address a specific need (e.g. water supply or housing) and

do not seek to map out a long-term plan for the settlement. This approach works reasonably well in very poor areas, where there is little chance of achieving more than the provision of basic needs and where there is little or no relocation of existing dwellings. In this approach, the spatial relationship between the dwellings is kept unchanged. This approach does not really change the status of the peri urban area nor does it provide additional benefit to the residents.

This second approach was pioneered in de-Soto in Brazil, and is now the dominant approach in Latin America and has also been applied in African countries Tanzania included. This approach is based more upon the principle of formalizing the property than upon sectoral improvement. De-Soto (2000) maintains that capitalism has triumphed in the developed world and by implication making them rich because every asset every piece of land, every house, every chattel is registered. He however notes that most poor people in the third world posses dead capital (property that is unregistered) and that is why they are unable to create wealth. He carried out a survey of five Third World cities (Cairo, Lima, Mexico City and Port-au-Prince) to determine the value of landed property or real estate (land and/or buildings), which has been locked out of the capitalized economy due to non-registration of title. According to him, the value of a building is ascertained by simply surveying the cost of building materials and observing the selling prices of comparable buildings.

De-Soto asserts that most people's resources are commercially and financially invisible. Nobody really knows who owns what and where, who is accountable for the performance of obligations, who is responsible for losses and fraud, and what mechanisms are available to enforce payment for services and goods delivered. Consequently, most potential assets in these countries have not been identified or realised. There is little accessible capital and the exchange economy is constrained and slow-moving.

Findings from applying de-Soto's approach in developing countries were not in support of his arguments. The conclusion here appears to be that de-Soto's ideas cannot work because, for social reasons, people will not participate in the market even if they are granted formal property rights. Another major issue is that there is widespread aversion to the use of land as collateral. According

to the book *The Mystery of Capital* (p. 147) land tenure regularisation is supposed to facilitate access to finance but the plot holders in all the three countries were reluctant to pledge title deeds in case they lost their land.

The truth is that banks consider and evaluate both the quality and location of the property to be used as collateral. Financial institutions are not interested in poorly constructed properties that are not accessible for mortgage purposes because they are susceptible to weather or environmental conditions and also not durable. It must be noted however that a finding of risk aversion to mortgages is not the same as finding that formal credit is not beneficial to poverty alleviation efforts (Antwi and Adams, 2003; Gough and Yankson, 2000; Kironde, 2000; Payne, 1997).

2.1 The approach explained

The approach sought to combine two elements of planning. The first was an understanding of community needs, which provided the social basis for development within a settlement. The second was the adaptation of a new mapping tool, the GIS property demarcation tool. These were combined into an integrated urban planning system, which was known as Visual Settlement Planning (VSP). In essence, VSP created a settlement analysis for the development of the peri-urban area based upon the principle of minimum relocation. It required work to map all properties on all facets of the settlement to take place simultaneously. It also required negotiating with property owners to come to agreement. This negotiation was given a kick start by political leaders at regional and district levels. This serves to minimize complains and build confidence to the property owners. In addition, where relocation was inevitable there state compensation should be mobilized. And finally, the system uses a strong social support system of community social and development workers to liaise between government and community namely mtaa leaders and councilors.

In 2004, the project was started in Dar es Salaam with the objective of establishing a satellite town to decongest the city of Dar es Salaam. It began first as a desk study and sensitization at Regional and District levels. The net result was that the project was carried out with a consciousness of a much more open view of what constituted peri-urban planning, and an approach that sought to draw benefits from both the entire city and the Luguruni

and Kibamba residents. The result was a methodology that, while still GIS-based, followed more of a middle path between the two extremes outlined above. It is this methodology that is discussed here.

Description of the planning methodology As mentioned earlier, the approach taken was one that sought to find a balance between the de-Soto adhoc formalization and the sectoral development. This method appreciates that peri urban settlements are multifunctional environments; hence any attempt to plan these areas in a sustainable manner has to recognize and support this multi-functionality. This means working on all facets of development. At the same time, this has to be balanced by an implementation programme that is flexible, and which caters for a range of different affordability/expenditure patterns. The use of individual project or sector development within a multifunctional strategic approach is made possible through the use of a GIS-based operating environment. The starting point is an assembly of geo-spatial information, bearing in mind that this is now being collected to support a broad-based development. On this basis, the information gathered can be divided into three categories, as follows:

- i. Baseline data,
- ii. Demographic, social and organizational data, and
- iii. Spatial and physical data.

2.2 The baseline data

The collection of the base data represents the first change in thinking away from a conventional squatter upgrading approach. Here the focus shifts from the site (parcel) as the basic spatial unit (BSU) to the dwelling. This is what exists and it is this unit that will have information attached to it. This means that the cadastre is no longer central to the development process, a major change from current thinking. There are three components to the base data. The (fixed) cadastre is no longer the basis for development. Hence the development strategy will need to be based upon transient data. Similarly, because the BSU is now a physical feature, the data source will need to be spatial in type. This data source is a photographic/satellite image of the site. There are two image types available: satellite and aerial. In the initial stages it is not necessary to have high levels of accuracy in the positioning of the shacks. In the Luguruni and Kibamba project aerial photo was used and the satellite images were warped into position using an

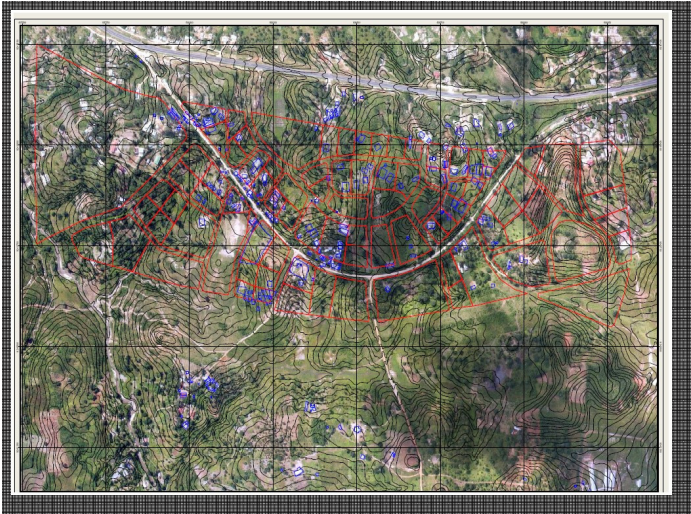
affixing process, with the reference points being taken from a 1996 in 1:50,000 aerial photograph. This was adequate for the first phase of the work, which was concerned with capturing demographic data. This type of image generation is cheap and rapid, which means that any house movement can be monitored and integrated.

2.3 Socio demographic data

This section presents a more fundamental input to peri urban areas. It was pointed out earlier in the paper that in situ peri urban planning covers all facets of development. The only common denominator running through all facets of peri urban planning is the community. Hence the second shift reflects a change in focus from the physical site to the people who are living on the area. From this it follows that an understanding of the community is central to the process. Such an understanding comes from information participatorily collected and logically interpreted. This in turn is derived from a combination data and intuitive analysis guided by experience. Effective integration of the two can only be achieved through spatial referencing of the data. In addition, once it is constructed in this way, the social database provides the framework for an interactive education process, between community and professionals, which operates in two directions. For the reason that each family is interviewed, this presents an opportunity for everyone to be informed of the project and to discuss it. This is a process that has enormous value in deepening the community participation process.

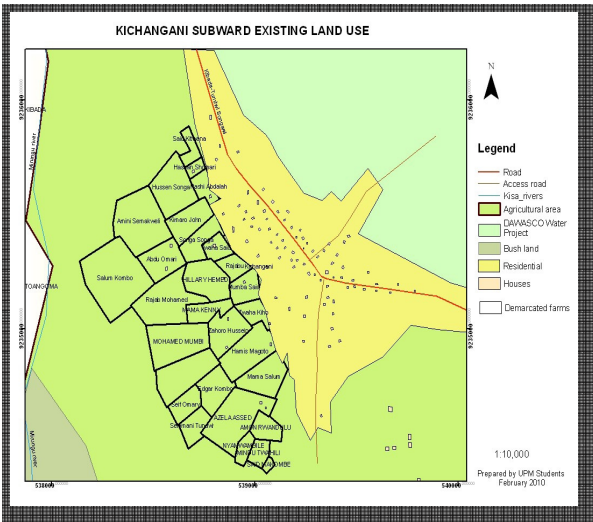
In addition, it allows the professionals to get to know the community on the ground and to obtain an understanding of the problems to be dealt with at first hand. Again this has immense value, particularly when it comes to defining and pooling land for social physical infrastructure needs and the relationship between people and levels of service. The database is organized into a number of categories, which cover the head of household, the spouse, children, and other residents. The information covers a basic profile of the individual, his/her residence in the area, linkages to other geographical areas, education, employment and skills. The information is linked to the property number, and this forms the linkage with the base data. The output from this second set of data then takes the form of a series of thematic maps, which portray the information spatially.

Map 1: Parceling of Luguruni/Kibamba periurban areas



Source: Field survey 2007

Map 2: Parceling of Individual property boundaries part of Kichangani sub ward



Source: Field survey 2007

Map 2 provides one example of this output. If you press one property it shows the gender distribution of the head of household and the structure of the household. Such a finding clearly has a major impact on the planning process. A second distribution provides a breakdown of employment. In this analysis employment has been divided into four categories: formal employment, informal employment inside the project area, informal employment outside project area and no recognized form of employment. In this case one can discern the percentages of formal employment versus informal employment.

It can be seen from this brief description that the survey represents a distinct shift away from the information gathering exercise associated with

random interviews. Nevertheless, it is important to recognize that this is only the base. The success of the project lies in the detail; in the ongoing involvement of community workers coupled with extensive and ongoing interaction; and most importantly in the extent to which the process empowers the community to take control of the wider upgrading process.

2.4 Spatial and physical data

The third area is the spatial analysis as it relates to spatial and physical data. The order of prioritizing this list is deliberate and reflects the reality of upgrading. It is recognized that most peri-urban areas are located on peripheral of the city, and that this will have a major impact of their planning. However, successful planning is impossible without community support. If the community is integrated into the process, then the constraints imposed by the physical environment can be accommodated. The impact of the physical environment is twofold. First comes the impact on individual families, i.e. which will have to be relocated (either internally or externally) due to the physical constraints imposed by the site? Second, what is going to be the impact of installing collective services by land pooling?

There are a number of factors that might require dwellings to be relocated. These are:

- a) Bad ground (this could be an unstable slope, a flood prone area or a fault in the underlying ground),
- b) Existing road reserves/rights of way,
- c) Competing claims for ownership,
- d) The need for pooling land for public or social services,
- e) The provision of access routes,
- f) Changes in the house clustering pattern, and
- g) Physical risk factors (e.g. flood-prone areas or geologically unstable sites), as well as cadastral constraints, requiring the relocation of individual shacks, is linked to the site and shack data.

Map 3 provides an example of the physical constraints identified for Luguruni. In this case the constraint derives from existing cadastral boundaries. The figure shows the impact of the existing site boundary (red lines) on shacks and also the impact of current servitudes (rights of way) (green lines).

Map 3: Physical constraints identified (site analysis)

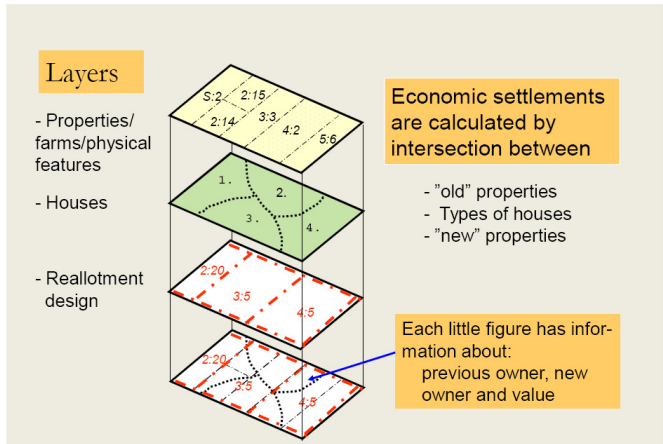


Source: Satellite image 2007

2.5 Overlaying the information to generate development structure

This section deals with the overlaying of the different information sets described above. It uses GIS analysis techniques of queries and buffers to arrive at key indicators. In its approach it represents the third shift from a traditional planning approach. For while the traditional approach creates a development from a blank sheet of paper, this approach uses elements that already exist, and whose details planning is built around the retention of social cohesion, the retention of the social capital base, an the maximizing of economic opportunities.

Figure 1: Overlay-techniques in Land Consolidation



Souce: Lake Victoria Environmental Assessment Report 2004

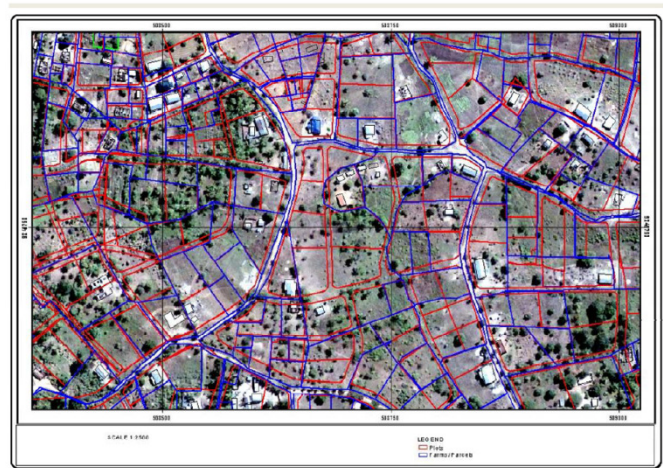
The setting of roads, cadastral boundaries and amenity areas divides the area naturally into blocks. The social survey data, integrated into a

participatory decision-making process, ensures that the factors described above are taken into account fully in planning the relocations. Once relocation has been agreed then the physical planning at a local level can begin. Here again, however, the process is very different to a conventional one. Planning at the level of the cell deals with the following components:

- Site planning and cadastral boundaries,
- Social services,
- Infrastructure provision,
- Improvement of the environment.

This is achieved through a GIS-based management system. Accommodating these diverse needs requires that there be overlaying of the different spatial activities using the GIS platform. All activity (e.g. spatial planning, infrastructure planning and design, housing and building development) therefore takes place within the same GIS environment. At the same time, it is important that the community plays a key role in decision-making, and this requires that the same GIS system be capable of providing a degree of interactive planning with members of the community.

Map 4: Final overlay map for Luguruni



Source: Kibamba data collection 2007-8

2.6 Conclusions and recommendations

This paper has proposed that geo-spatial information management is the key element in establishing a new planning paradigm appropriate to the development of peri urban areas. The methodology adopted has the objective of the creation of well managed and planned peri urban

areas. The spatially referenced management system is used to incorporate the different components of the environmental management process, to provide key management tool for development, and empower the local communities to make all key decisions.

The way in which the information is structured and spatially referenced is central to the achievement of the methodology. The core data set is that constructed around the existing dwellings, and it is kept as simple as possible. Linkages within the GIS environment are then used to overlay all other data with this data set. Starting this point data collection falls into two categories, one dealing with physical and spatial data and the other with social and economic data. These three data sets together then form the basis for all decision making.

The planning process that emerges from this approach differs significantly from that used to plan both informal and peri urban areas and new site developments. Firstly the basic spatial unit for referencing is the dwelling unit (property). Secondly, the whole emphasis moves from one where the site (the piece of land to be developed) dominates the process, to one where people and their needs dominate.

The remodeling of the site is submissive to the needs of the community. In the end, there is the issue of servicing the site. In the conventional approach services move out from the individual parcel, which is seen as the point of delivery. In this method a hierarchical approach is adopted, whereby people are grouped through a re-location exercise into smaller spatially defined sub-areas. The initial planning of infrastructure seeks to operate at a communal level to service these sub-areas, with the individual servicing of parcels coming later and being dependent upon a different set of affordability criteria.

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Compulsory Land Acquisition in Post War Sub-Saharan Africa: Some Lessons from Burundi

Cletus Ndjovu and Mr. Richard Manirakiza²⁹

Abstract

Gaining access to private lands in war-torn societies is a problem that confronts many governments, including Burundi when implementing public projects. Government officials hastily acquired private lands while implementing projects which are not always for public interests. Using the case study approach, the study explored what happened when land was acquired to erect a new Presidential Palace at Gasenyi area. Findings revealed that expropriation exercise produced serious tensions between the affected people and the government due to misunderstandings on the procedures used, expropriation speed, compensation rates used and the existence of substandard living conditions in the resettlement areas. The study requests governments in post-conflict situations to follow legal procedures, avoid hasty projects especially those involving private lands, sensitize and involve the affected people in the process, and invigorate the trust lost during the conflicts. APs ought to be properly educated, fairly treated and adequately informed on the aspects of the proposed land requiring projects. Where expropriation procedures are to be purposely hastened, these must have a legal backing and timely communicated. It is crucial to restore the lost trust resulting from the past abuses of power while limiting the possibility of igniting secondary conflicts through participatory measures in post war reconstruction process of which land expropriation is one of the critical components.

Keyword: Post-conflict land acquisition, Expropriation, Internal conflicts, Reconstruction

1. Introduction

Compulsory land acquisition has received a lot of attention (Almond and Plimmer, 1997) and continues to attract researchers worldwide because it touches the life of individuals, societies and governments. Despite its legal backing expropriation is prone to abuses by governments or acquiring authorities (Ndjovu, 2003). In war-torn societies, the process brings a lot of unanswered questions which precipitates severe misunderstandings among numerous parties and stakeholders involved including the governments. Although issues relating to post war land and property rights have received more attention recently than ever before (UN-Habitat/ UNHCR, 2004; Leckie, 2006) issues, like expropriation, remain inadequately addressed and highly contentious. Post war periods are usually fragile mostly due to the mistrust among the warring factions and the instability existing in the economic, political and legal structure of the societies and governments.

Most publications on post war peace building still ignore questions relating to housing, land and

property rights, and more specifically to those relating land administration (UN-Habitat, 2007). There is only a handful of such publications in post conflict situations (Unruh, 2008, 2009, 2011; Higgins, 2009; Wily, 2009; Zevenbergen and Burns, 2010; Todorovski, 2011) with little treatment on the expropriation cases. There is a gap in post conflict land expropriation information in countries emerging from wars or civil strife. Analyses in sub-Sahara African countries are inadequately done despite its potential role in their reconstruction and development. It is against this background that this paper explores land expropriation in post war Burundi, which experienced internal conflicts in 1980s and 1990s. Here the post war period refers to a period following the halting of main hostilities in an armed conflict to the point international aid begun to flow in. It is characterized by a reasonable degree of security after the signing of 2000 Arusha Peace and Reconciliation Agreement³⁰ extending to date. Although the signing of the said agreement between government and opposition

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³⁰ Arusha Peace and Reconciliation Agreement for Burundi is also called "Arusha Accords", signed on 28th of August, 2000.

political parts did not halt completely the war, it signaled the restoration of peace (FAO, 2005).

2. Background Information on Burundi

Burundi one of the poorest countries in the world, currently ranked as number 171 out of 175 countries in terms of Human Development Indicators is also a small landlocked country. It has a surface area of 27,840 square kilometers of which land mass occupies 25,680 sq km and water bodies occupy 2,160 sq km. Despite its poor economy, it is one of the most densely populated countries of Africa with an average density ranging from 230 to 278 inhabitants per sq. km. reaching a threshold of 360 people in some places. About 93% of its population lives in rural areas relying on agriculture for its livelihood. The UN Economic Commission for Africa estimated Burundi's population at 6.97 million people in 2000, growing at 2.5% p.a. so that by 2015 it would reach 10.37 million and 16.94 million by 2050.

Post independence history of Burundi is marred by civil war and poor governance. In addition to frequent attacks on civilians and general insecurity, particular instances of mass violence have resulted in the death and or displacement of many of its citizens. After years of internal conflict and distress, Burundi is now stabilizing and its economy is slowly picking up.

3. Expropriation Problems: An Overview

Acquisition of land through compulsory purchase does not consider land owners' willingness (Ndjovu, 2003) but must follow all legal procedures (Almond and Plimmer, 1997). Eminent domain powers helps to obtain land where owners are unwilling and could block developments desired by the society by refusing voluntary transfers of land or by claiming unrealistically high compensations (Viitanen *et al*, 2010a). However, as Keith *et al* (2008) noted, expropriation exercised during peaceful times are different from those exercised during emergencies. Extensive discussions of the peace time expropriation processes are found in FAO (2008), Labri (2008), Arvanitis (2008), Keith *et al* (2008),

Lei (2010), Viitanen *et al* (2010a), and Wallace (2010) and therefore are not covered here.

For countries in post war period, expropriation is inevitable to meet essential activities for country re-construction. Such acquisitions ought to be exercised carefully because following wars or conflicts, people lose hope and trust, and therefore confidence restoration among war victims is critical. Due to this, land issues become urgent, sensitive and complex in post war societies sometimes provoking secondary conflicts³¹ during the reconstruction processes (Lewis 2004; Unruh 2008). It is for this reason that land acquisition process in post war situations necessitates concrete strategies which would help to satisfy the aspirations of the project affected persons (APs). According to the Constitution of the Republic of Burundi, Land Code of Burundi of 1986 and the Ministerial Order No. 720/CAB/304/2008 03/20/2008, persons negatively affected by expropriation ought to be compensated.

4. Land Acquisitions in Pre and Post 2011 Land Code Period

During the civil war and the pre 2011 period, the Government of Burundi was accused of abusing its powers when expropriating by allocating lands to powerful political and military leaders without paying adequate compensation to victims (Kamuni *et al*, 2005). Royal Tropical Institute (2011) observed that at the end of a typical long lasting civil war, demands for land by returning refugees usually compound problems caused by the longstanding misuse of land acquisition laws by state officials. During the Burundian war, local authorities resolved expropriations and compensations issues based on a mix of widely interpreted statutory and customary laws (Jooma, 2005; Kamuni *et al*, 2004; United States Department of State, 2009).

Recent post war publications in Africa focus on land rights, administration and tenure generally (Unruh, 2009, 2011; Wily, 2009), very few dwell on compulsory land acquisition process and

³¹ In *Habitat Debate*, Jean du Plessis (2003) defines "Secondary conflict" as any conflict arising following the war period. Land plays a key role in post conflict resolution and may lead to another conflict, called "secondary conflict".

challenges the affected countries face. Information on the expropriation process and malpractices during the war is very scanty (Manirumva, 2004; Suguru, 2004; Jooma, 2005; Manirakiza *et al.* 2007; Ntampaka 2008), and no in-depth investigation has been carried out on them, probably because people wanted to forget the past. The Government of Burundi faced a challenge of acquiring land for reconstruction and development projects after paying fair compensation to the reluctant people.

Post 2011 Land Code brought several noticeable changes. Before land was taken preliminary investigation identified the exact location and size, assessed project impacts, and APs participate before expropriation is permitted by the responsible Ministry which describes the purpose, process, important deadlines and owners' rights. An "*intention to acquire*" must be communicated to property owners through their local leaders and opinions and claims submitted before projects are implemented. Valuation Commission is responsible for identifying and assessing property values. Negotiation Commission was established to undertake value negotiations with unsatisfied APs before resettlement. The state becomes a legal land owner after physical possession is done as per expropriation notice after which appeals are allowed contesting aspects of the expropriation process. At times such appeals end up in restitution especially where the purpose for which the land was to be acquired is no longer relevant or the land was acquired on temporary basis.

5. Research Aims and Methodology

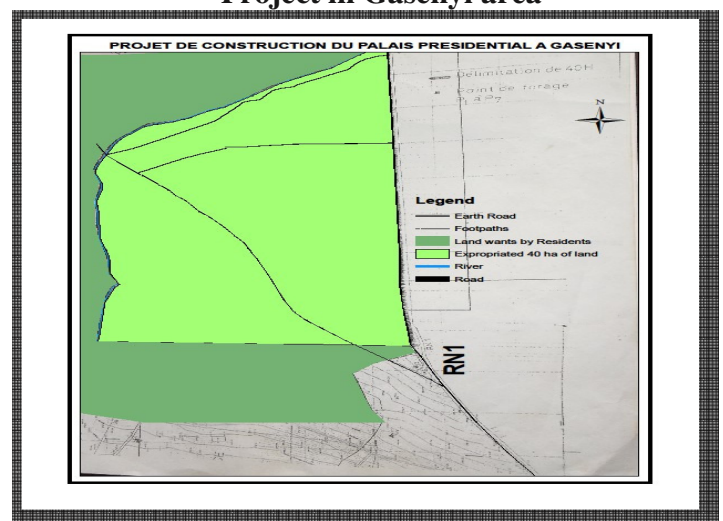
This research focused on land expropriation identified for construction of Burundi Presidential Palace at Gasenyi area, a case that had exposed problems and drew considerable interest. In this case speculations were many and compensation expectations were high, especially after the introduction of 2011 Land Code. However, dissatisfactions were similarly many and one wondered whether the newer code had helped to resolve the Gasenyi expropriation problems.

The research utilized interviews, group discussions and documentary analyses. It applied purposive and snowball sampling techniques using 64 respondents and other 6 officials from the Ministry of Lands, District and Zone offices and Gasenyi Hill Ten-Cell leaders who were also affected. It

also included 6 people living around Gasenyi for providing supplementary information. Qualitative data collected was thereafter analyzed using explanation building and data synthesis comparing it with information gathered from other sources.

Administratively, Burundi is divided into provinces, districts, zones, and hills. Gasenyi Hill is located in Mutimbuzi District within Bujumbura Rural Province about 19 km South-East of Bujumbura. Map 1 shows part of Gasenyi where the 40 hectares of land were expropriated for Presidential Palace Project along Route Nationale 1 (RN1) running northwards from Bujumbura to Kayanza.

Map 1: The 40 hectares for Presidential Palace Project in Gasenyi area



Source: Rubirizi Zone Counsellor Office (April, 2012)

6. Past Malpractices in Compulsory Land Acquisition

Since the 1962 independence, Burundi has been rocked by ethnic discrimination and civil strife. During this period of insecurity, expropriation malpractices were experienced as a result of poor governance. Studies by Jooma (2005), Kamuni *et al.* (2004) and USAID (2011) revealed that abuse of power during land expropriation was common, with land expropriated for public use often allocated to influential political and military elites without adequate compensation being paid. Local authorities justified these expropriations by using misinterpreted statutory and customary laws. While Provincial Governors allocated state lands

overseen by the Ministry of Environment without consultations, Ministries of Agriculture and that of Environment controlled allocation of the same.

Data collection revealed that procedural malpractices and non-payment of compensations were rampant during civil war. Land was expropriated without compensation and redistributed to unmerited people, aggravating disparity between rural poor and the elites. For the economically and politically weak, tenure insecurity was apparent, compelling them to cultivate erosion-prone hillsides and squat on government lands as confirmed by CED-CARITAS BURUNDI which reported openly (Van Leeuwen and Haartsen, 2005) as discussed below.

In 1981 a Reforestation programme initiated by *Institut Nationale pour la Conservation de Nature* expropriated lands with compensation promises which were never fulfilled. This project was later abandoned due to lack of compensation money, but the land acquired was not returned to its initial owners. In 1982, there was programme established called *Société Régionale de Développement Rumonge* aimed at modernizing the cultivation of oil palm trees in large parts of Imbo Plain. The programme expropriated private lands and redistributed it to army and SRD officers while former landowners who were promised adequate and fair compensations were never paid. In 1989, *Programme d'Intensification Agricole Rumonge-Burambi-Buyengero* under the Ministry of Agriculture was formulated aimed at improving the cultivation of subsistence crops. The programme expropriated private lands including those belonging to the exiled people, unfortunately APs were never consulted, informed or compensated. In 1991 this programme forcefully evicted, acquired and redistributed land to the returnees without compensating the original occupants. Similarly, the Burundi Villagization Schemes of mid 1980s which enabled local authorities to acquire land for resettling returning refugees paid no compensation to the affected.

7. Basic Reforms in the new Burundi Land Code of 2011

The new Land Code of 2011 was an outcome of efforts made by the government helped by non-government organizations. Based on the deficiencies of the 1986 Land Code, amendments to the newer code focused mainly on Articles 411 to 453.

The first issue addressed the removal of expropriation for individual benefits. Article 407 of Land Code of 1986 identified property rights, which could be expropriated for public purposes for the benefit of the State or any other person or entity with public or private rights, having a just and prior indemnity³². This old provision was amended by the removal of “private rights”³³ justified by the fact that public acquisition had to be for “public interest” only prohibiting previous misuse.

Secondly, the question of amicable negotiations was included in Article 423 of the new code allowing competent authorities to order expropriation and determination of the form of compensation payable. Article 424 allowed negotiated compensation payment during expropriation, to be undertaken amicably between interested parties through a competent jurisdiction, a process ought to be initiated by one of the interested parties. Despite being a negotiated option, this mode of land acquisition is symbolically regarded as compulsory purchase all the same, because it followed all the crucial steps necessary in determining compensation. In such cases, some minimum compensation amounts were fixed through joint Ministerial Decree after obtaining opinion of the National Commission for Land³³. Where an urgent acquisition is required, competent authority can order an eviction prior to compensation payment, though this is very seldom. Article 417 of the 1986 Land Code did not allow negotiations in expropriations done for the profit of the state, district, public establishment or society with public rights. Negotiations were only authorized if expropriation was for the profit of physical or moral person having private rights³⁴. In the 1986 code, cases involving urgent acquisitions, competent authorities were allowed to order prior eviction of the victims of expropriation notwithstanding any recourse or resort judicial³⁴. The new Land Code has amended this provision by removing “*notwithstanding any recourse judicial*” so as to allow legal proceedings to take place regardless of the urgency needed to implement the project. If misunderstandings occur, experts are identified to settle them, because the new Land

³² Article 407 of Land Code of 1986, translated from French by author, 2012

³³ See Article 411 of Land Code of 2011

³³ See Article 426 of the Land Code of 2011 ³⁴ See Article 418 of Land Code of 1986

³⁴ See Article 416 of Land Code of 1986

³⁶ See Land Code of 2011, Article 432

Code allows the jurisdiction to decide in the manner so identified³⁶.

Thirdly, the creation of commission to oversee expropriation matters was found to be crucial. The 2011 Land Code incorporated new articles i.e. 452 and 453 which created the National Commission for Land to assist Ministers in administering land issues and undertake evaluation of the politics of national lands. This commission provides advice and opinion on the issues related to concession or disposal of the public lands and expropriation for public interests. Fourthly, the Land Code of 2011 amended the five basic procedures of acquiring land contained in the older code. The articles were amended by substituting a stage of getting opinions of Provincial Committee for Expropriation by having the opinions of the National Commission for Land which had more responsibilities than the former Committee.

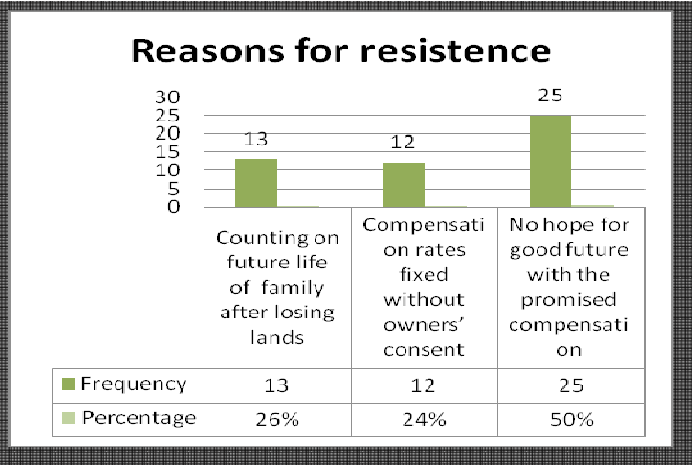
8. Acquisition of Land for the Presidential Palace at Gasenyi

This study investigated land expropriation at Gasenyi for establishing whether legal procedures were followed in acquiring private land for public purposes like the erection of a Presidential Palace. In 2010 Gasenyi presidential site was chosen out of five possible sites. From the interviews undertaken, it was apparent that the state had very elaborate procedures which were to be applied in this case.

Although citizens were said to have been involved in the process, numerous claims and discontents were aired. These expropriation claims were studied by the government but it was unfortunate that it did not stop the government from implementing the project then for it was regarded as urgent and was for public interest after all. About 50 persons interviewed in April 2012 had objected surrendering their lands to the government for various reasons as seen in Figure 1. Out of the 50 people interviewed, 25 respondents i.e., 50% refused to surrender their lands because compensation promised did not give them any hope of having a better home in the future while 13 of them i.e. 26% their resistance was based on the fact that their families which depended on land were losing their valuable ancestral lands for good. The remaining 12 respondents i.e. 24% argued that compensation rates fixed by the Government without their involvement were very small. It was clear that reasons given for such unforeseen

resistance emanated from lack of understanding on land acquisition procedures, determination of compensation rates and how and where alternative lands for resettlement was to be located and allocated.

Figure 1: Reasons for residents to resist surrendering their lands to the Government



Source: Field work (April, 2012)

Ministerial consent granted to the project on the recommendations of responsible authorities, made it possible for the prospective a developer to receive land acquisition permission certificate allowing property inspection and compensation determination. During valuation, plots and buildings were measured and perennial crops systematically counted by members of Technical Committee comprising of officials from the relevant ministries, before payment schedules were brought to the affected people for verification. These officials calculated compensations based on pre-determined rates fixed by the government. Land values were pegged at 2500 BIF per square metre rates applicable to Gasenyi land while rates for perennial crops, trees and buildings were pre-determined in the Ministerial Order.

Sometime in 2011 a few months after properties had been surveyed, valuation figures were readjusted from 2,850,300 Fbu and 2,690,100 Fbu³⁵ without giving reasons. Payments had to be received through identified banks starting with buildings but compensations for the rest of the assets have not been paid to date. Rates used to calculate these compensations were fixed in 2008 and its use was strongly criticized causing serious tension between the government and the affected

³⁵ This information is confirmed by one of the cards that the researcher got from the residents and no further evidences proving the information provided.

people because they were considered very outdated.

After partial compensation payment, the government sent tractors to clear the site only to be blocked by 90% of the residents because third party interests had not been resolved yet. Police force was deployed to supervise the exercise but after serious confrontation with the APs the exercise was halted had to stop for a while. In response, the Government requested residents to formulate Negotiations and Appeals Committees after the media had publicized and politicized the issues through local media.

Notwithstanding the unsettled compensation claims and the unsuccessful attempts to resolve the expropriation problems, the government proceeded with its proposed resettlement plan by allocating building plots to the affected people. People were unable to take over the plots for a number of reasons including their inability to build houses due to insufficient funds paid as partial compensation. Un-serviced plots allocated covering 250 sq. m. each were considered by APs as being smaller comparing with an average of 3000 sq. m. each one plots they initially owned. Moreover, these resettlement areas were disadvantaged by high water table which made construction works expensive. The APs argued that resettlement site was not thoroughly investigated nor appraised before the resettlement plan was hatched.

9. Findings and Discussions

This study has explored problems that face expropriation problems in a country that emerges from internal conflict and experiences both administrative and legal void and confusion. A number of issues have been observed which deserve brief discussion. General observations indicate that post independence Burundi leaders were, until recently, accused of power abuses whereby expropriated lands were largely allocated to influential persons or and military people, but also Burundians were least informed on expropriation laws and procedures and could rarely challenge these decisions made. Currently, property owners are more informed and are given chances, through the amendments in the 2011 Land Code, to air their discontent openly. However, it must be said that people's involvement in the expropriation process is still unsatisfactory because the government has been bulldozing people who

are half informed of their constitutional rights to compensation in cases of expropriation for public use. The experience of Gasenyi land acquisition project area clearly illustrates this predicament.

The Gasenyi people contended that during the expropriation exercise, they were not informed on time regarding what was to happen. It was not only after the public meeting conducted sometime in 2010 by the Minister of Environment, when they learnt for the first time that the decision to expropriate their lands had already been made. They were also unsatisfied with compensation rates which produced inadequate compensation, too small and insufficient to build a simple house. The APs had questioned the valuation exercise itself and government's basis of refusing to use 7,500 Fbu per sq. meter they had proposed but instead used 2,500 Fbu. There was a general feeling among all of them including their local leaders that they were being forcefully evicted because preparatory works had started before compensation claims had been properly settled. It was also noted that compensation calculation and plots allocations in resettlement areas, never considered the size of the displaced families. Regardless of the number of its members or the size of the plots they initially owned, families were allocated plots of the same size like everybody else. APs had their basic life style changed from rural to urban which they could hardly afford. It is for this reason that APs insisted on getting farm lands as compensation instead of building plots, because this would have guaranteed their rural lifestyle. Generally, it can be summarized that the APs are said to have not been consulted nor sensitized enough for which the Appeals Committee was completely ineffective in this.

Besides physical losses the APs were also subjected to mental torture. The affected people were shocked and psychologically confused when the decision to acquire their land was finally passed.³⁶ With certainty of receiving non-satisfactory compensation, most of them found it difficult to move to resettlement sites. The government on its side refused to accommodate them in nearby lands despite land owners' proposal. Government gesture in this was interpreted as signaling

³⁶ Based on an interview with one of the cell leaders Mr. Katenderi

the possibility of future acquisition of nearby lands surrounding the 40 acres acquired.³⁷ Many people at Gasenyi did not believe that the 40 acres would be developed for the intended use. Initially, it was only 10 acres that were to be acquired a request which was later on changed to 40 acres. It was believed that the acquired land was likely to be re-sold to some government officials, politicians, army officers and other influential people, as they did in the past.

Together with these misunderstandings and frequent appeals lodged, the government did not give APs a chance or time to be heard, discuss or negotiate controversial issues regarding the exercise. As a result of misunderstandings, residents did not accept the project because to them the project did not meet the minimum qualifications of an acceptable project indicated in Table 1. Although 27.3% of the people felt that it was important for the government to educate land owners so that proposed projects are accepted before they are embarked, in this case it did not. Secondly, projects which were likely to benefit the APs had a bigger chance of being accepted as indicated by 22.7% of interviewees. Thirdly, the question of adequacy of funds was also critical for the project to take off. It was stressed that no project should be allowed to take off if the funding arrangements were still unknown. The resettlement issue was considered positively by 11.4% only indicating how unimportant the issue was among the interviewees, probably because they could easily find alternative lands to resettle. Generally, APs were very unsatisfied with alternative lands given to them in the Maramvya area because they never participated in its identification, they desired bigger plots for growing crops comparing to smaller land parcels allocated but they had also noted high water table. Of the most important item for the government to consider in a typical expropriation programme, 54.5% of the APs observed that getting fair, adequate and prompt compensation on top of getting land nearer to their former residences were paramount.

Table 1: Possible Reasons For and Against Expropriation (advanced by Ex-Landowners)

Reason	Respondents	
	Count	Count
Government has alternative land	5	11.4

³⁷ Based in interview with Mr. Banderama, a resident in the acquired area

Project be acceptable by the community	12	27.3
Project ought to benefit the affected	10	22.7
Socio-economic Impact assessment be done before acquisition	8	18.2
Project must have adequate funds for compensation before it is embarked	9	20.4
Total	44	100

Source: Field work (April, 2012)

Since Gasenyi area was meant for palace construction, expectations were high although most of them were unmet, as seen in Table 1. About 86.3% of APs envisioned receiving land parcels next to the project area, dreams that were never realized. None of them expected to receive huge compensations except 36.3% only. The use of 2008 compensation rates in the Gasenyi expropriation exercise was a source of mistrust on the valuation outcome because they were grossly outdated and the use of market rates posed another problem because there was a general lack of reliable market transactions during the war period. Viitanen (2012) has also observed similar situations bringing serious misunderstandings. Despite having little hope on getting adequate compensation initially, 45.5% of the residents thought that they would get a chance to negotiate with the government regarding compensation payable, compensable items and compensation rates usable, which would have increased their overall compensation amounts. Respondents thought that if they were involved from the beginning, this could have improved their livelihoods and avert starvation that faced them by accepting unfair compensation.

Table 2: Residents Expectations on Expropriation

Expectations	Frequency	%
To receive adequate compensation	16	36.3
To be given land near the project area	38	86.3
To negotiate compensable items and compensation rates	20	45.5
Total	44	100

Source: Field work (April, 2012)

During the civil war Governors and local leaders made expropriation decisions without seeking advice from higher authorities or informing the land owners. The acquisition of the lands earmarked for the military forces or the internally displaced persons could not wait and hence done in a hurry and no could stop it. Lack of coordination between government departments and the residents led to misunderstandings and hard feelings. The APs ought to know about intended projects and be able to challenge them legally. These expropriations should not be rushed.

In response to the 2000 Arusha Accord which proposed serious reforms of the land laws and the 1986 code in particular, the Burundian government with the help of non-governmental organizations had worked really hard to introduce the much desired changes now reflected in the Land Code of 2011. Basic changes are found in the legal articles discussed above, where expropriation for public purposes excluded those done for the benefit of any other person or entity with private rights. The code introduced the possibilities of undertaking negotiations during compensation determination between interested parties and gave rights to the APs of participating in the determination of their compensation. Creation of new commissions to oversee all expropriation matters was a novel idea which was expected to disapprove unjustified projects aimed at expropriating peasants' lands with a public cause. It was expected that these changes would probably reduce complaints regarding the so called "unfair" compensation payments. It was expected with the 2011 Land Code in operation, the Gasenyi grievances would not have been there, but it was just the reverse and the tensions flared high.

Misunderstandings between APs and the government werre observed despite existence of Land Code 2011. When asked on the factors which caused these tensions, disagreement with the compensation rates was identified as the most critical issue by 26 respondents representing 59.1% of those interviewed as seen in Table 3. The affected residents wanted Fbu 7,500 per m² and not Fbu 2,500 per m² proposed by the government as per 2008 Ministerial Order. It was clear that government was not very keen in seeing that all the problems were

amicably resolved though some officials also complained that the APs were too demanding.

Table 3: Factors that accelerated tensions in Gasenyi case study

Factors	No. of respondents	%
Payment of Inadequate Compensation	8	18.2
Disagreement on compensation rates	26	59.1
Emotional attachment to land	10	22.7
Total	44	100

Source: Fieldwork (April, 2012)

Although efforts to improve the expropriation process and procedures in the post war period was evident, expropriation procedures were hardly followed. There was still unwarranted "speed" between various expropriation stages and sometime unwarranted "delays" between them, to the disappointment of the APs. Investigation reports pointed out that APs were not given enough time to express their views but instead the project was to be implemented in a hurry like previous war time projects. All of these rushed projects were said to be very important for the public and had to be implemented in zero time. This type of projects had more than often led to un-procedural processes and numerous irregularities with some basic expropriation stages being conveniently and intentionally skipped. Although the government had made these legal changes some of them were not being implemented. The communities traumatized by the war were still weary and suspicious of every government move and saw no difference between the two governments reigning in two different epochs.

10. Recommendations

Several issues have been raised in this paper that are aimed at ensuring that expropriation projects are successful in countries emerging from internal conflicts or have experienced expropriation malpractices like Burundi.

Compensation Packages Must Be Pre-Planned

In a country where the majority of its citizens depend on land for their livelihood, the question of

land is pivotal in its post war reconstruction initiatives. The Government should plan for “*supplementary compensation package*” for displaced people depending on how much they would be affected by the public programmes. As suggested by Zevenbergen and Molen (2004), it is good to learn from other countries undertaking post conflict development. Observations made in post-genocide Rwanda suggest that supplementary compensation packages are helpful. These initiatives could be achieved after carrying out a national socio-economic profile of the expropriated people in order to see how their livelihoods have been affected by such exercises and based on that supplementary compensation packages be paid. Usually, the post displacement survey helps to analyze the affected residents’ life after being displaced from their lands and establish victims’ needs in order to sustain their lives.

Post War Expropriation Must Be Done Cautiously

In post war countries, attempts to undertake expropriation must be undertaken cautiously. It must be borne in mind that most people become extremely sensitive and hence defensive in their character once war traumatized. Lack of trust which existed during civil wars or conflicts tends to creep in the period that follows. Having seen the tensions between victims of expropriation and the Government in Gasenyi, this study proposes ways of improving expropriation process in such situations, especially for the privately owned lands. It is crucial that enough time and adequate sensitization programmes are allowed and the process be undertaken by following the legal provisions at an accepted pace. No procedural step should be skipped for whatever reason unless sanctioned by the law. No stage should be undertaken unless a previous step has been totally accomplished. Basically, it must be said that “hasty” projects call for unwarranted suspicions and hence should not be entertained. Similarly, no activities should be carried out on lands so expropriated unless third party interests have been completely cleared and problems resolved. The study revealed that expropriation practices in post war period ought to follow established procedures as provided in law, as a measure of creating lost confidence.

In Burundi’s case, it was evident that challenges that were observed during the expropriation process were largely ignored by the government and its organs. It was thought that the government

could simply bulldoze the peasants in its favour due to its might. So, it is worth noting that challenges and frequent complaints in the post war expropriation are generally expected but should be considered resolved and taken on board before approving and implementing such projects. Acquiring authorities, including responsible governments and their agencies, should perceive emerging challenges positively as ways of perfecting such acquisitions and a rare opportunity to build lost confidence and trust among its citizens, rather than an impediment to the projects’ execution. Public involvement in addressing emerging land acquisition challenges is likely to change the negative image of expropriation projects especially when these projects are meant for the same people from which such lands are being acquired. If such projects are sensitive projects like oil or gas pipelines or electricity transmission lines, there is a greater chance of getting civil protection against possible saboteurs by involving APs and the general public than otherwise.

Political ought to be a pre-requisite for Post War Expropriation

Post war governments must have a political will to face land-related challenges especially those related to land acquisition because this could avert secondary conflicts. For the Burundian Government, it is clear that some articles of the Land Code 2011 are yet to be implemented effectively. With regard to out-dated compensation rates, it is important for governments to register transactions and keep database for future reference. Land Expropriation and Land Valuation Codes must be established separate from the mother Land Code which deals with general matters of land because compensation and livelihoods status after acquisition seem to be the main cause of residents’ resistance in expropriation. For projects to be implemented successfully, the government should synchronize between compensation levels and market rates. When new laws are introduced, these should be properly and timely communicated to the people in plain and simple language so as to successfully capture citizens’ awareness on issues relating to land and expropriation. Participatory techniques in acquisition and compensation negotiations ought to be encouraged at the early stages of project planning for will reduce unnecessary confrontations.

11. Conclusion

Exploration of the post-war expropriation practice indicated that civilians emerging from war traumatized situation are very shaky and suspicious of every move being made by the incumbent government. To them, land issues are critical especially where such conflicts had resulted into their displacement or where land had been taken over by politically or economically powerful people of the same government undertaking expropriation. During wars abuses of power are likely because some laws could either be suspended or become difficult to oversee. So, with relation to the land sector, it is not uncommon to find numerous malpractices particularly those involving expropriation. Procedural flaws are also to occur intentionally or not, and under payment of compensation could as well be done intentionally by people who benefit from this chaotic situation. All these malpractices provide clear recipe for complaints. Governments' efforts to normalize or redress the situation during war periods must be real and be able to deliver what the period of conflicts did not (Willy, 2009). No matter how good the post war government is, efforts to redress and revisit the maltreated cases must be effected and reforms made real. If one asked whether the reforms contained in the Land Code 2011 helped to resolve expropriation problems at Gasenyi, the answer is likely to be negative.

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Compulsory Acquisition Practices and the Determination of Compensation Payable in the Niger Delta

Victor A Akujuru and Les Ruddock

Abstract

The right to Compensation for the compulsory acquisition of real property is constitutional and most enabling laws prescribe valuation methods to be adopted in determining the compensation payable. This paper aims at ascertaining the implications of the constitutional provisions and its impact on the compensation payable. It reviews some legislation, prescribed compensation rates and a valuation report on the Obite- Ubeta- Rumuekpe (OUR) pipeline acquisition and analyses the valuation method used. When compared with internationally prescribed standards, the paper concludes that the compensation determined does not meet the compensation requirements of adequacy and that the use of predetermined compensation-rates corroborates the inadequate compensation determination. It recommends the adoption of valuation methods that indicate compensation sums that are equivalent to market realities.

Key Words: *Compulsory acquisition, Valuation methods, Compensation Rates and Adequate Compensation..*

1. Introduction:

Compulsory acquisition is the power of government to acquire private rights in land for a public purpose, without the willing consent of its owner or occupant (Keith, McAuslan et al. 2008). There are different definitions of this power depending on a country's legal traditions, including eminent domain, expropriation, takings and compulsory purchase. Irrespective of the description, compulsory acquisition is a critical development tool for governments, and for ensuring that land is available when needed for essential infrastructure. Although the compulsory acquisition power is deeply rooted in virtually all legal systems, the establishment of efficient and fair legal and institutional frameworks for exercising this power remains an unfinished business in many countries around the world (Lindsay 2012).

Land has been compulsorily acquired in Nigeria since the colonial era like in other countries, for the provision of public infrastructure like schools, hospitals, roads, railway tracks and other facilities. Since 1958, when crude oil deposits were first discovered in Oloibiri, the Niger Delta region has witnessed regular acquisition of land for oil prospecting and production purposes. Land acquisition in the region has also been performed by successive governments for use for public purposes, in addition to acquisition for oil exploration and production by International Oil Companies (IOCs) who have been vested with

powers of compulsory acquisition by relevant statutes. Compulsory acquisition being statutory relies on the statutory provisions for its procedures. National constitutions and laws typically refer to compulsory acquisition being used for "public purposes", for "public uses" and/or in the "public interest." In some jurisdictions, these terms have distinct if overlapping meanings. In other cases, these distinctions are blurred or non-existent. When it comes to defining public purposes, there is great diversity among national laws in the extent of specificity. In some countries, laws provide an itemized list of land uses that fall within the definition of public purpose. The major compulsory acquisition issues are the definition of public purpose; the extent to which private end-users of property should be allowed to be beneficiaries of compulsorily acquired land; issues surrounding the compensation for losses suffered when government or any acquiring authority acquires land compulsorily and the procedure adopted in effecting the acquisition. In this paper, emphasis will be focused on the determination of compensation for losses suffered.

2. International Conventions:

Several regions of the world subscribe to conventions on human rights to property and the protection of such rights. Some examples include

- a) The American Convention on Human Rights, adopted at the Inter-American Specialized Conference on Human Rights, San José, Costa Rica, 1969, (Article 21 Right to Property),

which states that: “1. Everyone has the right to the use and enjoyment of his property. The law may subordinate such use and enjoyment to the interest of society. 2. No one shall be deprived of his property except upon payment of just compensation, for reasons of public utility or social interest, and in the cases and according to the forms established by law.”

- b) The African Charter on Human and Peoples’ Rights, 1986: “Article 14. This provides that the right to property shall be guaranteed. It may only be encroached upon in the interest of public need or in the general interest of the community and in accordance with the provisions of appropriate laws.” “Article 21. 1. Provides that all peoples shall freely dispose of their wealth and natural resources. It further provides that in the case of spoliation, the dispossessed people shall have the right to the lawful recovery of its property as well as to an adequate compensation”.

The FAO-IFAD-ILO (2009), stated that though there is variation between countries, that the constitutions of many countries provide for both the protection of property rights and the power of the government to acquire land without the willing consent of the owner.

3. Compensation:

Several authors have justified compulsory acquisition of land (Famoriyo 1984, Syagga and Olima 1996, Ogedengbe 2007, Kakulu 2008, Otegbulu 2009, Oluwamotemi 2010, Kakulu and Nuhu 2012). All these authors highlight the basis of assessing compensation payable for compulsory acquisition and emphasise the fact that the process is statutory and that the enabling laws do provide the valuation methods to be adopted.

Larbi, Antwi et al. (2004), state the reasons why governments may acquire land compulsorily as including:-The need to provide social and economic amenities like hospitals, schools, police stations, markets, airports, harbours, roads and highways, open spaces, public parks, waste treatment sites and other uses for the overall benefit of the society, which are unlikely to be privately provided; Existence of perceived economic and social inefficiencies in private market operations in the production of goods and services especially involving the natural environment; and the search for greater equity and social justice in the distribution of land.

Ding (2007) justifies land acquisition in a market economy as a way of correcting the following:-

- a) Mis-pricing of infrastructure and profit driven private markets often result in urban development patterns that have inadequate provision of public and urban basic services, inadequate provision of open spaces and recreational park, and park facilities, and inadequate protection of natural environmental systems such as wetlands;
- b) Public goods, interests and services such as schools, hospitals, roads, and easements require governmental intervention in land development by imposing restrictions on privately owned lands;
- c) Restrictions on the ways land can be used in terms of type and intensity help to achieve social, environmental and cultural goals;
- d) Urban land development patterns driven by private markets often harm the environment and natural ecological system, hurt the urban poor, and impose social costs on the society;
- e) Successful implementation of urban and regional planning needs sound land management and policy; and
- f) The need to address social issues like equity and justice becomes urgent and critical in fast urbanizing economies.

In support of compulsory acquisition, the FAO (2009) stated certain principles that need to be fulfilled when embarking on a compulsory acquisition process thus: The principle of Equivalence requires the amount of compensation to correspond to the value of the loss in value; the principle of Balance of Interests dictates that the acquisition procedures should safeguard the rights of the people who lose ownership or user rights of their land without jeopardising public interest; the principle of Flexibility requires the procedure to combine appropriate details and ability to derogate from such details in special situations; the principle of Equal Application to De Facto and De Jure Interests ensures that holders of different rights should be subject to similar procedures, while the principle of Fairness and Transparency dictates that the implementation of the procedures should allow equal access to all parties to information and expert representations.

4. Examples of interests to compensate

In a typical land acquisition exercise, the interests that are likely to be compensated for would include:

- (a) The land itself;
- (b) Improvements to the land, including crops;
- (c) The value of any financial advantage other than market value that the person may enjoy by virtue of owning or occupying the land in question;
- (d) Interest on unpaid compensation from the date of possession;
- (e) Expenses incurred as a direct and reasonable consequence of the acquisition;
- (f) Loss in value to other land owned by the affected owner due to the project.
- (g) Legal or professional costs including the costs of obtaining advice, and of preparing and submitting documents;
- (h) Costs of moving and costs of acquiring alternative accommodation;
- (i) Costs associated with reorganization of farming operations when only a part of a parcel is acquired;
- (j) Loss in value of a business displaced by the acquisition, or if the business is permanently closed because of the acquisition;
- (k) Temporary loss of earnings;
- (l) Personal hardship;
- (m) Other losses or damages suffered.

In some countries, the compensation will be reduced if the retained land increases in value as a result of the project, a condition sometimes referred to as “betterment”. A long-standing principle in many jurisdictions is that compensation should be guided by the objectives of equity” and “equivalence”—that is, the adequacy of compensation should be measured against the goal of ensuring that people are neither impoverished nor enriched (Keith, 2008). A variation on this standard view argues that it may be appropriate in some cases, particularly where a taking is occurring in the context of a development project or program, to aim beyond equivalence to improving the position of those affected wherever possible. This is the principle articulated in the World Bank Policy on Involuntary Resettlement: “Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher” (OP 4.12). The definition of

adequate compensation differs internationally. While USA adopts market value as the just compensation to the dispossessed owners, the UK views compensation to be based on the value to the owner consisting of market value plus any losses suffered by the claimant (Denyer-Green 2009). Tanzania accepts payment of market value plus disturbance and other losses (Komu 2007).

However, applying the principles of compensation in practice has always been an extremely complex challenge. Appreciation of this complexity has heightened as fuller and more subtle distinction of the rights that people hold over land has taken root in many parts of the world. A comparative analysis of the nature of land rights in many developing countries and the legal approaches developed in the context of Europe or North America, where land rights are generally standardized and well defined, land markets function, and land records are reliable, have shown that any attempt to apply a universal compensation principle will be ill-equipped for dealing with many developing country situations where such characteristics are less common.

5. Issues Involved in Compensation Assessment

Lindsay (2012) stated that compensation issues can be conveniently grouped according to two overlapping sets of questions: who should receive compensation for what kind of loss; and how should the quantum and type of compensation be determined?

Private Rights over Land

In some such cases, state ownership is nominal, and private rights over state land are held and transacted for all practical purposes as if the land were privately owned. In other cases, the nature of the retained state interest may be more significant as is the case in the rural Niger Delta where the customary land tenure persists, despite the enactment of the Land Use Act (LUA) 1978. Lindsay (2012) opine that in applying the principles of compulsory acquisition, it is important to focus on the private rights to land that will be terminated as a result of a taking, whether or not such rights amount to a narrow definition of ownership.

Multiple layers of rights

There may be multiple layers of rights held by any number of rights holders. A privately owned parcel

may be subject to leaseholds, mortgages, rights of way for utilities or transportation, concessions rights of traditional or other uses, rights to forest products, etc. Ownership of land, trees, buildings and other improvements may all be separately held. In the Niger Delta, customary right holders may lease out their farm land, economic trees are owned by families while the community may own foot paths. Each of these separate interests may represent a significant loss to its holder if the land parcel is acquired by government or anybody with statutory powers of acquisition and the right is terminated. Existing compulsory acquisition laws and practices may not be well adapted to “catching” all relevant interests in a land parcel. Some laws may target land owners without mentioning the array of other potential rights that may also be relevant and affected by the acquisition.

While the principle of recognition of customary rights is proclaimed, the legal framework for such recognition is vaguely articulated and moves towards operationalizing it have been ambivalent. As a result, the situation on the ground is often one where rights remain unclear and vulnerable. Compounding this is the fact that many compulsory acquisition laws on the books pre-date recent land law reforms and are ill-suited to deal with issues such as the valuation and compensation for customary rights

Defining the appropriate quantum and form of compensation:

A key consideration that emerges when one surveys the wide variety of economic, social and cultural settings in which takings occur is that there is no universally appropriate method for calculating loss (Lindsay, 2012). Laws from highly developed market economies generally recognize that compensation needs to go beyond the value of land and other assets, and to varying degrees contemplate compensation for losses associated with disturbance, costs related to moving and transition, in some cases harm to business, etc. in the Niger Delta, there has been no agreement or consistency in the composition of the compensation payable under the enabling laws. Different authors interpret the legal provisions differently (see Kakulu, 2008, Ogedemgbe, 2007 and Otegbulu, 2009).

Valuation professionals in the Niger Delta mostly adopt predetermined compensation rates as confirmed by these authors and confirmed by the

author’s field work in 2012. These prescribed rates have now assumed the resemblance of a legal provision and is also used in some developing countries like Tanzania (Komu, 2007). In the bid to appear to placate the land interest holders, different prescribed rates are now in force and been used by valuers both in practice and advising government and IOCs and other parastatals. In a survey conducted in the Niger Delta in 2012 to 2013, questionnaire was administered to 80 firms of Valuers and 61 questionnaires were returned. All the respondents confirmed that they adopt predetermined compensation rates in the assessment of compensation due on acquired properties and reliance on the LUA, 1978, section 29 (4c).

5.1 The Obagi- Ubeta-Rumuekpe (OUR) Gas Pipeline Project:

The OUR pipeline project is one of the projects initiated by the IOCs operating in the Niger Delta to convey gas to the Liquefied Natural Gas plant at Bonny in the Rivers State of Nigeria. The width of the pipeline right of way varies along the pipeline from Obagi to Rumuekpe, but there is a Node Junction at Ubeta and Rumuji. This study reviews a section of the pipeline at Rumuji covering a total area of 8.4 hectares of residential and agricultural land which was acquired in 2007. The agricultural land was used to farm crops like cassava, oil palm trees, mango trees, oil-bean trees, staking sticks, plantains, and vegetables. Residential buildings consisted of bungalows roofed with corrugated iron sheets, wooden window and door frames, cement screeded floors. Other structures were farm huts and animal fences.

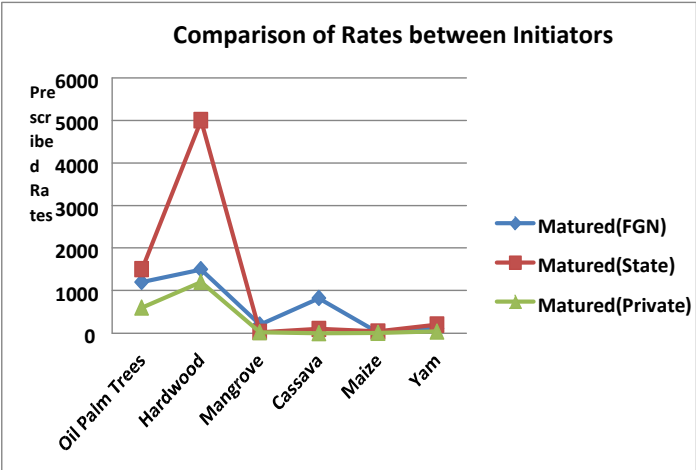
These different items were valued with rates prescribed by the Oil Producers Trade Section (OPTS) and adjusted by the sponsor of the project. Economic crops like cassava and pineapple were valued at N20³⁸ per stand, oil palm trees at N150 per tree, mango trees at N400 per tree, oil-bean trees at N200 per tree and maize at N5.20 per stand. For structures, farm huts were at N2000 per square metre, animal fence at N80 per metre run and the residential buildings at between N16, 000 and N18, 000 per square metre. Land was paid for under loss of use at the rate of N170 per square metre. Combining all these rates, a total compensation of N42, 000, 000.00 approximately was paid.

³⁸ N1 equals £0.0039 or \$0.0062

The professionalism of valuers who value with predetermined compensation rates is minimal as no professional skill is required to enumerate crop composition in the farms and apply the prescribed rates. Consultant Valuers have relied on section 29 of the Land Use Act (LUA)1978 in defense of the prescribed rates as indicated by Kakulu (2008), but as Hezekiah (2012) opined, the provisions in the law were included for the benefit of the government and not to meet any international requirement of equivalence and fairness. It is also in defence of this aim that the Nigerian Constitution merely provides for prompt payment of compensation without any attempt to define what the compensation should be, as done by other national laws on compulsory acquisition. In applying the prescribed rates, valuers have tended to overlook the fact that the section of the LUA requires the ‘Appropriate Officer’ to specify rates for each acquisition and rather assume that this legalises a schedule of predetermined compensation rates. While the LUA provides for the value of crops to be determined according to values prescribed by the appropriate officer (Sec.29 (4c)), it is submitted that this provision does not legalise the use of any predetermined compensation rates as it is currently being practiced.

None of the oil related laws provided for any predetermined rates to be used, thus it is doubtful the legality of the OPTS rates being adopted by the oil companies. This is more so when the Oil Producers Trades Section (OPTS) is only a trade group within the Lagos State Chamber of Commerce, Mines and Industry, whose membership is drawn from only the oil companies. None of the rates referred to above, is authorized by any law, though the preamble to the Federal Government rates, stated that “the Appropriate Officer” is charged with the responsibility of determining rates of compensation and to review them from time to time as the need arose, it went ahead to harmonize compensation rates arguing that harmonization was necessary to establish standards and unify land administration practices across the country (NTDF 2006). The harmonized rates provide for three categories of matured, immature and seedling for each economic crop and tree, with the rates decreasing from matured to seedlings. It also provided for unexhausted improvements to be compensated for on depreciated replacement cost basis.

Since there is no harmonized market in the country, it is difficult to justify the harmonization of compensation for land rights considering the heterogeneous nature land and interests subsisting thereon. While it may be possible to differentiate between a matured crop/tree and a seedling, it is not very easy to differentiate between an immature and matured crop/tree in practice and most are harvested and sold on maturity. When a building is acquired on a depreciated replacement basis and the claimant is expected to replace the acquired property at current costs in the market, the aim of the compensation becomes questionable as it is inadequate to replace the acquired building and place him in the position he was before the acquisition. A comparison of the prescribed rates for some matured economic trees and crops by the Federal Government (FGN), State Governments (State) and Private Operators (IOCs) is shown in Figure 1 below.



The graph above shows that the IOCs pay the least rates when compared to the Federal and State governments. This they justify by adding some payment for loss of use of the land which the government does not though some States in the Niger Delta like the Rivers State of Nigeria, have recently added a flat rate per stated size of land.

Tables 1 and 2 show some sample compensation rates in use, drawn from the comprehensive schedule of rates by the various initiators.

5.2 Reasons for the Low Compensation:

A major reason for the low compensation paid, is the definition of the compensation concept. The meaning of replacement cost provided in the enabling laws assumes different meaning to different professionals depending on whom they represent as the prescription of rates assumes.

Valuers representing claimants assume the compensation should replace the acquired interests and would rely on market data to determine replacement costs.

The World-Bank (2011) define 'replacement cost' as 'the pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes for agricultural land. For land in urban areas, it is the pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes. For houses and other structures, it is the market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labour and contractors' fees, plus the cost of any registration and transfer taxes. In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project deducted from the valuation of an affected asset' (OP 4.12, p.7).

The IVSC (2011, p. 146) defines it:

'...as the current cost of replacing an asset with its modern equivalent asset less deductions for physical deterioration and all relevant forms of obsolescence and optimization...'

While the IVSC definition accommodates depreciation, the World Bank definition advocates the avoidance of depreciation in determining the

replacement cost and is more relevant to the compulsory acquisition process. When the practice in the Niger Delta is compared to these definitions, it becomes obvious that there is a marked difference, though the World Bank recommendation ought to be adopted.

5.3 Assessing the Market Value of lost Assets:

Viewed holistically, the payment may appear reasonable as it amounts to about N5, 000, 000 per hectare. Analysing each item of claim reveals a difference between the market values and the prescribed rates. Cassava yields N100 per stand, pineapple yields N300 per stand, oil palm trees at N16, 000 per tree, mango trees at N15, 000 per tree, oil-bean tree at N40, 800 per tree and maize at N50 per stand. The animal fence will cost about N500 per metre run to construct while the residential buildings will cost between N75, 000 and N120, 000 per square metre to construct. These rates are completely at variance with all the prescribed rates in use. The implication of the difference between the market rates and the prescribed rates is that the payment does not meet the requirements of equivalence and fairness as the recipients of the compensation were left worse off than they were before the acquisition, since the compensation could not replace the farm crops or the residential buildings. When building costs average N95, 000 per square metre and claimants are paid at N17, 000 per square metre, it becomes difficult to assume that the claimants would be able to replace the acquired buildings.

Table 1: Sample Compensation Rates (Trees/Crops)

S/ No	Item	Public (Federal)			Public (State)			Private		
	Economic Trees	Mature	Immature	Seedling	Mature	Immature	Seedling	Mature	Immature	Seedling
1	Oranges/Tangerines	2000	1000	500	1000	500	250	600	300	150
2	Oil Palm Trees (Wild)	1200	600	300	1500	750	375	600	300	150
3	Mangrove Trees	820	410	205	300	150	75	3000/Ha	1500/Ha	750/Ha
4	Agbono (Bush Mango)	2000	1000	500	400	200	100	680	340	120
5	Hardwood	1500	750	375	5000	2500	1250	1200	600	300
6	Softwood	1500	750	375	2500	1250	625	600	300	150
7	Animal Trap	15000	7500	3750	2500 per meter run			Based on Valuation		
	Cash Crops									
8	Plantain	1000	500	250	1000	500	250	320	160	80
9	Pineapples	200	100	50	200	100	50	20	10	5
10	Cassava	200	100	50	25	12.5	7.00	20	10	5
11	Yam	115	57.50	28.75	200	100	50	40	20	10
12	Maize	20	10	5	40	20	10	5.2	2.6	1.3

Source: Extracted from Published Schedule of Rates, NTDF, 2006; Akwa Ibom State, 2005; OPTS, 1997

Table 2: Sample Compensation Rates (Buildings)

S/No	House Type	Description	Compensation Rates (N per Square Metre)		
			Public (Federal)	Public (State)	Private
1	Bungalows	CIS Roofing, Asbestos Ceiling, Wooden doors and windows, cement screed/ PVC floors	30,000-35,000	45,000	Based on Valuation
2	Bungalows	Aluminum Roof, Metal Doors and windows, ceramic/marble floors	35,000-40,000	45,000-50,000	Based on Valuation
3	Storey Buildings	Aluminum Roof, Metal Doors and Windows, Ceramic/Marble Floor.	60,000-70,000	50,000-70,000	Based on Valuation

Source: Extracted from Published Schedule of Rates, NTDF, 2006; Akwa Ibom State, 2005; OPTS, 1997

A general legislative approach is to define market value as the amount a willing buyer would pay a willing seller on the open market where some choice exists (Lindsay, 2012). There are several reasons this calculation might be difficult to make in a given setting (particularly when it comes to land values as opposed to other nonland assets). Some reasons for this difficulty include the non-existent or extremely thin formal markets, especially in the rural areas; the existence of an active informal land market and the government's refusal to accept market evidence from the informal land markets; the absence of established and independent valuation profession; and the tendency of buyers to understate prices in order to minimise taxation. Though different countries have devised different solutions like assigning values to different categories of land as done in Ghana and Albania, or determining agricultural land values by applying a multiplier based on the average productivity of the land over a three year period as done in China, these approaches have been said to result in a divergence between legal and actual market values of land.

The Niger Delta practice does not admit any payment for land as the law only provides for refund of rent paid. The IOCs as a gesture of their Corporate Social Responsibility do pay for the loss of use of the land at a chosen rate per square metre, though the World Bank standard recommends payment for land determined at its market value.

5.4 Replacement Cost or Market Value:

International norms such as those promoted by the World Bank, IFC and others refer to "replacement cost" as the appropriate benchmark for valuation of assets. Where land markets are robust, replacement cost and fair market value should be roughly equivalent. Fair market value as currently defined at the national level does not ensure that compensation will be adequate to acquire equivalent assets. In such contexts, a focus on "replacement costs" at least in theory should shift attention usefully to the calculation of what it would really take in a given market to replace lost assets. When it comes to non-land assets such as housing and other improvements, a replacement cost approach also ensures that the depreciation of lost assets are not taken into account in the calculation of compensation, and that transaction costs associated with the purchase of new assets are covered.

5.5 Land Instead of Cash Compensation:

The complexities associated with assigning realistic monetary values to lost assets and displaced rights is symptomatic of the difficulties of applying a "standard" compulsory acquisition legal framework to social situations in which land is valued differently than it is in functioning market economies. The definition of land rights in rural areas poses a problem as some land rights that are critical to rural livelihoods, such as rights of pasture or access to forest resources, may simply not be susceptible to monetization. The loss may only be genuinely addressed through the provision of alternatives. Where markets for land are weak or severely distorted, cash compensation based on fair market value may be insufficient to compensate for the disruption to livelihoods and social cohesion caused by a taking (Lindsay, 2012).

The offer of alternative land as compensation may also avoid problems that can arise "when financial compensation is paid to people who are unused to handling large amounts of money and who may soon after receiving compensation, find themselves with no land to farm, no income stream to support themselves, and no job skills to compete in a non-agricultural economy." (Keith, 2008). The World Bank Policy on Involuntary Resettlement stresses the provision of alternative and equivalent land as a preferred solution where livelihoods are land based. There are constraints that limit the application of such an approach, particularly in rapidly changing areas where suitable alternative land may be difficult to find in light of population pressures and in the Niger Delta as in other parts of Nigeria, this approach is hampered by the absence of a land bank and the lack of availability of unoccupied land that may be used for resettlement.

5.6 Negotiating Power of Claimants:

In most acquisitions in the Niger Delta, affected owners and occupants often have less negotiating power, experience and skills than the acquiring agency. In the OUR project, most claimants retained Claim-Agents who were not skilled in valuation to represent them in the compensation assessment process. The process did not also afford claimants time to make representations or consult scarce valuers to advise them of their entitlements. This led to their accepting whatever they were offered under pressure.

5.7 Valuation Skills:

There is a shortage of valuers qualified to represent claimants in the acquisition process and the rural nature of the area meant that natives did not appreciate the role of valuers in the process hence they relied on claim agents for representation. Even where valuers were retained, it was difficult to obtain reliable indicators of value as land sales were informal and markets hardly existed for any market data to be collected. There is also no data for the annual value of trees and perennial crops and the maturity period for each so the valuers base their valuations on data that can hardly be defended. There is also a general misconception about the cost of engaging valuers as against claim-agents by the claimants. Valuers find the compensation laws confusing and rely on the dictates of the acquiring authorities to value rather follow their professional training and experience, since the acquiring authorities are more influential than the land owners or user right holders.

6. Conclusions:

This paper has reviewed the reasons for and practice of compulsory acquisition in the Niger Delta. The standards of assessment by international organisations like the World Bank were compared to the valuation for the right of way acquisition for the OUR gas pipeline project and it was discovered that the land owners involved in the project were paid compensations that do not meet the minimum standard of equivalence as the compensation they were paid fell far short of the cost of replacing what was acquired.

Among the reasons for the paltry compensation is the non-availability of market information, the misinterpretation of the Land Use Act 1978, the lopsided nature of the enabling law which fails the test of being balanced in the protection of the interests of the parties to the acquisition, the overbearing influence of the IOCs who decide what they want to pay and do not admit any negotiation in determining the compensation paid. There is a high illiteracy level of the rural communities involved in the pipeline project and their poverty level led to their acceptance of a paltry compensation since they could not pay for any professional representation.

Practicing valuers are scarce and those that are available hardly exercise their professional skills in determining values of rural properties as there is the belief that their professional opinions do not account and thus they accept any guidelines given by the acquiring authorities. The compensation paid

for the OUR project determined by the use of predetermined compensation rates, does not meet any known international standard definition of value as defined either by the OP 4.12 or IVSC (2011). It also does not meet the requirements of the African Charter on Human and Peoples' Rights 1986 nor meet the FAO (2009) basic principles of equivalence, uniformity and fairness. The acquisition process was not flexible to admit the opinions of the claimants as the IOCs were both the acquirers and the arbiters of the final compensation paid.

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Land Administration in Eastern Africa: Quest for Identity

Felician Komu

Abstract

This paper looks at Valuation as an important component of land administration that has outgrown the land sector gradually becoming an independent professional discipline much to the chagrin of its hosts – the land administration. Valuation as a profession originated in the actual sale transactions in medieval Europe where buyers relied on experienced interventionists in the land/real estate market to advise on the size and buying price of real properties. Its eventual introduction to university curriculum has been diverse amongst different regions and at varying momentum. At professional level, within Africa, valuation profession is organised either within the Built Environment Disciplines such as Quantity Surveying/Building Economists and Geomatics/land surveying while in others with Land Administration/Property Management or on its own under the general theme of Real Estate.

The main argument in the paper dwells on the readiness of the old established valuation schools within the Eastern Africa region to embrace the growing needs for a hybrid discipline of land administration. The paper observes spectacular developments that have taken place within the land administration sector and advance arguments towards cementing these arguing a case for universities to devise academic education that paves way for the growth and expansion of land administration which ought to be seen as an all-encompassing

Keywords: Land Administration Education, Valuation

1. Introduction

This paper is an intrigue on the emerging land administration as a hybrid theme that will have to compete with the dominant land management/valuation training paradigm in Eastern Africa. The paper details at length the evolution and growth of the valuation profession that is in view of the author a precursor to the stagnation of the land administration training in some parts of the region. Over the last three decades, valuation profession that hitherto was confined to the western and particularly true in the English speaking countries, has expanded and established itself in almost all countries. Within the Eastern Africa, Burundi, Rwanda and Ethiopia are introducing the valuation profession at the same time as they are struggling to implement a land administration curriculum stemming from their alliance within the network of Land Administration in Eastern Africa.

Valuation profession has been a valuable tool and a necessary ally of market-oriented economies in recent years but historically as an important component of land management (Enemark et al,2010). On the other hand, in countries such as Tanzania, Valuation has never been considered as a standalone profession. It has been considered as part of land management to the extent that its awards are grounded in degrees in Land Management and Valuation (ARU, 2007), in Land Economy Surveying (NCPS, 1977), in Land Economics (UoN, 2001) in Estate Management and Valuation. In all cases, the graduate from any of the programs is considered competent to work in land offices as a Valuer, Land Administration Officer or Estate/Housing Manager. Valuation training in its present sense is entrenched in land management functions. Land management is about land policies, land rights, property economics, land-use control, regulation, implementation, and development. Land management, this way,

encompasses all those activities associated with management of land as an asset and a resource to achieve sustainable development. Although valuation has not existed as a stand alone taught discipline around the region and apparently in most other countries around the globe, it is nevertheless true to argue that valuation services have in practice been the main harbinger of land administration and valuation is construed as a practice in its own right. As a result, the Valuer's role has been prominent in the land sector.

2 Valuation Discipline as a Profession and an educational Program

Valuation professionals enter the discipline from different backgrounds, mainly from real estate in the English Commonwealth countries while in the USA and as a whole, are more likely to enter the discipline from a business /finance background such as accounting, economics or commerce (Schulte, 2005). These different backgrounds have steered the profession in almost two different directions muddling up its growth as one singular discipline. Partly because of the unique position that real estate tends to occupy in an economy and partly due to the influence of the powerful real estate professional institutes such as the Royal Institution of Chartered Surveyors, the Appraisal Institute of the USA, valuation is increasingly being recognized as grounded in real estate and entry into the profession is gradually being unified across many countries. Its ties to the land sector and in particular the agricultural and rural land are becoming loose over the years as observed by Galal et al (2001) who argued that lay people are more likely to consider real estate issues as those dealing with urban real estate but which may not include agricultural land.

Valuation profession has undergone a number of changes over the last four decades characterized by its desire for integration, consolidation and unification. Vandell (2007) observes valuation trying to align itself with the socio-economic changes not just within the national borders but across the borders as well, while consolidating itself in a two-pronged fronts- the professional and academic training. Through the Royal Institution of Chartered Surveyors (RICS) which was set up in 1863, the UK-styled valuation profession was replicated in all its colonies in America, Asia, Australia and Africa.

Valuation profession in Eastern Africa was introduced by the British colonial government in the then Tanganyika and Kenya as means of enabling the government to raise revenue through land taxation. Hicks (1961) observed the setting up of local government by the Colonial Government in East Africa required another complimentary system of land taxation to support the new structures. The Local Government Rating Ordinance that was passed in 1928 in Kenya empowered municipal councils to tax land. By 1950, A valuation organization was subsequently set up in the land Department in 1950 to help the local authorities to prepare valuation rolls as observed by Syagga (1999) and Nzioki et al (2006). At about the same time valuation education was introduced in Kenya.

In terms of academic training programs, valuation courses have faced competition from the new emerging areas of property studies such as property investment, development, property management, facilities management and marketing as well as real estate. Despite general recognition of valuation and its important roles in the financial world, valuation as a discipline has been continuously dwarfed by both endogenous and exogenous growth factors within itself. The most warring of all the factors is the lack of uniform knowledge of what the valuation discipline entails, the growth of the allied disciplines and its positing in land sector.

In the late 1960s, leading academicians at the Cambridge University hatched a varied valuation teaching program that they referred to as 'Land Economy Surveying' under the auspices of the Commonwealth Association of Surveying and Land Economy (CASLE) founded in 1969.

CASLE formulated and enforced education standards in the fields of Land Surveying, Land Economy and Quantity Surveying. During 1970s and 1980s, CASLE ran an accreditation program that was very popular amongst its member states in over 40 countries. The major difference in terms of education curriculum of the two systems, the RICS and CASLE was in the latter; the curriculum was much broader and included detailed coverage of management of natural resources. CASLE marketed its brand of education in non-UK countries and mostly Africa. Four universities embraced the CASLE module, the University of Nairobi which introduced BA degree in Land Economics, Kwame Nkrumah University, BSc

Land Economy and the then Ardhi Institute in Tanzania, changed its awards from Estate Management and Valuation(EMV) to Land Economics during 1978-1981 and later to the present BSc Land Management and Valuation. Copperbelt University in Ndola Zambia introduced BSc Land Economy Surveying in 1984. CASLE's version closely aligned the valuation profession to the land sector with graduates from the valuation programme taking up positions in land administration both at local and central government levels. As a result, it would be seen later the traditional universities in Africa that took up the CASLE version have been hesitant to set up newcomers Bachelors Degree programmes in Land Administration lest the traditional programmes suffer.

3 Survival of Valuation as a Discipline

Faced with globalization and advances in technology, an agenda for internationalization of the valuation profession was floated in mid 1990's and is being vigorously pursued by different professional institutions around the globe and in particular the International Valuation Standards Council ³⁹ (IVSC), the Royal Institution of Chartered Surveyors (RICS), the World Association of Valuation Organizations (WAVO) and regional groupings such as the European Group of Valuation Associations(TeGOVA), Asean Group of Valuers(ASEAN)etc. However, as a relatively young and mostly knowledge based profession, the valuation profession was more of experience-based skills accumulation with little industry-based education programs. Consequently, the profession has not registered as much industry-promoted research or industry-supported education programs for its advancement. Amidst this background, the business environment in which it operates has undergone substantial changes over the years, greatly undermining the very survival of the profession itself.

In terms of education, Schulte (2005) observed valuation training is very different throughout the world. In agreement with Baxter, the type of training required for valuation is based in three different background areas when compared against groups of nations:

- a) Surveying or Built-environment approach which is typical of the UK and all its past colonial states, the commonwealth. However, there has been unprecedented growth and development of property finance and investment mainly as offshoot of economics, econometrics and finance disciplines (Baxter, 2007), that has greatly reduced the eminence of valuation as academic program.
- b) Investment and finance approach, where basically valuation education is offered in business or economics faculties, which has been typical of the North American nations (USA and Canada) and continental Europe. Even then, the valuation education is offered in certain regions notably in the USA by Professional bodies while generalized education at bachelors and masters level is offered by public sector such as universities (Baxter, op cit).
- c) Interdisciplinary approach, which combines real estate/surveying approaches with the investment and finance approaches. This is a recent development and most practiced in Europe where the influence of the Royal Institution of Chartered Surveyors (RICS) has continued to be paramount.

Baxter (2007) observes quite rightly that given the different approaches adopted by different regional groupings, the dilemma of where the valuation discipline fits in university education program remains unsolved. He actually wonders whether valuation education should be offered in a standalone school such as Real Estate or should it be offered within a Business School, Construction/Built Environment School or Agricultural and landed interest School. It could also be argued whether valuation should indeed be a separate school with specializations in the various scores of valuation advice requirements. In India, the practice has been to offer post graduate valuation education to engineering graduates. Specialized training in the various types of assets that may require valuation such as Plant and Machinery, Farmland is offered as separate degree programs⁴⁰.

In most countries in Europe and Americas, licensing and registration of valuers has not required a minimum entry level of a university

³⁹ Previously International Valuation Standards Committee until it was restructured in 2009

⁴⁰ Kirit Budhibhatti published books on Plant and Machinery Valuation and setting up Degree programs in these areas in different states of India.

degree (Bachelor's). Indeed in Australia, a decision made in 1970's to fix a minimum entry level by early 1990's has been fiercely contended and deferred. In the USA and some of the European countries, registration of valuers is consequent upon attending prescribed courses on top of a general bachelor's degree. What this suggests is lack of agreement on what constitutes the body of knowledge required for property valuation in these countries. In the British Commonwealth, a long tradition of minimum bachelors' degree in real estate has been established, but with proliferation of other related programs such as property development, investment, property management, facilities management, real estate and finance, valuation as an academic discipline has been dwarfed.

4 Valuation Hegemony in Eastern Africa

In the context of East Africa, the oldest universities offering valuation courses were the University of Nairobi in Kenya and Ardhi Institute (now Ardhi University) in Tanzania. In both cases the program goes with different names, Bachelors of Arts in Land Economics in the case of the Nairobi program and Bachelor of Science in the case of Ardhi. But whereas for over 30 years, these were the only programs producing valuers recognized by the Commonwealth Association of Surveyors and Land Economy, today the Ardhi program has been split to form two other related course programs, BSc in Real Estate (Finance and Investment) and BSc in Property/Facilities Management. The Nairobi program which was founded within quantity surveying department in 1961 lost its shared taught-subjects with the BA in Building Economics in a restructuring program in 2005 that saw two other new programs in Construction Management and Quantity Surveying. Indeed, there has been a general trend over the years for training programs in valuation to either narrow down or widen the scope in many cases in response to market needs.

In practice, however, valuation as a discipline is well entrenched in the economies of the Eastern Africa countries in two major areas, mortgage transactions and in financial reporting procedures. In Tanzania for example, according to a register kept by the Chief Government Valuer, there has been a steady increase of valuations submissions⁴¹

for approval during the last three years as summed up under Figure 1. A majority of these valuations is however from the private sector and mainly from financial institutions for mortgage purposes. The Government sector valuations relate to land transfer cases for taxation purposes.

It could also be asserted that given the requirement for companies both in the private and public sectors to report their assets on fair value accounting, valuation services for financial reporting purposes have been on increase throughout the region. The inference from the above is the continuously expanding arena for the valuation discipline away from the land-sector in the region. Despite the externally induced hegemony of the valuation discipline over the allied traditional areas and its continued distancing from the land sector towards finance and business sector, training institutions have oblivious to the changes retained valuation programs within the context of land management or real estate.

The implication is the continued strangling of the Valuation Profession that is striving to serve the emerging needs in the business sector and dwarfing of the emerging needs of a new land administration discipline in the countries.

5 Major challenges facing the valuation profession

There is a lot of debate as hinted before as to the future of the valuation profession. Primarily because of the origins of the valuation, its infancy hence less grounded in research and loose industry-academia linkages, the valuation profession has been confined to practitioners mostly in the public service and in a few consulting firms around the globe. Elliot P (2005) sees the future of the profession in the hands of the practitioners more than in the hands of universities, which is probably the most correct observation. University valuation programs around the globe are limited to undergraduate level and even then most of the programs are a concoction of the allied disciplines such as real estate, land administration/management, finance/land economics, business, investment/taxation etc. It is not considered as singular program that could stand on its own. Baxter (2007) shares the same view and even adds

⁴¹ All mortgage valuations have to be approved by the Chief Government Valuer in the Ministry of Lands. Land valuation

for taxations purposes can only be carried out by Government Valuers in the Ministry of Lands and in Municipalities.

that the major threat of the valuation profession is the development of these related fields as offshoots of economics which:

‘...has largely supplanted valuation studies as the mainstream content within many academic programs...leading to more rounded property professionals, with ability to move in several career directions, which by necessity dilutes the thrust of key valuation study...’p446.

On the other hand, Valuation profession shrouding in the land sector as it has always been the case within the Eastern Africa regions has not addressed the sociological needs of the clients that it has been serving. In land acquisition projects, the main area of complaints is on low compensation which results from the work of Valuers. In interviews with a group of displaced people at Madimba in Mtwara⁴² during January 2013, it was evident that the landowners had matters to sort out with the Valuers. There were accusations that the Valuers were not appreciative of the economic difficulties that the communities were being subjected to through the land acquisition processes. These views were echoed in a forum organized by a coalition of non-government organizations, the Land Alliance and Hakiardhi Tanzania who accurately or not blamed the Valuers for low compensation and inability to communicate with the affected persons (Komu, 2013).

Within the government land sector, the Valuer is seen by his colleagues as the ‘technologist’ whose main occupation is to compute valuation figures as required by the respective district/municipal land officer. Incidentally, the municipal district land officer and valuer are likely to be from same academic discipline. It is intriguing therefore to establish whether the onset of land administration as a hybrid discipline will have to address the training needs of a caliber of valuer that the land sector may seem not to have on one hand and on the other, what would be the relationship of the emerging academic disciplines with those in established universities around the region.

6. The Land Administration Curriculum Agenda

⁴² Madimba is one of locations where land was required for the proposed Construction of Mnazi Bay to Dar es Salaam Natural Gas Pipeline Project by the Government of Tanzania.

To develop an understanding of what land administration entails within the Eastern Africa Region, it was imperative to look at three main areas of practices namely, teaching of land administration topics, research and advocacy activities in the areas of land administration and, publications on land administration topics within the region. Although the initial plan leaned towards carrying out interviews as the main source of information for this paper, it was later discarded and only used in three occasions and even then as a result of interactive discussions on land tenure reforms with seminar or workshop participants in Tanzania and Rwanda. It had been established that perceptions of land administration varied a lot amongst the potential respondent population, which would not in itself help draw up conclusions on the way forward on land administration in Eastern Africa. The reigning views of training institutions and individuals working in research and education as well as land-related alliances were considered to have significant impacts on the future of land administration as discussed later in this paper.

In terms of conceptual understanding, the best definition that is being considered for this paper is that drawn from a Joint Workshop of UN-Habitat, FAO and World Bank in 2001 which is:

“...the process of determining, recording and disseminating information about ownership, value and use of land when implementing land management policies...”

The main tenements of land administration are the conferring of recognized bundle of rights within a clearly defined portion of land to a person. A detailed examination indicates a number of activities requiring different skills are involved. Enermark et al (2011) construes these in a form of land administration system whose main components are land registration, valuation, land use control and land development. In essence, these components have been the reason d’être of the four key land sector professions namely land surveying (cadastre for purpose of land registration), valuation, urban and regional planning and land management. These professions have established themselves invariably oblivious of the inter-discipline dependencies and in some countries quite independent of each other. Silayo (2005) attributes this to historical reasons observing the current technical and professional

cadres are a product of varied training philosophies from a wide range of training institutions around the globe. He concedes for example, land surveyors were trained at the then University College of Nairobi or overseas mainly Canada, Russia, Poland, Nigeria etc, while Valuers and Land Officers trained mainly in the UK up to late 1970s but in the latter years, a large bulk of actors in land administration has been trained locally in Tanzania.

At practical level, land administration system has not featured as an important input in physical development projects. Consequently as observed by Bennett et al (2012), implementation of infrastructure projects has been slowed down when individuals whose land rights had not been considered in the project planning raise objection to the project on one hand or on the other when a need to involve land administration professional such as valuers in compensation assessment was recognized much later during the implementation of the project. The significance of land administration system to a society is embedded in the man-to-land relationship that manifests itself in all aspects of life so much so that Bennett et al (2012) considers land administration as a critical public good that must be fully recognized in any economic venture.

7. Towards a Uniform Land Administration Academic Education

Training philosophies for the disciplines involved in land administration within the region have been shaped by the kind of programmes and projects that the governments pursued over time and whether internally or externally funded. These programmes can be broadly categorized into four-key areas i.e: those founded in:

1. Food security-solving strategies,
2. Land rights and conflicts-resolving efforts,
3. Poverty-eradication paradigms, or
4. Orderly urban development.

Each of these has provided a unique context into which legislation, practice, academia and research have addressed land-related problems and defined the actors.

Efforts by universities in Eastern Africa to hatch academic and research programs that seek to resolve the land problem have not been able to address all the pertinent levels of the land

administration problems (Komu et al, 2009). In some universities land administration programs are found in Law Schools, while in others, Schools of Built-environment or Earth Sciences and Real Estate Schools in English-influenced countries. It is also possible to find tracks of land administration in some agricultural and economic planning schools. It is observed that there has not been a universal set of subjects that would go in the training of land administrator. The adoption of UN-Habitat agenda and specifically its advocacy instrument, the Global Campaigns for Secure Tenure and subsequent set up of Academic programmes in Land Administration at the United Nations University(UNU) has laid ground for re-thinking of whither land administration training worldwide. The advent of the International Institute for Geo-Information Science and Earth Observation (ITC) of The Netherlands to Eastern Africa as an associate institution in charge of the Land Administration Capacity Building Programme at UNU has built mutual academic partnerships amongst training institutions within the region. A new form of Land Administration Networks has been set up with ITC taking initiatives to share its long history of teaching in land administration (Groenendijk et al, 2012). These initiatives were realized in two major forms:

1. Collaborative action involving the UN Habitat-GLTN, ITC and UNU that identified transparency as one of the key problem areas that needed intervention to facilitate an efficient land administration system. As a result a training programme in Transparency in Land Administration under the theme 'Land Governance: Building Trust' was developed. This programme was preceded by 3-day Expert Group Meetings (EGM) on '*Transparency in Land Administration: A Capacity Building Agenda for Africa*' which was held in Nairobi from 29-31 January 2007. The EGM which comprised of delegates from Sub-Saharan Africa appreciated the lack of existing training programmes in the areas of land, governance, training and capacity building within Africa. It adopted an overall framework with guidelines intended to enhance capacity in the areas of transparency in land administration through implementing a curriculum. The curriculum was developed for four regions in Africa,: (1) Eastern Africa (incl. Rwanda and Burundi), (2) Southern Africa (incl. Mozambique and

Angola), (3) Western Africa (Francophone) (incl. Madagascar) and (4) Western Africa (Anglophone). Four partner institutions were identified and engaged as focal points in organizing the first set of courses in the above regions, namely: ARU (Tanzania), Polytechnic of Namibia (Namibia), ENDA (Senegal) and KNUST (Ghana). These efforts are the foundation pads for the new land administration training paradigm not only in Eastern Africa but also in the other sub-Saharan regions.

2. Formation of a regional network of universities in Eastern Africa offering academic education in Land Administration, the Eastern Africa Land Administration Academic Network (EALAAN) during 2010. Initially, under the auspices of the ITC, the network included the Universities of Tanzania (Ardhi University), Uganda (Makerere), Kenya (Jomo Kenyatta, formerly Kenya Polytechnic University College) and Rwanda (National University of Rwanda). INES University of Ruhengeri in Rwanda and Woldia University in Ethiopia joined the Network later while South Sudan was seeking membership to the network (EALAN,2013).

The success of the ITC initiatives within Sub-Saharan Africa is owed to the presence of several highly trained alumni of the ITC in almost all the countries within the Sub-Saharan Africa but more so due to the fact that land administration has been the most topical agenda in the region. During 2006-10, a parallel initiative funded by the Swedish International Development Agency (SIDA) had put into the market graduates with Masters Degree in Land Management from the Royal Institute of Technology (KTH) in Sweden. KTH through SIDA was supporting development of Bachelors Degree Curricula in Land Administration in four universities within the region i.e Bahir Dar University (Ethiopia), Kenya Polytechnic University College (Kenya), Ardhi University (Tanzania) and Makerere University (Uganda).

While the first initiatives focused on the needs of the industry, the second initiative addressed the academic education in land administration. By 2012, fertile grounds for the development of new degree programmes in land administration within the Eastern Africa countries had been set up. Silayo (2005) and Komu et al (2009) observed

land administration functions in the region were being implemented in a fragmented way through individual disciplines, namely Land Surveying, Valuation, Land Information Management, Land Registration, Land Use Planning and Land Delivery systems but in uncoordinated manner(Fig 2). The persons tasked to head land administration and management units, are rarely conversant with the rigors or requirements of the other key disciplines for them to succeed. Owing to this shortfall in execution of land administration functions, activities tend to be discharged in compartmentalized fashion. To address this anomaly, Silayo (2009) argued that it was expedient to train at postgraduate levels, a hybrid cadre of professionals who would receive and develop composite education and knowledge to enable them to capture and comprehend in a holistic way, the functions of land administration.

8. Other Efforts towards Improving Land Administration in Eastern Africa

It is tempting to consider land administration as a new discipline in Eastern Africa. But as argued above, the four most common processes involved in land administration, the land tenure, use, value and development have featured in all civic and professional histories of the countries for several decades. However what is clearly alien to the region is the links for these four processes that seek to take cognizance of the complex relationships arising from high urbanization rates, changing land holding systems, redefining of rights, restrictions and responsibilities of land owners, information technology changes and governance requirements.

Land conflicts, disputes and denial of access to land resources for the poor are issues that are a result of the socio-economic changes in the region and that have called for land policy reviews. In 2006, the Economic Commission for Africa (ECA), the African Union (AU) and the African Development Bank (AfDB) jointly developed a Framework and Guidelines on Land Policy which was endorsed by Joint Conference of Ministers of Agriculture, Land and Livestock held in April 2009 in Addis Ababa, Ethiopia. In July 2009, the 13th Ordinary Session of the African Union Assembly of Heads of State and Government held in July 2009, Sirte, Libya, adopted the "Declaration on Land Issues and Challenges in Africa" urging the effective implementation of the

Framework and Guidelines on Land Policy in Africa (AUC-ECA-AfDB Consortium, 2010).

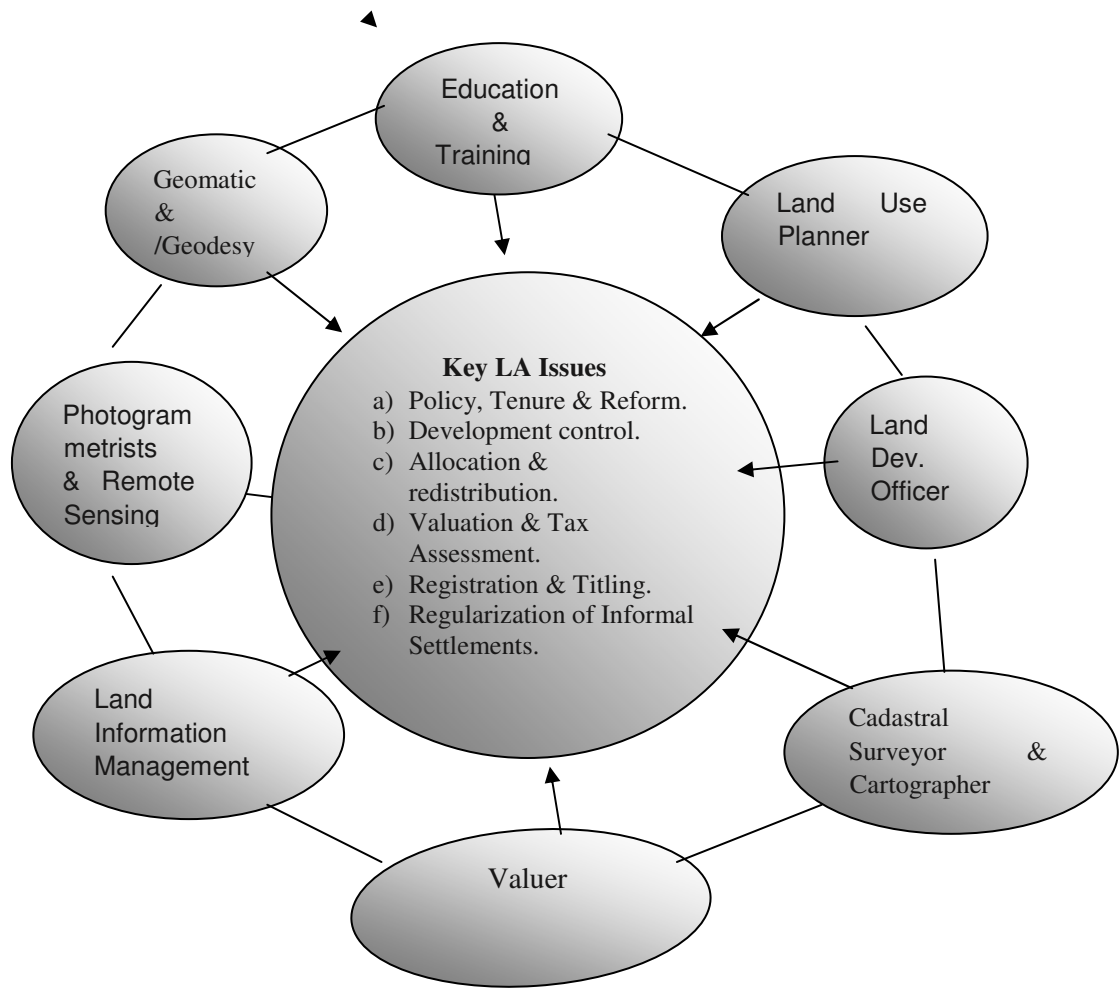
The Land Policy Initiative (LPI) has re-engineered debates in land administration which is central to our understanding of what would constitute land administration academic education. Kironde (2011) for example highlighted that most Eastern African countries have legal pluralism with multiple sources of property rights broadly categorized as customary and modern tenure. Conflicts over land and natural resources have been around the use and control of arable land, range land, water, forests and minerals. Land conflicts are a result of increased pressure on land and natural resources from both human and animal population; impacts of extreme weather events; land and natural resources degradation; different land uses; and poor land governance systems. He also highlighted the recent concern from the growing commercial pressure over land

including large scale land acquisition by both internal and external investors. These will appear as the alien issues that a land administration model will need to take onboard.

9 Land Administration – Identity Crisis?

In the following paragraphs, attention is made to what is considered the occupational role of land administration and whether the universities within the region are delivering education to meet the market needs for land administration. The various initiatives that have been put in place are a manifestation of strenuous efforts towards improving land administration in Eastern Africa. However, as Van den Molen(2002) recounts “...Better start ‘quick and dirty’ and develop successfully to ‘sophisticated’ over years, than start ‘sophisticated’ and fail...”(den Molen,2002), these efforts need to be successively improved upon.

Figure 2: Interlinks of Disciplines involved in Land



Source: Silayo E (2005), modified

There are four key issues that need to be addressed in developing land administration academy:

1) Advancement in the Individual Disciplines within Land Administration

While land administration had humble growth in all countries from implementation of land management policies, the activities that constituted land administration have assumed higher profiles within their own rights and spilled over to non-land sectors and in several cases unguided. This is mainly true of land valuation whose narration has been given in the first part of the paper in great detail. Land use planning and registration which have been the prerogative of the Urban Planner and Land Surveyor have also expanded over the years beyond the land sector and towards a more profitable service market usually in the private sector.

2) Attitude to Change in Old Schools

Until quite recently, the Eastern Africa did not have dedicated academic education in land administration. The setting up of Bachelors Degree programmes at four Universities (Makerere, Jomo Kenyata, INES- Ruhengeri and National University of Rwanda and Wolfi, Ethiopia) during 2011-2013, is an indication of the readiness of new Schools to accept introduction of specialized land administration programme. The old schools such as the University of Nairobi and Ardhi University have not introduced the programme despite being members of the Eastern African Land Administration Network.

The University of Nairobi in responding to the economic changes, it considered curriculum review of its 1967 Bachelors Degree in Land Economics, overhauling and renaming it Bachelor of Real Estate degree with two options in Valuation and Property Management option and the Land and Housing Administration option (Nzioki et al, 2009). From their perspective, land administration as had hitherto been was the prerogative of the Bachelors Programme in Land Economics and to accommodate the new thinking in land administration, the Land Surveying programme was not made part of the programme. It is interesting to however note the introduced changes included new

courses in the areas of Land Information Management Information System and Geographical Information System but with the objective of improving students' prowess in mustering valuation skills. However, recognizing the current academic education at the University of Nairobi was deficient in Land Administration; Nzioki et al (2009) recommended the current Bachelor of Surveying programme to be changed to Bachelor of Surveying and Land Administration.

Ardhi University is yet to consider the proposal for setting a Bachelor Degree Programme in Land Administration. The initial hesitation was on the whereabouts of the current Bachelors Programme in Land Management and Valuation (LMV). A University-level Curriculum Review scheduled in 2012 was to consider training needs in land administration from results of tracer-study. Unlike the case of University of Nairobi, the programme that was considered appropriate for taking on land administration was the LMV programme which essentially is a valuation course. This was despite the fact that a Land Administration Unit has been in place for the last 3 years as a joint effort of three Schools with specialization in Land Surveying (SGST), Land Management and Valuation (SRES), Urban and Regional Planning (SURP) and Institute of Human Settlement Studies (IHSS).

3) Market-oriented approaches:

Universities set up training programmes that are induced by the market. While this has been the practice all around, what is evident though is the fact that Universities commission trace studies in the areas currently taught in their universities and rarely do they venture into new skills areas. As a result, what has been observed in the Eastern Africa region, land administration whether perceived as a hybrid education necessary at post-graduate level or a basic undergraduate programme, is likely to be a candidate for new universities that have in recent times been mushrooming in the region. Most land administration offices at least in Tanzania have in recent years been recruiting land administration staff but with the

condition that they have to demonstrate a high level of skills in information technology.

4) Influence of civil society organizations:

Lobbying groups mainly in legal and human rights areas have taken the land issue as an important agenda, informing the communities of their rights and obligations. These have greatly influenced the perceived occupational role of land administration which can now only be looked in the context of how it promotes the livelihoods of the community it serves and respects the resulting relationships. As observed by Cotula et al (2003) civic organizations are widespread in the region and have important roles to play in influencing land policies.

In all the above cases, what is inferred is the identity crisis that land administration is undergoing. Valuation which had been so closely associated with land administration in the English-inspired education system is undergoing massive change while divorcing itself from land administration. Within the Eastern Africa region, Land Administration is still perceived from the mundane functions of allocating land, enforcing development condition, managing transfers and collecting dues from it. It is considered the exit point in the land delivery system whose required skills are those of clerical staff to handle the paper works. In the wake of the current global business environment, land administration provides the basic ingredients towards sustainable economic growth of a country vis a vis reduced conflicts and disputes, accessibility to natural resources for enhanced food productions and release of wealth. Land Administration hinges on the provisions of land policy framework and the land information management infrastructure that is in place. Universities have an important role to play to steer academic education in the areas of land administration towards a holistic approach, which coordinates the efforts of all actors at any level of functions.

10 Conclusions

Current development in the global economy dictates no other way than unification of standards

in various disciplines and inputting to one another. Individual disciplines within the wide spectrum of land administration will naturally grow and venturing into new skill areas. With growing interdisciplinary specialisations, the need for a unifying discipline that coordinates the teams to ensure not only good governance in land-human relations but in the competence levels is crucial. Land Administration within the Eastern African region is already beset with the historical legacy arising from the existence of its components such as land valuation and land surveying which have assumed a higher profile and oblivious of the need to work together are pursuing their own development paths. The initiative by the ITC and resulting academic partnership are affirmative actions that require support by national governments in the region.

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News Reports from Eastern Africa Land Administration Network (EALAN)

EALAN – Short Course Report

by Eugen Silayo- Coordinator LAU- Ardhi University

Course Title: Innovations in Land Registration and Titling Processes As A Tool For Pro-Poor Administration

Course Venue: Lifelights Hotel, Makongo Juu, Dar Es Salaam City, 21-30th November 2011

In November 2011, the Land Administration Unit (LAU) at Ardhi University, Dar es Salaam, together with its partner, the ITC-United Nations University School of Land Administration Studies (ITC-UNULAS) the University of Twente – the Netherlands, successfully conducted a two weeks short course on Innovations in Land Registration and Titling – Towards Pro-Poor Land Administration. While the UNULAS sponsored the event, supporting the attendance costs of the participants, the LAU handled the organizational aspects.

A total of 21 land professionals and academicians participated in from Burundi (1), Ethiopia (1), Kenya (2), Rwanda (2), Sudan (1), Tanzania Mainland and Zanzibar (11), and Uganda (2). The course was successful as it enabled the land sector professionals and academicians from the Eastern Africa region to come together, discuss and share knowledge and experiences about the theme of the course. The participants engaged in lively and proactive discussions.

Objectives of the Course

The short course aimed to offer a platform for learning and knowledge sharing in the field of innovative approaches in land administration with particular focus on Eastern Africa. The theme of the course was thus presented and discussed in the background of the major land conflicts related to landlessness and land grabbing taking place in Eastern Africa.

This report is intended to bring to the attention of decision makers, the land sector practitioners and academics, the significance of the course, to highlight on what was discussed and issues raised, identify what may be done and for whose benefit; so that further action may be taken.

Course Delivery

While every course participant presented a paper highlighting their country experiences, the main resource persons were from ITC-UNULAS whose Director, Professor Jaap delivered a series of lectures; the Dutch Kadaster, whose Mr. Co Meijer also delivered a series of lectures on his land registration experiences in East Africa. Other key presenters were LAU's in-country partner, MKURABITA (Property and Business Formalization Programme), and Ardhi University staff. Parallel to the presentations, breakout sessions were organized. Course participants were challenged to contribute with their expert knowledge and to reflect on the theories presented. In addition, time was reserved for a demo and hands-on feel of the STDM geo-ICT tool. A one-day excursion to visit areas affected by land invasions in the city was made.

Innovations in Land Registration and Titling Processes

The course participants noted many issues, which are worth revisiting.

- i) The land registration and titling process is dependent on many professional actors – land based and non-land based – who ought to observe teamwork spirit for efficient service delivery.
- ii) The performance and productivity of land surveying and mapping sector is low, causing acute scarcity of planned, surveyed and serviced land parcels in most urban areas.
- iii) The land registration and titling processes take too long to be completed (over 8 years in Tanzania!!).
- iv) In many countries, land registration and titling is sporadic and costly, thus benefitting only a few, notably the haves.
- v) Land regularization and registration projects threaten the tenure security of the poor and the marginalized persons.
- vi) In Tanzania Mainland only about 5% of the rural land and 10% of the urban land are surveyed and registered.
- vii) State guarantees tenure security, yet it is the very same State that takes land away from its people.
- viii) Increasing insecure land tenure for low-income urban dwellers, small farmers, pastoralists and marginalized groups.
- ix) Much effort is needed to make land registration appropriate and pro-poor.
- x) Lack or inadequacy of trained and motivated staff.

- xi) The use of geo-information technologies is essential for speedy land registration and titling.

The Way to Innovations

The course participants identified the following issues worthy consideration when undertaking innovations in land registration and titling as a means of speeding up the processes and making the service affordable to the poor as well:

- i) Identify the key issues that require change as well as the persons who are adversely affected by the current system.
- ii) Speed up the process of adjudication and registration coverage – the need to underscore the use of systematic approaches.
- iii) Adopt low-cost (affordable) and simple methodologies to acquire and process data to deliver timely land information.
- iv) Adopt pro-poor land tools that are innovative, such as STDM. (This approach was adopted with a caution that ‘pro-poor’ does not mean ‘low tech’).
- v) Pro-poor tenure options should include incremental building on what the people have, recognizing a number of tenure systems, adopting measures that ensure that vulnerable groups access land, etc.
- vi) Adopt participatory approaches in land registration and titling in order to capture the wishes of the people.
- vii) Need to learn from the experiences of other African countries.
- viii) Use appropriate technology such as GeoInformation Technology (GIT), supported by public awareness both at local and professional levels.
- ix) Improve capacity.
- x) Improve public awareness on land laws, regulations and procedures.
- xi) Improve land governance.
- xii) Ensure that land records are up-to-date and reliable at all times.
- xiii) Wherever possible computerize the land registration processes.

Course Outputs

The course organizers and sponsors remained convinced that at the end of the short course participants were able to: discuss the theoretical concepts behind an innovative approach in land administration; judge the latest developments in innovative land administration tools that are pro-poor, and also cover customary and informal land

rights, for the administration of land in Eastern Africa; produce recommendations for the use or improved use of innovative land administration tools in the light of the actual land conflicts in Eastern Africa; defend the use of innovative approaches in land administration within the actual working context; develop approaches for dissemination of the gained knowledge in regular training at the organizing institutes or as input for publications at local, regional or global scale; and contribute to a regional resource network in land administration to exchange experiences about ‘good practices’ and support each other in the implementation of innovative pro-poor land administration tools. There is no doubt that the event went a long way towards consolidating the Eastern Africa Network for Academics in Land Administration.

EALAN Seminar on Analysis and Measures to Prevent Land Grabbing in Tanzania,

18 November 2011 COURTYARD HOTEL

DAR-ES-SALAAM, TANZANIA

The Seminar on analysis and measures to prevent land grabbing in Tanzania was organized by the Land Administration Unit (LAU) of Ardhi University in collaboration with its partners, the United Nations University School for Land Administration Studies (LAS) of the ITC, University of Twente in the Netherlands; and MKURABITA, President's Office, Tanzania. The main theme of the seminar was analysis and measures to prevent land grabbing in Tanzania. The sub-themes included:

- a) large scale acquisition of farmland in Tanzania;
- b) Foreign Direct Investment in Agriculture in Tanzania;
- c) Land Acquisition for Mining Activities in Tanzania;
- d) Large Scale Land Acquisition and the Fate of the Rural Communities;
- e) Land Conflicts Arising from Land Acquisition; and
- f) Creating Landlessness in Rural Tanzania.

1. Seminar Organization

The seminar was organized as part of a long-term forward vision of the ARU Land Administration Unit and was intended to stimulate a number of discussions among the land sector professionals and decision makers. Specific objectives of the seminar were:

- a) To inform decision and policy makers about:
 - i. What is happening or may happen in future regarding massive land grabbing and the likely consequences notably on the threat of creating landless communities and the likelihood of fomenting land based socio-economic cum political crises;
 - ii. The existing weaknesses in the institutional framework and the laws governing land acquisition and ownership.
- b) To prepare ground for research work on identifying, monitoring and preventing land grabbing and large scale land acquisition in Tanzania.
- c) To generate inputs into the curriculum for Postgraduate Diploma in Land Administration; and
- d) To create public awareness on insecurity of land tenure.

There were five presentations that focused on the following topics:

- 1) Land Grabbing Prevention needs Land Administration but even more Land Governance which was presented by Prof Jaap Zevenbergen
- 2) Land Grabbing in Africa: Policy, Legal and Institutional Hiccups in Tanzania, presented by Prof Lusugha J Kironde
- 3) Land Grabbing or Invasion in Urban and Peri-Urban Areas by Dr Felician Komu
- 4) Cost Effective Aspects of Surveying and Mapping for Mass Land Parcel Titling With the

View to Ensuring Affordability, Equity, Secure Tenure and Development by Mr Stephen A.P. Shirima

- 5) -A Unified National Legal and Institutional Framework for Governing Property Rights- An Instrument for Land Conflicts Prevention and Resolution by L.M. Salema

Seminar Observations and Resolutions

Reforms on the current Land Policy, Legal and Institutional Framework are the pre-requisite for sustainable and inclusive socio-economic development which is fundamental for peace and harmony.

Implementation of the first generation of Legal and Institutional Reforms developed by MKURABITA⁴³ provide a systematic approach towards attaining the positive outcomes of a real estate industry, viable agriculture and agribusiness development, locally controlled mining and tourism sectors, to mention a few.

Developing and institutionalizing a specific Legal and institutional arrangement for regulating foreign investments on land needs to be attended urgently to reduce emerging conflicts and create a viable win-win environment.

"...a viable conflict prevention and resolution is only possible within a reformed land policy, legal and institutional framework – MKURABITA proposals are the first shot in that direction..."

In order to achieve cost effective strategies for mass land registration in Tanzania, various initiatives must be considered:-

⁴³ The Swahili acronym of Tanzania National Property and Business Formalization Programme (PBFP)

- i) Appropriate policies should be in place namely; the Land Policy and the anticipated National Land Surveying and Mapping Policy (NLSMP). The Policies should be designed such that, they contain statements on cost of titling of parcels of land and by committing more taxpayers money in the process with the aim of getting more revenue from the land. With more registered parcels of land, the primary objectives for registering land will be achieved thus promoting social, economical and environmental welfare of the country.
- ii) Legislation, regulations and standards should be reviewed accordingly taking into consideration technological developments and the prevailing socio-economical status in the country.
- iii) Promotion of Capacity building in the aspects of human resource and technical equipment for carrying out the land surveying and mapping operations. Limitations in capacity are contributing accordingly towards high cost of operations for mass land titling. Local Authorities should be advanced loans for effective capacity building in the land sector especially in land registration so as prevent land grabbing. Financial Institutions like NSSF, PSPF, TIB, CRDB, LPF and NHC should strive to support local Authorities which are directly serving the people in this problem of land grabbing. Other development Partners should also be encouraged to fight the scourge provided that effective operational framework is in place. The framework should be in place to prevent diffusion of private/individual interests in the processes.
- iv) Promotion of Public Private Partnership (PPP); with appropriate collaboration framework, costs can be trimmed down as services will be readily available when needed thus reducing time overheads and consequently costs.
- v) Standardization of costs; cost models will vary accordingly depending on many factors such as the environment, technical requirements, available equipment etc. Cost modeling guide should be prepared as a strategy towards standardization.
- vi) Land Agents must be regulated accordingly. A regulatory mechanism should be in place to regulate costs for services in land

surveying for land titling. Such regulatory body which must be instituted according to legislation must also be mandated to regulate land markets, acquisition of land, compensations, use and management of land so as to prevent abusive use of land. Big parcels are being held without being developed for sometime forcing the government to intervene or revoke ownerships.

- vii) Compensation fund should be in place for prompt payments to those affected whenever land acquisition takes place so as to cut down overhead cost.
- viii) Ethical values should be aggressively pursued in all undertakings regarding titling of land. Corruption and other malpractices escalate project costs and consequently costs for acquiring and titling of land parcels. Corrupt individuals and institutions should be taken to task promptly and accordingly to achieve cost effective land parcel registration.

Seminar Conclusions

Adoption and adaptation of appropriate technologies notably GNSS, Remote Sensing and GIS in land surveying and mapping for mass land titling coupled by efficient institutional framework and ethical behaviour in the practice of land delivery in Tanzania will cut down the extra costs involved in the process of titling of Land. Further Private Public Partnership (PPP) initiatives and involvement of National Financial and Social Institutions could increase the efficiency of delivery of such services and consequently achieving a cost effective land titling for sustainable development and poverty reduction in the country and further reducing land grabbing and disputes.

Research and pilot projects are required in the process designing and formulating a cost effective methodology for land titling and registration so that the best possible approach can be achieved. Increased land registration in a country like Tanzania will facilitate achievement of the Millennium Development Goals (MDG) and reduce poverty accordingly by the year 2025.

Book Reviews

Title of the Book: *Land as a Human Right: A History of Land Law and Practice in Tanzania*



Author: Abdon Rwegasira

Publisher: Mkuki na Nyota, Dar es Salaam, Tanzania.

Nine Chapters, Four appendices, List of 234 Cases, Bibliography xxvi + 412 pp, 1326 footnotes,

Foreword by seasoned land law expert, Professor Mgongo Fimbo

Reviewer: J.M. Lusugga Kironde, Ardhi University.

This is a welcome book to fill in on the lacuna in publications related to land a matter, which has persisted for sometime. It ranks together with authoritative books on land law such as those written by Professor Fimbo and James and Fimbo in the late 1960s/early 1970s, only that this book brings us up to date covering national, regional and international links to land laws and practices in Tanzania. The book blends academic and practical; considerations and supplements these with reference to the 234 cases cited.

The Book is presented in nine chapters, each chapter addressing an important topic on land issues. It generally takes a human rights approach to land tenure and administration.

Chapter one presents the Human Rights movement and the Right to land in Tanzania. It covers a general overview on political discourse over the right to land; the land question in historical perspectives; land conflicts arising from the colonial occupation in Africa. It also educates on the concept of human rights and presents the case of land as a human right looking at both the position of international law and at the law and practice in Tanzania. The Book traces thinking on land, land tenure and land administration from the great thinkers such as Aristotle in the period before Christ to the relatively modern ones such as Jean-Jacques Rousseau of the 18th century.

It makes interesting reading to be presented with the views of Western European powers in the 15th century: “when it was agreed that the conquest of the ‘infidel’ people and their lands could proceed according to the rule of law that imposed a duty on non-Christian peoples either to accept Christianity or face subjugation through a just war”. Although it is possible that these views were borrowed, they gave justification to the grabbing of native land in the “discovered” territories.

We do get many such examples from the Western World but get hardly any views or attitudes from the Eastern world, where the grabbing of native lands and cultural subjugation of natives was also the norm. The book takes us through the international human rights laws, practices and conventions zooming down to Tanzania where it is (sadly) realized that the rights to land and decent housing are yet to take root. Indeed this is an area where the New Constitution could take remedial action by making it categorical that access to land and decent housing is a human right for every Tanzanian.

Chapter Two is titled Land Law Reforms and Tenure Systems covering the colonial and post colonial period. Various useful concepts and definitions such as land, land tenure, and reforms are dealt with. The author documents and discusses pre-colonial, and both German and British colonial land tenure systems and the post colonial systems, putting the legacy of Mwalimu Julius Nyerere and Ujamaa in focus. The Chapter ends by discussing the situation leading to the Presidential Commission on Land Matters (the Shivji Commission) which the author looks at as a new Hope.

The Commission resulted, *inter alia*, into the National Land Policy 1995 and a series of new Land related Acts, from 1999.

Chapter Three titled Land Delivery Systems: The Acquisition of Land could give a wrong impression that it is about compulsory land acquisition. No. It is about how one gets access to, acquires land, taking the reader through application, grant and revocation of title, as well as the thorny question of double or treble allocation. With regard to the latter, the author takes a mainly legalistic approach adopted by the courts in the case of double allocation. Issues such as corruption, efficiency and good governance in land administration need to be addressed as well.

Land acquisition by purchase, adverse possession, inheritance, and gift are well covered and the reader is treated to authoritative decisions and procedures. Cooccupancy is dealt with extensively before addressing the rights and obligations of the holder of a right of occupancy. The Chapter ends up by dealing with Easements: meaning, creation and termination; as well as an Analogous Rights.

Chapter Four, which is 70 pages long, deals with disposition of land or interests in land from both a historical and practical perspectives. Transfer could be by sale, lease, mortgage and as collateral. The question of mortgage is a relatively new comer on the land disposition scene in Tanzania, and, given the governments drive to encourage the development of housing markets, it is time that the issue of mortgages was well understood and the author gives a practicable starter. The Chapter ends by looking at Compulsory Acquisition of Land by the State pointing to at least two thorny questions with the current legislation and practice: should the state acquire land compulsorily and pass it over to investors, or other private interests such as in the course of urban development, and doing so in the name of public interest? How about the issue of compensation for, as the author points out: “of all the problems arising out of the process of land acquisitions, matters of compensation have turned out to form the most serious problem”. The background and discussions by the author create a convincing case for the need to revisit this question urgently.

Chapter Five is on Succession and the Law of Inheritance. The issues are addressed in their generality and later on, zoom is made to land. The Chapter covers testacy, intestacy and freedom of attestation; and the laws of inheritance and their scope of application. The laws dealt with are Customary laws, Islamic laws and statutory laws and how the courts have gone about applying them. Equality between the sexes has been an area of contention when applying these laws.

Rules of Procedure in the Administration of an Estate and the jurisdiction of the courts from primary, to district and to the high court are discussed. This is followed by Powers and Duties of Administrators of Estates and the role of an administrator general in administration of Estate.

The author encourages us to actually write a will to avoid many of the problems that come with respect to the division of property after the death of the

owner. To encourage this he also provides an example of a “LAST WILL AND TESTAMENT” (Appendix 4), which makes it less frightful to embark on writing a will apportioning ones property after one’s death.

Chapter Six is devoted to Women and the Right to Land. It addresses the International Law Jurisprudence on Women’s Right to Land. Reference is made to both Biblical and Quoranic provisions. He cites Yakubu (1985) as saying: “In *sharia*, land is considered as indispensable to individual and social life just like water, air, light and fire and no person will have an exclusive power of control over it except for the part he uses..... Land is a gift from Allah and everybody has usufructory rights to it” (p. 254). The basis for extending rights to land for women is well discussed. When it comes to Tanzania the author addresses Domestic Jurisprudence on Women’s Right to Land before the Land Acts (1999), differentiating this from the position after the Land Acts and pointing to improvements at least in terms of the law that women gained then. But this is still a an area of contention especially in the case of customary law Chapter Seven discusses a topic which one does not find very much in discourses on land law except from international NGOs: The question of the Right to land of the indigenous Minorities in Tanzania. The author however points out that the issue has been reasonably written on and succinctly addressed by resource persons of academia although there are hardly any provisions in the national Land Policy and the Land Laws that address the situation of indigenous communities. Indeed the general belief is that there is the need to “develop” these people.

The book takes us through the international concern on the Rights to indigenous and minority people and what Tanzanian jurisprudence on these people is. The indigenous people mentioned include the hunters and gatherers Barbaig, Hadzabe, Ndorobo and Maasai. In neighbouring countries, indigenous peoples include the Ogoniek in Kenya and the Pygmies in Uganda, Rwanda, Burundi and DRC. The author points out that sadly “there is on record a negative history about the land rights of these people” (p. 300). This is again one of the areas where there is a cry for just treatment with regard to land.

Chapter Eight is devoted to the Rights to Compensation, addressing the Right to

Compensation in International Law, and Compensation and the Law in Tanzania. It is pointed out that there is much doubt if the right to compensation is really enjoyed since there are a lot of grey areas especially in practice. Besides, the questions of compensation in terms of land and resettlement are unclear. This is once again an area which needs to be addressed urgently even at the level of the Constitution since there is too much suffering resulting from the compulsory acquisition of land.

The last Chapter, Nine, deals with Land Disputes, Litigation and the role of the courts. The International situation is not addressed in this respect but it is pointed out that despite the establishment of Land Dispute resolution institutions, land disputes are on the increase. The roles and powers of the various land dispute resolution institutions including the village Councils, Ward Tribunals, District Land and Housing Tribunals, the land Division of the High Court and the Court of Appeal are dealt with. Legal technicalities affecting a person's right to land are addressed. Unfortunately many land disputes are decided upon on technicalities leaving the question in dispute unsolved. This makes them less effective as land dispute solving institutions and more as institutions where legal counsel can earn a living.

There is a conclusion which highlights key outstanding issues. This is followed by Appendices

which are well informative to the practitioner, and a list of 234 cases including those that are famous such as: Bernado Ephraim v Holaria Pastory and Another (1989); Bi Hawa Mohamed v Ally Seif (1983); Kasubi v Kabukubuku (1987); Mulbadaw Village Council & 67 others v NAFCO (1984); Mwalimu Omari & Ahmed Baguo v Omari A. Bilal; Attorney General v Lohay Akonay & Another (1995).

A future edition may want to address economic, governance, equity and efficiency issues as related to the question of land and human rights. Intermediaries in the land sector need to be addressed as well. These include estate agents, land surveyors, valuers and town planners.

Both the author and publisher are to be congratulated for bringing out a well written, factual and reader friendly book. The quality of the editing and printing is excellent. The price is affordable. The book is a useful reference which is likely to remain like that for many years to come. All Chapters make good reference and the reader can pick what they are interested in and are treated with a wealth of useful theory, law and cases. The book is a recommended addition to the collection of individuals and institutions with an interest in land issues.

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Eastern Africa Land Administration Network Events

Forthcoming Theses in Land Administration

1. Adam Patrick Nyamuruhuma (2013) Verification of Buildings Using Oblique Airborne Images, a Doctoral thesis for public defense on 7th November 2013 at the University of Twente, the Netherlands.
2. Rigobert Francis Buberwa (2014) Toward Spatiotemporal Data Model- A novel Tanzania Land Administration Tool, a Doctoral Thesis due for public defense early 2014 at Ardhi University
3. Msangi Daniel(2014) Organic Urban Expansion - Processes and Impacts on Livelihoods of Peri Urban Households; Dar es Salaam, Tanzania, a Doctoral Thesis due for public defense early 2014 at Ardhi University
4. Kerbina Moyo (2014) Exploring Women Access to Land in Tanzania: the Case of Makete District, an ongoing doctoral research work at the Division of Real Estate Planning and Land Law, Department of Construction Management & Real Estate School of Architecture and Built Environment The Royal Institute of Technology (KTH) Stockholm- Sweden
5. Elitruder Makupa (2014) Social Economic Impact of Compulsory Land Acquisition to affected people in Tanzania, an ongoing doctoral research work registered at the University of Dar es Salaam in 2011.
6. Dawal L Mushi (2014) Massive Resettlement of a Displaced Community: the case of Kipawa Airport Expansion Project in Dar es Salaam, Ardhi University

Recently Completed Theses in Land Administration

1. S Elisha (2013) Practicability of Strategic Urban Development in Guiding Urban Land Development – a Critical Analysis, Doctoral Thesis, Ardhi University
2. Elifuraha Saria (2013) Contribution to defining a Geodetic Reference Frame for Africa(AFREF) Geodynamics implications, Doctoral Thesis at the Purdue University
3. Dorothea Deus (2013) Remote Sensing Modeling and Monitoring Variation of Lake Level and Wetland in the East African Rift System using Remote Sensing and GIS.
4. Christian Lemmen (2012) A Domain Model for Land Administration, Doctoral Thesis, ITC Dissertation No. 210, http://www.itc.nl/library/papers_2012/phd/lemmen.pdf
5. Georgina Rockson (2012) Land Administration for Food Security: A Research Synthesis, MSc Thesis http://www.itc.nl/library/papers_2012/msc/gsim/rockson.pdf
6. Monica Lengoiboni (2011) Pastoralists Seasonal Land Rights in Land Administration: a study of Northern Kenya, Doctoral Thesis, ITC Dissertation, www.itc.nl/library/papers_2011/phd/lengoiboni.pdf

Land Administration University Programs in Eastern Africa

Country	Institution	Award	EALAN Member	Remarks
Tanzania	Ardhi University	BSc Land Management and Valuation	Yes	Three Degree programmes in three separate schools each specializing in four land administration components (land valuation, land use planning, land adjudication/surveying and land tenure). Plans to introduce BSc and Post Graduate in Land Administration are ongoing.
		BSc Urban and Rural Planning		
		BSc Geomatics		
Kenya	University of Nairobi	BSc Real Estate	No	Up to 2005, the award was BA Land Economics specializing in land valuation and management while the surveying and planning are offered as BSc Surveying hosted by School of Engineering (5 years) and BA Urban and Regional Planning (4 years)
	Technical University of Kenya	5-year BSc Land Administration	Yes	Started in 2010
Uganda	University of Makerere	MSc in Land Administration (planned)	Yes	Not started, plans to set up BSc Land Administration shelved.
Rwanda	University of Rwanda	4-year BSc Estate Management and Valuation and	No	Two public University colleges offer programs related to Land Administration (College of Science and Technology, formerly Kigali Institute of Technology and Centre for GIS and Remote Sensing of the former National University of Rwanda)
	INES-Ruhengeri Institute of Applied Sciences	4 years- BSc Land Administration and Management	Yes	Introduced in 2012 hosted by Faculty of Applied Fundamental Sciences (AFS) parallel with a related 5-years BSc Land Survey program
Ethiopia	Bahir Dar University	4 year BSc in Land Administration	Yes	Introduced in 2006, hosted by Faculty of Law, M.Sc in LA started in 2012

Journal of Land Administration in Eastern Africa-ISSN 1821-7575

EDITORIAL POLICY AND SUBMISSION GUIDELINES

Purpose of the Journal

The evolving need for a multi-disciplinary approach in land administration has been well captured by the United Nations institutions drawing experiences from different countries across the globe. In East Africa, land administration is increasingly becoming a cross-cutting discipline and no longer limited to the mundane land allocation and use control enforcement processes. It is more diverse and anchored in information communication technology and democratic institutional systems within the land sector. For training institutions such as Ardhi University (ARU), the challenge has been to train the new brand of land administrator who will have to work with the single-discipline-trained land sector specialists.

The Journal of Land Administration in Eastern Africa (JLAEA) is publication of the Land Administration Unit that was set up at ARU in November 2009. JLAEA mirrors the aspirations of the Land Administration Unit at ARU whose mission is to ensure quality education and training, research, scientific publications, information dissemination, documentation and public services through integrated cross disciplinary team work in land administration. In November 2011, Ardhi University agreed to a suggestion by the newly established Eastern African Land Administration Network (EALAN) to make the Journal, a property of the network. The EALAN comprises of universities conducting education and training in land administration in Tanzania, Kenya, Uganda, Ethiopia and Rwanda.

Thematic Areas of the Journal

Main theme of the Journal revolves around the subject of land administration in Developing Countries with the following sub-themes:

- Land Tenure systems
- Land use and Management
- Land Markets and real estate valuation
- Land rights and access to land
- Land Conflicts and land dispute resolution
- Expropriation, Compensation Assessment

- Resettlement Planning
- Land value and taxation
- Surveying, mapping and titling
- Land reforms,
- Land policy and legislation
- Housing Development and Management
- Cadastre and land registration
- Cadastral reform, land consolidation
- Land Governance
- low cost technology in land administration

Publishers

The *Journal of Land Administration in Eastern Africa* is published by Ardhi University. It is a semi-annual publication.

Submission Requirements

Manuscript submission either in hardcopies or softcopies is acceptable. Submission via email is preferred.

Hardcopies Submissions

1. Manuscript should be written in English and must be original work. The manuscript should not be under review at the same for any other journal nor substantially resemble another manuscript under review at another journal.
2. The journal accepts Full Articles, Research Notes, Conference Reports, Book Reviews and Viewpoints. The viewpoint section exists for the expressions of opinions and allows authors to submit materials which may not be appropriate for a full article, but which contains ideas worthy of publication. Notices of forthcoming meetings are welcomed. Manuscript may be submitted electronically or in hard copies. In the first submission, the name and address of the author should be on a separate page.
3. Articles should include the author's name and affiliation and an address for correspondence. Authors should inform the Editors immediately of any change in address after a manuscript has been submitted. Articles will be subjected to peer reviewing and authors are expected to revise their papers as soon as comments from the reviewers become available.

4. Authors are responsible both for the views expressed in their articles and for the accuracy of any data quoted.
5. Broad divisions and section headings should be clearly marked in the text where appropriate. Any quotations should appear in double marks, with longer quotations (exceeding 40 words) appearing indented in the text. Each full paper should have an abstract of no more than 200 words, which should be complete, informative, succinct and understandable without recourse to the text.
6. Bibliographical references should be carefully checked. In the case of books these should be complete in respect of place and date of publication, and name of publisher, and in the case of journal articles, volume and issue number (where given) and year of publication, and relevant page numbers. References to privately circulated or mimeographed material should also contain the name of the appropriate department or institution concerned. References should appear at the end of each article and should be cited in the author/date system within the text. The Harvard style of formatting is preferred. Citations for articles with 3 or more authors should use 'et al'. Multiple citations using the same author and date should use 'a', 'b', 'c', etc, after the date to differentiate them. References should be listed alphabetically.
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 - a) Photographs may be black and white glossy prints digital color images. In the case of print photos, each should have lightly written on the back, the author's name, the figure number, and an indication of which is the top of the picture. Where lines or lettering are to appear on the photograph, two prints should be supplied, one appropriately marked and the other unmarked.
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- 11 Authors are expected to correct proofs expeditiously and to keep alterations to a minimum. If corrected proofs are not returned within a reasonable time of dispatch, the editors reserve the right to make final checks themselves and to proceed with publication. In general, the author's original transcripts will be regarded as definitive, except where matters of journal style or necessary correction of syntax, etc, have required editorial intervention. The publisher reserves the right to charge authors for excessive and unreasonable corrections made in proofs.
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Authors choosing to submit their manuscript via email must remove any identifying marks such as headers, footers and logos from the text and exhibits before submitting the file. Submission must be both in Word and PDF file formats.

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- To prepare web pages/screenshots simultaneously press the "Alt" and "Print screen" keys on the keyboard, open a blank

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Photographic images should be submitted electronically and of high quality. They should be saved as .tif or .jpeg files at a resolution of at least 300dpi and at least 10cm wide. Digital camera settings should be set at the highest resolution/quality possible.

Review of Articles

Articles that focus on land administration practice and training within the Eastern Africa are encouraged. Each paper will undergo a double blind peer review for purpose of ensuring quality and illustrating latest research and development in land administration. Based on reviewers' recommendation, as well as consultation between relevant Editorial Board members the editor then will decide whether the paper should be accepted as is, revised or rejected

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CALL FOR PAPERS- Special Issue on Fate of Customary Tenure Systems in Eastern Africa

The Journal of Land Administration in Eastern Africa will publish a special issue on the fate of Customary Land Tenure System in Eastern Africa in March 2015. Manuscripts focusing on the following themes and that are original contributions should be submitted to the Editor for consideration:

- i Status of Customary land rights in Eastern Africa Region
- ii Customary Tenure in Urban Areas
- iii Land Reforms in Post-Conflict Areas
- iv Evolution of Land Administration Structures in Africa
- v Land laws and their impact on Customary land Tenure

Manuscripts should be submitted to the editors by email attachment in Word for Windows. All submissions must include an abstract of not more than 300 words, as well as five key words for thematic indexing. On a separate page, authors must include their full name, current affiliation, contact information and postal details. All manuscripts and editorial correspondence should be addressed to The Editors, Journal of Land Administration in Eastern Africa

email: komu@aru.ac.tz or msangi@aru.ac.tz not later than 30 January 2015.



Journal of
Land Administration in
Eastern Africa

JLAEA
Volume.
No.
June, 2013

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