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Challenges in the provision of Housing in Arid and Semi-Arid Areas in Kenya: Case Study of Lodwar Town, Kenya

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Abstract:

This paper examines challenges facing the newly established County Governments, especially in Arid and Semi-arid Lands (ASAL) in Kenya after the promulgation in 2010 of the new constitutional dispensation order that created the devolved system of County Governments. The paper is based on a study carried out in Lodwar town, Turkana County whose main objective was to examine factors that hamper provision of housing in the ASAL regions of the country using Lodwar town as a case study. It is noted that Lodwar town sits largely on trust land, and currently does not have strict zoning regulations; it suffers from inadequate housing, public recreational facilities, health care facilities, infrastructure (roads, water, power, etc.) among others. In order to achieve the stated objective, the study adopted and adapted a mixed methods research strategy which allowed for collection of both quantitative and qualitative data from various sources (Mugenda, O.M. & Mugenda A.G 199; Kothari, 2004) which was then analysed using appropriate analytical tools. The study findings show that there is a shortage of housing for all income groups in Lodwar town due to inability of the Turkana county government to create an enabling environment for Public/Private Partnership (PPP) in housing provision.

Keywords: housing, ASAL, Lodwar, trust land, zoning regulations

1. Introduction

1.1. Decentralized System of Governance in Kenya

When Kenya got its independence in 1964, she obtained her constitution through rounds of Lancaster House talks between Kenyan nationalists and the British Colonial Office. The Lancaster House constitution provided for devolved governance through a bicameral legislature under the national assembly and regional assemblies which were commonly known as county councils. This form of government was seen as a panacea to development across the whole nation. However, this system was abolished within the first three years of self-governance due to fear/misconception of the leaders of the first government on the powers and privileges of the devolved units and replaced with a unitary/centralized system of governance. Due to imbalance in development across the nation, Kenya changed from the unitary system of governance back to the decentralized system following the promulgation of the new constitution of 2010. The decentralized system of governance is based on the principle of subsidiarity, which delegates certain roles and functions from the central unit to the lesser possible sub-centres (Nyanjom 2010). Decentralization is therefore the transfer of authority and responsibility for public functions from the central government to intermediate and local governments or quasi-independent government organizations and/or the private sector; it is a complex multi-layer concept. In government, such distribution of responsibilities could involve any one or more (among many) responsibilities, including problem identification, policy making, planning, revenue generation, budget execution, accounting and auditing, and monitoring and evaluation. An underlying logic behind decentralization is that it enlarges subnational participation in decision making over interventions and consequently enhances their local relevance and citizen participation in implementation which is noticeably achievable in the centralized system.

The Kenya constitution 2010 restored the devolved system of governance by establishing two levels of governance, the central and the county governments headed by the President and the Governor respectively. Article 174 (d) of Chapter Eleven (part 1) of the constitution highlights the objective of the devolved system to recognize the right of communities to manage their own affairs and to further their development while section (h) of same article provides for the devolved system to facilitate the decentralization of state organs, their functions and services from Nairobi, the capital of Kenya. Chapter Eleven (Part 2) provides for the establishment of 47 county governments that will each have a county assembly and county executive committee. Article 184 provides for the national Assembly to establish a national legislation (Urban areas and cities Act) which shall provide for the governance and management of urban areas and cities. In addition, Article 184 (1) (c) provides for participation by residents in the governance of urban areas and cities.

The Fourth Schedule of the Kenya constitution 2010 provides for the distribution of functions between the National government and the county Governments. Part 2 of this schedule gives the functions and powers of the county governments. The functions number 5 delegated to counties is on providing County transport, including - (a) county roads; (b) street lighting; (c) traffic and parking; and (d) public road transport. The other main function and powers delegated to

counties by the constitution within this schedule is on county planning and development, including - (a) statistics; (b) land survey and mapping; (c) boundaries and fencing; (d) housing; and (e) electricity and gas reticulation and energy regulation. Also, the Urban Areas and Cities Act under part II provide for the classification and establishment of Cities, Municipalities and Towns through giving the powers to the Governor on the resolution of the county assembly to give the status if it meets the set out criteria. The third part of the Act establishes the powers of boards on behalf of county governments to governance and management of urban areas. In addition, the County Government Act under section 5 provide for functions of the county governments in reference to the fourth schedule of the constitution. Section 6 of the act establishes the powers and responsibilities to the county governments in services delivery. The county executive committee has been empowered by the act the responsibility of ensuring that urban areas are planned through section 37. Part XI of County Government Act provides detail on physical planning at county level. All these responsibilities were under the central government with very limited participation of the local governments and the communities at the grassroots.

On housing as a basic need the new constitutional dispensation, Kenya Constitution 2010, provides for the Bill of Rights as an integral part of Kenya's social, economic development. Under chapter four, the constitution establishes that the State and every State organ should observe, respect, protect, promote and fulfill the rights and fundamental freedoms in the Bill of Rights. Section 43 (b) under the Economic and social rights, the constitution provides for right to accessible and adequate housing, and to reasonable standards of sanitation. Also Article 66 (1) of the constitution provides the State to regulate the use of any land, or any interest in or right over any land, in the interest of defense, public safety, public order, public morality, public health, or land use planning. These are responsibilities that the newly created 47 decentralized counties have to champion in bringing development to its subjects within their areas/regions of jurisdiction.

1.1. Planning Challenges in ASAL Areas

The arid and semi-arid lands (ASAL) of Kenya constitute the counties of Wajir, Mandera, Garissa, Isiolo, Marsabit, Tana River, Lamu, Samburu, and Kajiado. This area feels left behind in development as they have experienced less attentions on its prevailing challenges. The regions could contribute to achieving one of the four national goals of Affordable housing. The ASALs cover nearly 90% of the country's land mass and are home to nearly 30% of its population (Odhiambo 2013). Odhiambo 2013 added that the areas hold approximately 70% of the national livestock herd and are home to most of the country's national parks that are the foundation of its thriving wildlife tourism. Despite all these natural resources the ASAL areas have over years been left behind in development by the centralized system of governance through marginalization and the problems of community land trust ownership prevailing in these areas. In addition, the central government did not make physical development plans to direct development and set aside urban and rural lands.

1.1.1. Marginalization

The marginalization of the ASAL in Kenya may be traced back to pre-independence era during the formulation of government policy by necessities of restraint which saw much of the area designated as closed districts, movement in and out of which was strictly regulated. The leadership then used laws such as the Outlying Districts Ordinance 1902 and the Special Districts (Administration) Ordinance 1934, to restrict movement into and out of the territory that now constitute the counties. The marginalization was elevated during the post-independence in Kenya when the areas were left behind by the government in implementing the Sessional Paper No. 10 of 1965 on African Socialism and its Application to Planning in Kenya. The government focused national economic development strategies towards agriculture, investing resources in the so-called high potential areas which excluded the ASAL.

1.1.2. Community land

The ASAL areas sit on land owned by the community through the community land trust. The Kenya Constitution 2010, article 63 recognizes community land that includes land used for grazing. It establishes community land "to be vested and held by communities on the basis of ethnicity, culture or similar community of interest". This provides a constitutional foundation for engaging the community in provision of housing for its urban population. The communal land rights are critical for the functioning and access to land in pastoral and agro-pastoral systems of the ASALs. The key land rights in these systems are the right to own and use land as a community. It is therefore challenging in implementing the land rights whereas there is need to identify the members of, and the community unit and the rights they are entitled to. The interest for the use of land by the community unit may affect the provision of housing in the urban areas.

1.1.3. Zoning Regulations

The zoning plan is one of the four subsector plans in a Local Physical Development Plan (PDPs) (Handbook 2007). The plan serves as a an advisory document meant to give the guidelines on how to undertake developments within a given neighborhood. The zoning plan may be in form of land use zoning which provide the format in which sections or part of urban area can be available for land uses. These uses can be generally categorized under residential, commercial and industrial uses, public purpose, transportations or public utilities. Each sections of the urban area are assigned zoning regulations concerning the development of houses as laid out by the county governments. Another instrument of planning is the Master Plan document which is prepared in accordance with the land use standards and all laws and designs applicable to ensure providing of housing, infrastructure facilities and public facilities in harmony and functionally related.

2. The Study Area Context

2.1. National Context

Lodwar is located approximately 696 kilometers and 520 kilometers North West of Nairobi and Nakuru respectively and about 250km from the town of Lokichogio. The town is located within the larger Turkana County that borders internationally with South Sudan to the north-west, Uganda to the west and Ethiopia to the north east. There is West Pokot to the south, Marsabit to the east and Samburu to the south east which fall within the ASAL regions in Kenya (see Figure 1).

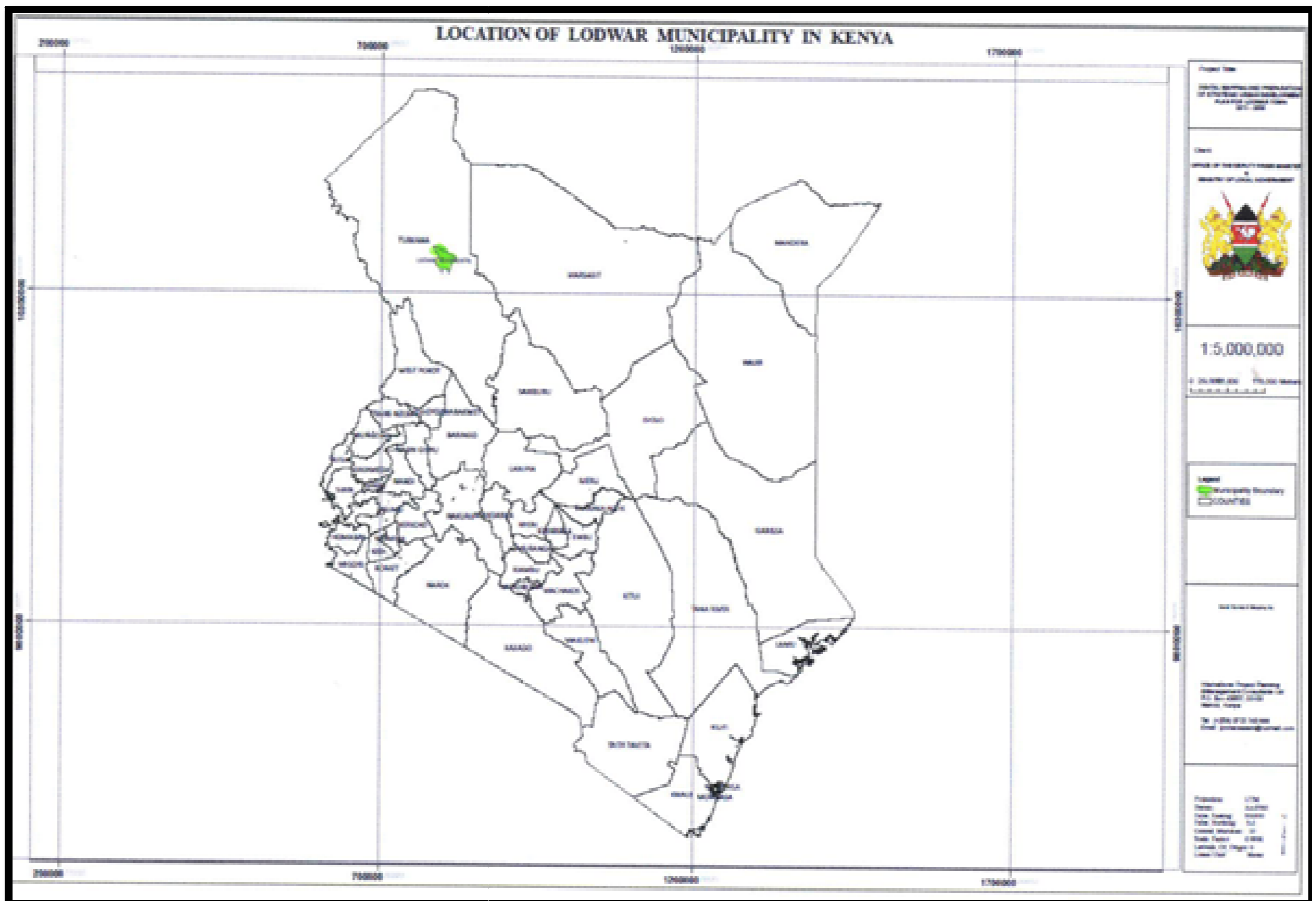


Figure 1: Map of Kenya Showing Position of Lodwar Town
Source: Integrated Strategic Urban Development Plan for Lodwar 2011-2030

2.2. Regional Context

Lodwar Town is situated in the Turkana County in the North of the Rift Valley Province and the Kerio Valley Development Authority (KVDA) region of Kenya. Turkana County forms part of the Arid and Semi-Arid Lands (ASAL) of Kenya and the northern-most section of the Great Rift Valley system in Kenya. The county is situated in the North-Western part of Kenya to the west of Lake Turkana. The county borders Ethiopia to the North-East, South Sudan to the North-West, and Uganda to the West. Within Kenya Turkana county also borders the counties of Baringo and West Pokot to the south, Samburu to the south-east and Marsabit to the east as indicated in the Figure 2. The county is situated between Longitudes 34° 0' and 36° 40' East and between Latitudes 10° 30' North and 5° 30' North of the Equator.

The County administratively comprises of Seven (7) Divisions, fifty-six (56) Locations and one hundred and fifty-six (156) Sub-Locations. Turkana County is politically divided into seventy – two (72) electoral wards while Lodwar town is divided into six (6) electoral wards. There are three Parliamentary constituencies in the Turkana county area namely: Turkana North, Turkana Central and Turkana South respectively. Lodwar Town is the largest town in the county and functions as the administrative, political and commercial centre of the Turkana County. It has served as a District and county council Headquarters for many years and is designated as the Headquarters of the new Turkana County under the devolved government system. Lodwar town also forms the regional transport and communication and commercial centre for the Turkana County. It is connected by road to Kitale town within Trans Nziya County to the south, to the Republic of Sudan via Lokichogio and to Lokitaung to the north and Kalokol centre on Lake Turkana to the east. Lodwar is also linked by road to Baringo County to the south, and Maralal municipality in Samburu County (see Figure 2). According to the 2030 vision plan for Kenya, Lodwar was recommended to be connected by Road and Rail transport corridor to the new Port planned which is now under construction at Lamu extending across Kenya to link with South Sudan in the north to the

north-west. This is expected to open up trading and development prospects that will spur considerable investment and economic growth in Lodwar town and its county region as a whole. It will also help link Turkana County and Lodwar town to the rest of Kenya and open up prospects for the economic and functional growth and expansion of the town in the wider international setting.

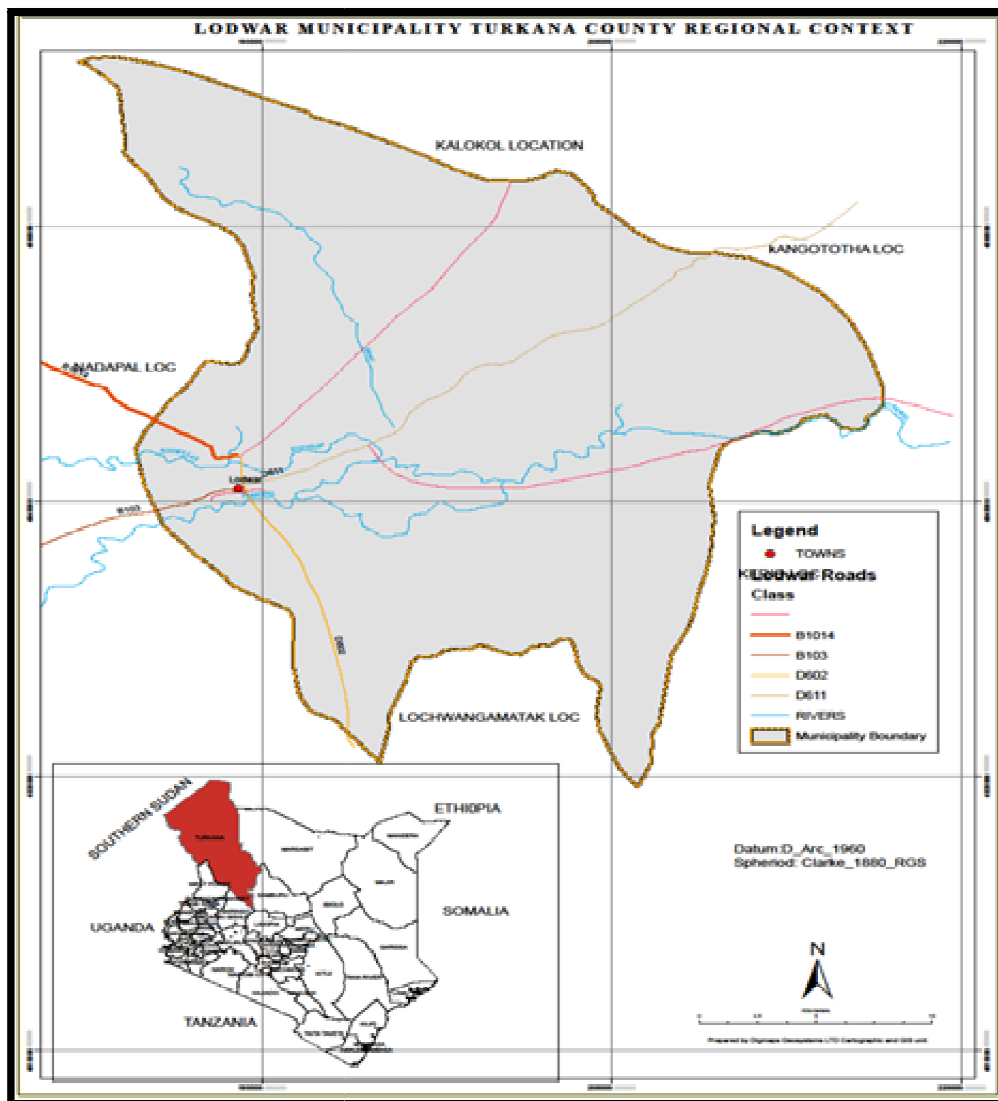


Figure 2: Lodwar Municipality in Regional Context

Source: Integrated Strategic Urban Development Plan for Lodwar 2011-2030

2.3. Population Characteristics and Social Profile

This section focuses on the population characteristics of Lodwar town, the study area. It examines the population size and distribution; its age and sex structures; and the size and composition of households.

2.3.1. Population Size and Distribution

The study area, Lodwar town, occupies the Central Division of the Central Turkana District in Turkana County. Based on the 1999 Population and Housing Census Lodwar town recorded a total population of 35,919 persons (Kenya National Bureau of Statistics, 2000). By 2009 the area's population had risen to 58,290 (Kenya National Bureau of Statistics, 2010a). This represents an increase of 62.3 percent over a 10 year period. Of the total 58,290 persons, 77.9 percent is found in the core urban area, 5 percent in the peri-urban area and 17.1 percent in the rural parts of the municipality. Table 1 presents the distribution of the population in the planning area by sex and the administrative units.

Administrative Units ¹	Sex		Total	Density
	Males	Females		
Lodwar Township:				
LodwarTownship	7 201	6 865	14 066	50
Nakwamekwi	4 965	5 320	10 285	420
Napetet	5 524	5 631	11 155	46
Sub-total	17 690	17 816	35 506	65
Kanamkemer:				
Kanamkemer	6 764	7 639	14 403	175
Nawoitorong	4 077	4 304	8 381	41
Sub-total	10 841	11 943	22 784	79
Overall total	28 531	29 759	58 290	70

Table 1: Lodwar's Population by Sex and Administrative Unit, 2009

Source: Kenya National Bureau Of Statistics (2010a): 2009 Kenya Population and Housing Census, Volume I A

2.3.2. Sex and Age Structure of Population

The sex ratio from the 2009 Population and Housing Census figures is 95.9 males for every 100 females. This is lower than the national ratio of 98.8 males for every 100 females. For lack of data specific to the study area, to capture the age structure of its population the age structure of the population of Turkana Central constituency within which Lodwar Municipality falls was relied on. As evident from Table 2, Central Turkana Constituency has a predominantly youthful population. Those aged below 35 years comprise 81.7 percent of the total population. Based on the age structure of the population, the area has a high dependency ratio (number of people in the dependent age groups 0-14 and 61+) of 104 persons for every 100 persons in the working age groups. Figure 3 provides the age pyramid of the population. This high dependency ratio suggests that those who are working must hold good jobs that will sustain the dependent population. It can also be concluded that the high dependency ratio is a major contributor to the high poverty rate in the area which has a negative impact on the quality and quantity of housing in the study area.

Age Group	Male	Females	Total	Percentage
0 - 4 years	19 775	18 864	38 639	15.2
5 - 9 years	21 425	20 500	41 925	16.5
10 - 14 years	20 726	19 382	40 108	15.8
15 - 19 years	17 667	15 261	32 928	12.9
20 - 24 years	11 096	11 530	22 626	8.9
25 - 29 years	8 460	9 565	18 025	7.1
30 - 34 years	6 018	7 620	13 638	5.3
35 -39 years	4 785	6 053	10 838	4.2
40 - 44y ears	3 609	4 269	7 878	3.1
45 - 49 years	2 981	3 605	6 586	2.6
50 -54 years	2 597	3 188	5 785	2.3
55 -60	2 941	3 436	6 377	2.5
61 + years	4 362	4 706	9 068	3.6
Age NS	95	88	183	0.0
Total	126 537	128 067	254 606	100.0
Ratios				
Dependency	104			
Sex Ratio	98.8			

Table 2: Distribution of Turkana Central Constituency's Population by Age Group, 2009

Source: Kenya National Bureau of Statistics (2010b): 2009 Kenya Population and Housing Census, Volume I B

¹ The administrative units used here are the location and sub-location

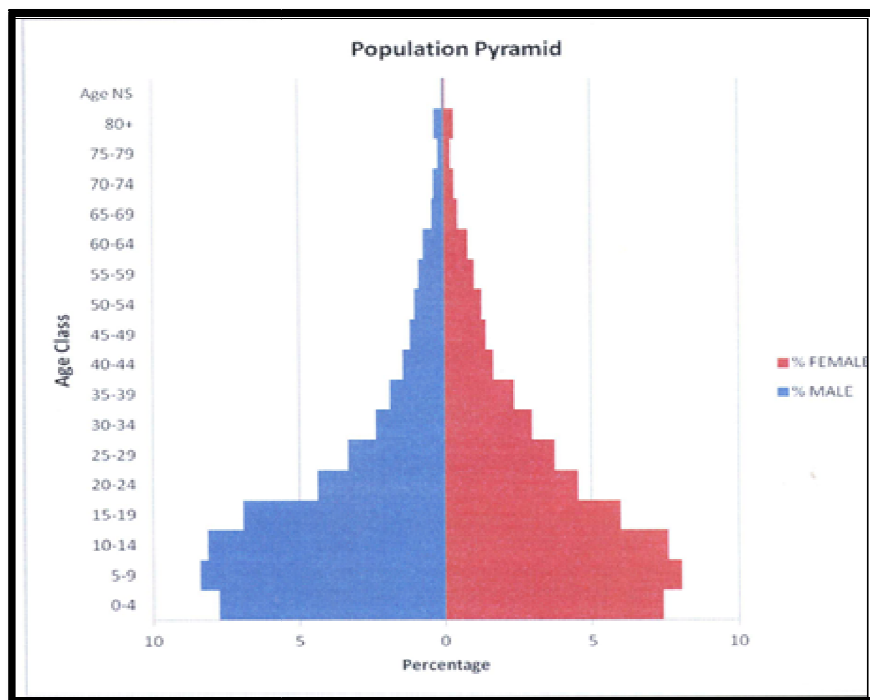


Figure 3: Population Pyramid for Turkana Central Constituency, 2009

2.3.3. Household Size

A critical variable in planning is the number of households. The household is a consumer of important resources and facilities such as land, water, energy and housing. The household size, on the other hand has implications for living conditions and the wellbeing of a population. Table 3 presents the distribution of households in Lodwar town by administrative unit (Division and Location) for 2009. The average household size for the town stood at 5.1 compared to the national average of 4.4 persons.

Administrative Units	Population	Total Households	Household Size	Percentage
Lodwar Township:				
LodwarTownship	14 066	2 906	4.8	25.4
Nakwamekwi	10 285	1 985	5.2	17.4
Napetet	11 155	2 181	5.1	19.0
Sub-total	35 506	7 072	5.0	61.8
Kanamkemer:				
Kanamkemer	14 403	2 758	5.2	24.1
Nawoitong	8 381	1 607	5.2	14.0
Sub-total	22 784	4 365	5.2	38.2
Overall total	58 290	11 437	5.1	100.00

Table 3: Number and Sizes of Households in Lodwar Municipality, 2009

Source: Kenya National Bureau Of Statistics (2010a): 2009 Population And Housing Census, Volume 1 A

2.3.4. Population Projections

The future growth of Lodwar township will be determined mainly by in- (and out-) migration of persons coupled with natural population increase. To capture future demographic changes in light of the present situation and underlying demographic processes, demographic projections were computed for the periods 2010 to 2020 and 2021 to 2030. For the period 2010-2020 the projections utilized annual growth rates calculated from the 1999 and 2009 census data. The average growth rate was 5.15 %. For the period 2021- 2030 the projections utilized the average growth rate of 6.50 %. Table 4 below presents the results of the projections.

Year	Location					Total
	Lodwar Town	Nakwamekwi	Napetet	Kanamkemer	Naiwotorong	
1999	11 338	6 381	5 883	6 894	5 423	35 919
2009	14 066	10285	11 155	14 403	8 381	58 290
2010	14 373	10 509	11 398	14 717	8 564	59 561
2011	14 686	10738	11 647	15 038	8 750	60 859
2012	15 006	10 972	11 900	15 365	8 941	62 184
2013	15 333	11 211	12 160	15 700	9 136	63 540
2014	15 667	11 456	12 425	16 042	9 335	64 925
2015	16 009	11 705	12 696	16 392	9 538	66 340
2016	16 357	11 960	12 972	16 749	9 746	67 784
2017	16 714	12 221	13 225	17 114	9 959	69 233
2018	17 078	12 487	13 544	17 487	10 176	70 772
2019	17 450	12 760	13 839	17 868	10 398	72 315
2020	17 831	13 038	14 141	18 258	10 624	73 892
2021	18 321	13 842	15 319	20 018	11 220	78 720
2022	18 825	14 222	15 740	20 569	11 529	80 885
2023	19 342	14 613	16 173	21 134	11 846	83 108
2024	19 874	15 015	16 618	21 715	12 171	85 393
2025	20 421	15 428	17 074	22 313	12 506	87 742
2026	20 982	15 852	17 544	22 926	12 850	90 154
2027	21 559	16 288	18 026	23 556	13 203	92 632
2028	22 152	16 736	18 522	24 204	13 566	95 180
2029	22 761	17 196	19 031	24 870	13 939	97 797
2030	23 387	17 669	19 554	25 553	14 322	100 485

Table 4: Population Projections for Lodwar Municipality, 2010 - 2030

2.4. The Social Sector

This section profiles the status of social facilities and services in the study area which are critical for a normal functioning human settlement. It focuses on educational facilities, healthcare services, places of worship, police services, post offices, and social (community) halls, with an emphasis on their distribution across the study area.

2.4.1. Education Facilities

This section describes the current status of educational services and facilities. The existing categories of educational institutions in Lodwar include 23 primary schools (4 private and 19 public), 6 secondary schools, a polytechnic and Mount Kenya University. This sector is faced with a number of challenges which include: Inadequate public education facilities (Schools, colleges, etc.); overcrowding in schools; long distances between schools; understaffing of schools; poor learning environment/facilities; high rate of school dropouts due to early marriages, poverty, etc.; Poor academic performance and an increase in the number of street children.

2.4.2. Health Facilities

The healthcare sector in Lodwar municipality suffers from inadequate public health care facilities. This is evident through: overcrowding in hospitals; referral of patients to private healthcare facilities; low doctor patient ratio; high death rate; low hygiene standards (at home, in hospital etc.).

2.4.3. Recreational Public Facilities

The recreational facilities are used mostly for relaxing and games. The dominant challenge is the lack of public recreational facilities, resulting in: idleness within the town, high levels of drunkenness and early pregnancies.

3. Methodology

Multiple research tools to collect the information for this study including quantitative and qualitative were used. The aim was to utilize different approaches including interviews, observations, discussions and review of documents relating to Lodwar in particular and Turkana County as a whole. Quantitative method was used to collect quantifiable information which included resident's demographic data that comprised of age/sex composition, while the socio-economic characteristics included housing needs of the residents of Lodwar. The main tool used in the quantitative method was an open ended structured questionnaire as opposed to pre-coded questionnaire which would restrict varying perspectives and experiences of people to fit into a limited number of pre-determined response categories to which numbers are assigned. Qualitative method was used to carry out in-depth investigation on the issues the study was investigating in order to generate a wealth of detailed information from a smaller number of people and cases. More emphasis was put on group discussion so as to elude free flow of information exchange in a more in formal and friendly environment.

4. Findings and Discussions

4.1. Housing

The term 'housing' is not synonymous with a 'house'. A 'house' is a single structure while 'housing' refers to the house with all the supports, i.e., infrastructure and other social amenities and facilities. The main consumer of urban land is residential use, typically accounting for about 60% of the total. Well planned and decent housing for the resident population is key to the socio-economic development of any urban area.

4.1.1. The Planning Policy

The planned part of Lodwar town is limited to a very small area which was carried out in 1983 by the ministry of physical planning. This plan however, was not fully implemented and as of now it is out dated considering that the population of Lodwar increased tremendously since then and there are more socio-economic activities on the increase that require properly planned land. This calls for a comprehensive planning policy that will be used to guide the growth of Lodwar town. The current policy in Kenya which governs planning is made up of a number of acts including: (i) The Physical Planners Registration Act of 1996, (ii) The Local Government Act Cap 265, (iii) The Government Land Act Cap 280, (iv) The Land Control Act Cap 302, (v) The Registered Land Act Cap 300, (vi) The Trust Land Act Cap 288, (vii) Registration of Titles Act Cap 281, (viii) The Land Titles Act Cap 282 (ix) The Official Secrets Act Cap 187, (x) The Antiquities and Monuments Act Cap 215, (xi) The Public Roads and Roads Access Act Cap 399, (xii) The Street Adoption Act Cap 406, (xiii), Public Health Act Cap 242, (xiv) Water Act No. 8 of 2002, and (xv) Environmental Management and Coordination Act (EMCA) No. 8 of 1999. The Physical Planning Act of 1996 of the Laws of Kenya, Cap 286, Sec 29, part V, Development Control is a preserve of the local authorities, Municipal Council of Lodwar being one of them. Development Control ensures that development applications comply with policy guidelines, planning regulations, standards, approved physical development plans and the local authority by-laws among other statutes that guide urban development with the objectives of ensuring growth of a healthy economy and a safe and secure built environment among others.

4.1.2. Zoning Regulations

The town of Lodwar currently does not have strict zones which development can follow. Instead there is haphazard mixed use development. Zoning as discussed earlier is the separation of land uses in order to avoid mixed development that can cause harm to human life. It is the physical division of urban community into districts or zones for the purpose of regulating the use of land and buildings, height and bulk buildings, plot coverage and density population. The main purpose of zoning is therefore to direct and regulate development or redevelopment of a town in appropriate directions and ensure proper uses of land and buildings with a view to creating a healthy, efficient and stimulating living environment.

4.1.3. Development Issues

The greater MCL covers an area of 700sq.km and the study area are 68 sq.km. The population of MCL according to 2009 census is 58,000 people. However, in the last 10 years MCL has experienced high population growth rate and development more than ever before. A rapid scan indicates that development has by far outpaced forward planning intervention measures. The developments have mainly been driven by the demand for housing, commercial and office developments.

4.2. Housing Status

There is a shortage of housing for all income groups in Lodwar. MCL has not developed any housing. The town is heavily depended on privately developed housing which caters mainly for the low to middle income groups. The county council of Lodwar manages a few residential houses which were left by NORAD, an NGO that moved out in late 1990s. These houses are mainly occupied by some of the government officers working in Lodwar. Housing in Lodwar is sparsely populated since there are no planned residential land use areas. The private sector plays a major role in the provision of housing in MCL. The quality of housing provided varies from very poor structures built out of temporary materials (mud and wattle, thatch, cow dung finish) to good quality permanent materials (concrete products-blocks, tiles, etc.; Iron sheets, steel products etc.). In between lies the semi-permanent structures built of a mixture of temporary and permanent materials.

Lodwar town currently does not have strict zones which development can follow. Instead there is haphazard mixed use development. The key findings in the housing sector in summary include; lack of decent affordable housing for the residents of Lodwar town; lack of security of land tenure for residential development by the residents and private developers; lack of initiative by the Government and the Turkana county government for the development of housing; residential land use not planned except for the central town centre; building materials too expensive; lack of affordable loan facilities for house construction/mortgage for Lodwar residents and no private developers (Realtors) to provide a mix of housing typologies based on housing needs of the residents.

4.2.1. Dream for Town with Regard to Housing

Residents were asked to state what type of town they wanted to live in. This was meant to make the residents think beyond just a house but in a sense 'dream' about the future environment in which they would love to live in. This question elucidated many responses with varying opinions as shown in Table 5.

No.	Identified Aspects of Concern	Frequency	Valid Percent
1	Building of permanent houses	84	15.8
2	Town plan for residential houses	127	24.0
3	Affordable houses for all	80	15.1
4	Modern housing units-flats, maisonettes etc.	82	15.5
5	Government to build decent but cheap houses for the poor	31	5.8
6	More real estates	39	7.4
7	Resettlement of IDPs	8	1.5
8	Government to sell its unused land to the public	3	.6
9	Affordable building/ mortgage loans	6	1.1
10	Proper surveying of plots	5	.9
11	Reduce building construction cost	12	2.3
12	Free housing for the IDPs and the vulnerable	14	2.6
13	Relocation of residential houses from town to villages	1	.2
14	Open up peri-urban villages for residential	4	.8
15	No shanties in town	1	.2
16	Relocation of people living near the airstrip	1	.2
17	Free land for investors	2	.4
18	More land for housing expansion	22	4.2
19	More government houses for government officials	8	1.5
	Total	530	100.0

Table 5: Aspects of Concern Identified by Residents with Regard to Housing

Four main aspects /concerns were raised by the residents including building of permanent houses, having a town plan for residential houses, building/providing affordable houses for all and build modern housing units including flats, maisonettes, etc. These aspects accounted for about 70% of the 19 concerns raised.

4.2.2. Housing Typologies

A detailed inventory was carried out during the field survey to identify the types of housing that were occupied by the residents. It was noted that seven typologies were identified in the town as shown in Table 6. The predominant (60.6%) house typology was single room which obviously does not offer the required comfort for a household of even two people considering the activities that require space including sleeping, cooking, resting, etc. The scenario presented here shows a mismatch between what people's aspirations and wishes are and what is on the ground as shown in Table 6. The residents talked of wishing to live in modern houses including apartments and maisonettes in addition to bungalows. In this case only 16.3% housing typologies are bungalows.

No.	Typology	Frequency	Valid Percent
1	Bungalow	94	16.3
2	Single rooms	350	60.6
3	Manyata	51	8.8
4	Huts	61	10.6
5	Double rooms	17	2.9
6	Three rooms	4	.7
7	Four rooms	1	.2
	Total	578	100.0

Table 6: Type of House Occupied

4.2.3. The Size of the Dwelling

The respondents were asked to state the number of rooms the house they were living in has (see table 7). The majority (79.6) of the respondents interviewed live in one room units. It can be argued that due to shortage of decent housing, there is subletting of single rooms in the two or three rooms units.

Rooms	Frequency	Valid Percent
1	463	79.6
2	50	8.6
3	57	9.8
4	12	2.1
Total	582	100.0

Table 7: Rooms occupied by Household

4.2.4. Adequacy of Present Housing

Respondents were asked whether their current housing was adequate for their household needs (see Table 8), 42.6% said it was. With further discussion, it was established that most of the people renting houses in Lodwar town from outside Turkana County have left their families behind. This was attributed to various reasons including lack of facilities for their family members including education, health, recreation, etc. in Lodwar.

		Frequency	Valid Percent
Valid	Yes	234	42.6
	No	315	57.4
	Total	549	100.0

Table 8: Adequacy of Current Housing Unit

4.2.5. Ideal Size of Housing Unit

In terms of adequacy of their current housing unit, respondents were asked to state the number of rooms they needed for their household to live comfortably (see Table 9). A majority (55.7%) of the respondents preferred to live in a 3 and 4 rooms housing unit. Considering the housing units available for rental, the implications are that they are inadequate in size.

No. of Rooms	Frequency	Valid Percent
Valid	0	1
	1	4
	2	21
	3	80
	4	105
	5	53
	6	43
	7	11
	8	6
	9	1
	10	3
	11	1
	12	3
	Total	332
		100.0

Table 9: Ideal Number of Rooms

4.2.6. Ownership of the Dwelling

In terms of house ownership of the dwellings, the study found out that 50.2% of the respondents own the houses they live while 46.4% rent as shown in Table 10. Further interrogation during discussions on the origins of the owner occupiers showed that these were local residents an indication that Lodwar had not attracted many outside investors during the time of this study.

		Frequency	Valid Percent
Valid	Owner Occupied	290	50.2
	Employer	8	1.4
	Rental	268	46.4
	Squatter	9	1.6
	Lives with relative	3	.5
	Total	578	100.0

Table 10: House Ownership

4.2.7. Mode of Delivery for Owner Occupied Houses

Table 11 illustrates the mode of delivery for the owner occupied houses. It is worth noting that purchased houses were bought from individuals and not a property developer. The majority (72.3%) of the house owners constructed their own houses. This implies that there was some security of tenure on the land on which they were building their houses on. It is noteworthy that Lodwar town and by extension Turkana county is a trust land hence no individual land ownership titles as discussed earlier.

		Frequency	Valid Percent
Valid	Purchased	35	11.6
	Constructed	219	72.3
	Inherited	48	15.8
	Donation	1	.3
	Total	303	100.0

Table 11: Owner Occupied Housing Delivery Mode

4.2.8. Provision of Rental Housing

Rental housing which accommodates 46.4% of the residents of Lodwar town (see Table 10), 89.9% is provided by individual developers as shown in Table 11. The central and county governments were not involved in creating conducive environment for the investors. The key to this is the security of tenure for investors to confidently invest in this town.

		Frequency	Valid Percent
Valid	Government	5	1.9
	Local Authority	14	5.4
	Parastatal	2	.8
	Private company	4	1.6
	Individual	231	89.9
	Church	1	.4
	Total	257	100.0

Table 12: Provision of Rental Housing

4.2.9. Elemental Construction Materials of the House

The study found out that 48.% of the structures in Lodwar were built out of semi-permanent and temporary materials, while structures built out of permanent materials accounted for 51.4% as shown in Table 12. The materials used on the houses were classified as permanent (concrete and burnt clay products and systems; Timber, Iron and steel products), semi-permanent (Tin roof, mud and wattle plastered wall, screened murrum/hardcore floor) and temporary (old tin, polythene, thatch roof cover, mud and wattle/off cuts/old tin walling and murrum floor). One of the reasons why almost half of the structures are not permanent was highlighted as the high cost of building materials.

	Roof	Wall	Floor	Overall
Permanent	59.7	47.5	47.1	51.4
Semi-permanent	20.9	34.3	25.1	26.8
Temporary	19.4	18.2	27.8	21.8
Total	100.0	100.0	100.0	100.0

Table 13: Elemental Analysis of Building Materials

5. Conclusion and Recommendations

5.1. Challenges

The areas of concern in the housing sector begin with the lack of decent affordable housing for the residents of Lodwar town. This has led to residents living in overcrowded conditions and in poor quality structures. This condition is tied to the existing condition of lack of security of land tenure for residential development by the residents and private developers. No developer wants to invest where there is no security of land tenure. Trust land in Lodwar does not provide the opportunity for housing development by individuals. In addition, there is very little initiative by the Government and the County government for the development of housing for the residents of Lodwar town; in fact, residential land use is not planned except for the central town centre, the rest of the town remains unplanned with no regulatory planning and building by-laws to support systematic planned housing development. This has had implications on the private sector initiative in investing in Lodwar town. The other factor is the cost of building materials being too expensive due to the location of Lodwar from major cities of Kenya where building materials are generally available in many outlets. This leads to very expensive housing product in turn high rents/mortgages if any. The residents lack of affordable loan facilities for house construction/mortgage.

5.2. Opportunities

There are many opportunities for solving problems and challenges highlighted above. arising from the preparation of the Integrated Strategic Urban Development Plan (ISUDP) for Lodwar town for the period 2011-2030 that was finalized in 2012 opens opportunities for solving most of the above highlighted problems especially land use planning and the city's future growth. In addition, the devolved governance (County structure) within the framework of new constitutional dispensation in the country offers real opportunity due to close touch with local development issues. Other opportunities will spring from the Lamu Port South Sudan Ethiopia Transport (LAPSSETT) corridor project, provides opportunities for the development of Lodwar town and the larger Turkana County. The Vision 2030 development strategy for the country covers development areas in Turkana county and Lodwar town for example, upgrading of the airstrip to an international airport.

5.3. Proposals

In order for Lodwar town to sufficiently house its residents, a number of proposals are summarized based on the findings of the study as follows:

- The Lodwar county government should initiate a housing development programme to cater for the residents of Lodwar. This will involve both the public and the private sector partnership. The private sector will participate in such a programme only if guaranteed economic returns. There is need therefore for the government to provide an enabling environment for investors to have confidence.
- Lack of security of tenure is key in the development of housing by the residents and any other actor. It is important that the land tenure system be changed from the current trust land to leasehold owned by the Turkana County government. Thus, Turkana county government will be able to allocate land to investors in the various sectors including housing.
- The current strategic plan of Lodwar town which was finalized in 2012 and approved in 2013 provided the direction of growth of the Lodwar town. The various land uses including residential, commercial, industrial, etc., were planned and are expected grow in a more organized manner than it has been. This planning exercise been completed successfully, now is the implementation that should be carried out to the letter.
- The cost of building materials is about 60 percent of the total cost of a house. Thus, the use of locally available materials will cut down on the cost of the finished dwelling. However, the central government and the Turkana county government should reduce the levies charged on locally available building materials in order to attract private investors and for the local residents to be able to build their own houses.
- A mechanism should be put in place by the government to make the cost of long term building loans cheaper than the available commercial loans on the market. This should be through local initiatives and resources set aside through for example, cooperative bank, national bank and any other innovative loan facility arrangements.

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