



MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING AND
URBAN DEVELOPMENT (STATE
DEPARTMENT FOR HOUSING & URBAN
DEVELOPMENT)

**CONSULTANCY SERVICES FOR PREPARATION
OF THE PROGRAMME MASTER PLAN OF THE
AFFORDABLE HOUSING AGENDA UNDER THE
BIG FOUR**

Demand/market analysis

16 December 2018



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FAO: Charles Hinga Mwaura

16 December 2018

Dear Charles,

Re: Consultancy Services for Preparation of programme master plan of the affordable housing agenda under the Big Four

In accordance with Contact Agreement MTIHAD/HUD/HD/35/2017-18 between KPMG Advisory Services Limited ("KPMG") and Ministry of Transport, Infrastructure, Housing and Urban Development ("MoTI") dated 12th June 2018 for provision of consultancy services for preparation of programme master plan for delivery of one (1) million housing units (the "Contract"), we enclose a copy of our final Demand/Market Study Report dated 16 December 2018.

Our report is for the benefit and information only of those Parties who have accepted the terms and conditions of the Contract and should not be copied, referred to or disclosed, in whole or in part, without our prior written consent, except as specifically permitted in the Contract. To the fullest extent permitted by law, we will not accept responsibility or liability to any other party (including those Parties' legal and other professional advisers) in respect of our work or the report. This draft report has been prepared on the basis of fieldwork carried out up to 26 October 2018.

We draw your attention to the important notice included on the next page.

Yours faithfully

Sheel Gill
Director

KPMG Advisory Services Limited



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KPMG shall not be under any obligation in any circumstance to update any advice or report, oral or written, for events occurring after the advice or report has been issued in final form.

Glossary

Bn.	Billion
Br	Bedroom
CBK	Central Bank of Kenya
CEC	County Executive Committee
Contract	Contact Agreement MTIHUD/HUD/HD/35/2017-18 between KPMG Advisory Services Limited and Ministry of Transport, Infrastructure, Housing and Urban Development dated 12 th June 2018 for provision of consultancy services for preparation of the programme master plan of the affordable housing agenda under the big four
GDP	Gross Domestic Product
GoK	Government of Kenya
HFB	Housing Finance Bank
HFC	Housing Finance Company of Kenya
HOSP	Home Savings Plan
HPI	Housing Price Index
KBA	Kenya Bankers Association
KCB	Kenya Commercial Bank
KE	Kenya
KENSUP	Kenya Slum Upgrading Programme
KPI	Key Performance Indicator
Ksh	Kenya Shillings
KIHBS	Kenya Integrated Household Budget Survey
KISIP	Kenya Informal Settlement Improvement Project
KMRC	Kenya Mortgage Refinance Company
KNBS	Kenya National Bureau of Statistics
KPDA	Kenya
KPLC	Kenya Power
M&E	Monitoring and Evaluation
Mn	Million
N/A	Not Applicable
NHC	National Housing Corporation
NHDF	National Housing Development Fund
NPL	Non-Performing Loan
NUDP	National Urban Development Policy
pa	per annum
PPP	Public Private Partnership
REP	Rural Electrification Programme
RW	Rwanda
SACCOs	Savings and Credit Cooperative Organisation
SCB	Standard Chartered Bank
TZ	Tanzania
UG	Uganda
UN	United Nations
USD	United States Dollar

Key Definitions

Phrase	Description
Affordable Housing	Housing that is affordable to Kenyan households with a monthly income below Ksh 100,000.
Housing Demand	Housing demand refers to the ability to purchase a house due to availability and access to finance. Housing demand makes allowance for affordability.
Housing Need	Housing need is the total number of new housing units required if all households are adequately housed. It refers to the number of houses required, given growth in households and is computed as the sum of the current deficit and the net emerging housing need.
Income bands	Gross monthly income in Ksh received by households grouped into the following bands: <ul style="list-style-type: none">• 0 - 4,999• 5,000 - 9,999• 10,000 - 14,999• 15,000 - 19,999• 20,000 - 24,999• 25,000 - 29,999• 30,000 - 49,999• 50,000 - 99,999

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1 Executive summary

GoK has defined the "Big Four" transformation agenda for the Nation which identifies four priority initiatives to be implemented over the next five years 2017 – 2022, core among them is the delivery of 1,000,000 affordable housing units. This is driven by GoK's commitment to its international agreements and treaties which recognise access to decent, affordable and adequate housing as a human right and an important component of the right to adequate standard of living.

The State Department for Housing and Urban Development charged with the mandate of structuring and delivering the Affordable Housing Programme under the "Big Four" transformation agenda contracted KPMG to develop the master plan for the Housing Programme.

1.1 Project scope

In developing the master plan for the Affordable Housing Programme, KPMG's scope of work was divided into four key parts:

- Market study of housing demand in Kenya.
- Development of sustainable housing supply strategy.
- Internal diagnostic of NHC and development of a high level strategic roadmap.
- Case studies and benchmarking of Affordable Housing Programmes across the globe.

This report is focused specifically on the market study of housing demand in Kenya. KPMG gathered insights on the current housing deficit, housing price index and market preferences for housing across different income segments. The insights were used to make projections on the demand for affordable housing in urban areas for the next 5, 10 and 20 years.

1.2 Survey Approach and Methodology

KPMG conducted surveys across the country to gather insights into the supply and demand for affordable housing in Kenya, to understand preferences for housing in relation to property type, financing option and payment terms. Implications of the survey findings on the Housing Master Plan have been considered.

The survey approach and methodology consisted of four phases:

- **Survey design:** The survey was conducted across all 47 counties, targeted different players in the housing sector including developers, financiers, county officials, households and utility connectors amongst others.
- **Data collection:** Data was collected through desktop research and interviews with multiple stakeholders including government officials, property developers, housing financiers and Kenyan households.
- **Data analysis:** Data collated was entered into a central database and analysed to provide inferences for the Affordable Housing master plan.
- **Reporting and conclusions:** KPMG provided insights on the current housing deficit in Kenya, market preferences for housing across each income segment and estimates on housing demand of the proposed houses under the affordable housing program.

1.3 Situational analysis

1.3.1 Housing finance market

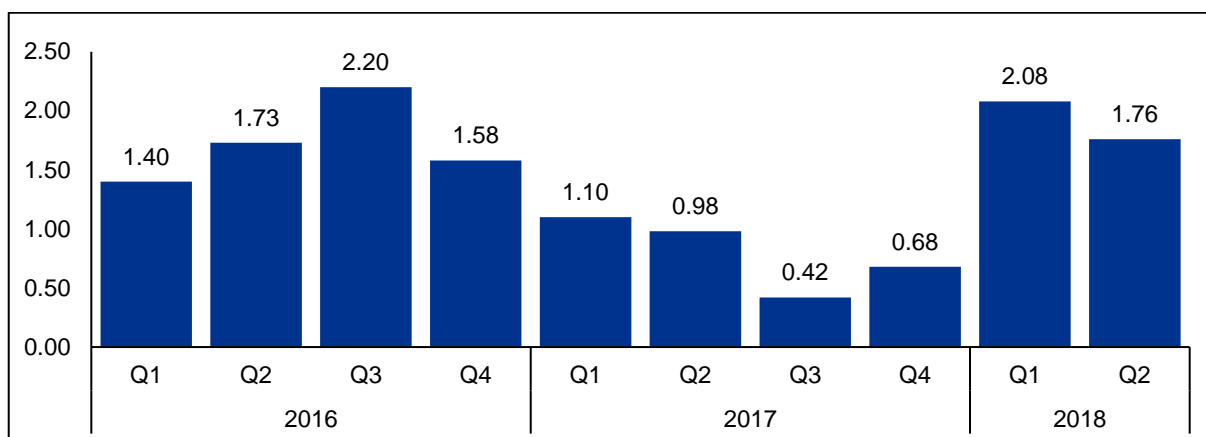
Kenya's economy is gaining momentum, largely supported by improved weather conditions, rainfall and political stability. GDP growth in Kenya is expected to recover to 5.5 % in 2018 and steadily rising to 6.1 % by 2020¹.

Housing contributes to quality of life and is a major component to economic growth due to the multiplier effect that investment in housing has on job creation and poverty alleviation. Kenya requires approximately 200,000 new housing units annually to meet demand, yet only 50,000 homes are built, leaving the housing deficit growing by 150,000 units per year². The mismatch between demand and supply has led to rising house prices thereby excluding low income earners from the formal housing market, keeping them in slums³.

The low income group in Kenya has a housing deficit of over 2 million units⁴, with approximately 61% of urban households living in slums. According to KNBS, the average household size in Kenya is 4.0, household size tends to be larger in rural areas at 4.5, compared to urban areas at 3.3.

House prices in Kenya are recovering following a downturn in 2017 attributed to voluntary investment freeze due to the national elections. The price recovery seen over the first two quarters in 2018 is a manifestation of increased demand for housing.

Figure 1: House price change in Kenya (%) – 2016-Q2 2018



Source: KBA

The average mortgage loan in 2017 was Ksh 10.9 million⁵. Assuming an interest rate of 13.5% per annum, a 10% deposit and a tenure of 15 years, this translates to monthly mortgage payments of Ksh 127,365, which is unaffordable for most Kenyans.

Limited access to affordable housing is further exacerbated by the fact that traditional mortgage products are often not targeted at low income earners and generally exclusively cater only for salaried employees. Majority of low income earners are in the informal sector with irregular income.

¹ World Bank Kenya Economic Update - Policy options to advance the Big 4 (April 2018)

² Kenya Property Development Association – Affordable Housing Investment in Kenya (2018)

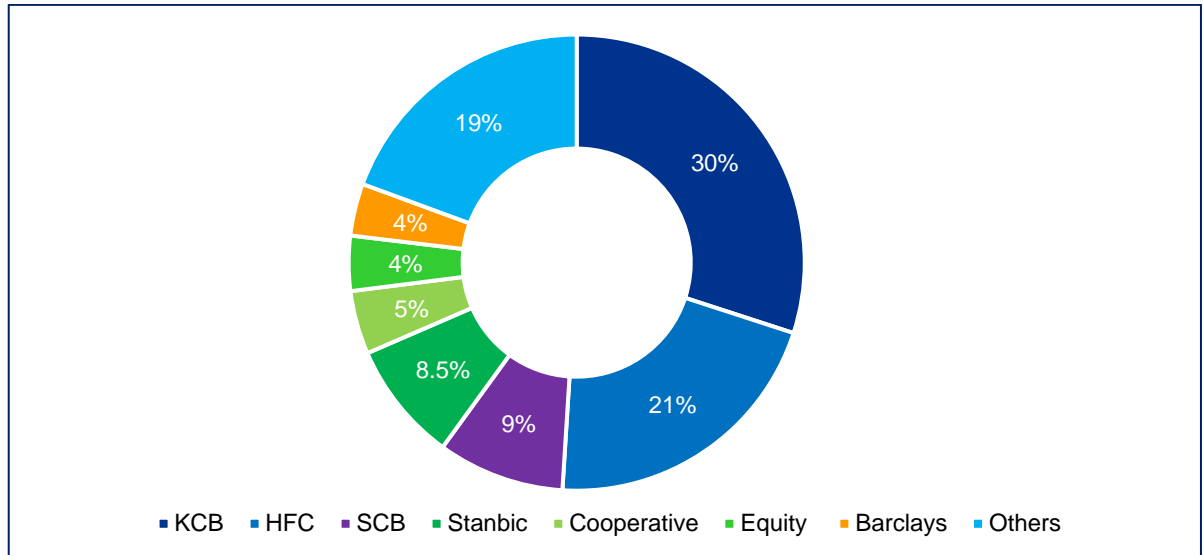
³ The ABCs of Affordable Housing in Kenya – Acumen Fund

⁴ World Bank (April 2017) - Kenya Needs 2 Million More Low-income Homes: Building Them Would Boost Its Economic Growth <http://www.worldbank.org/en/country/kenya/publication/kenya-needs-2-million-more-low-income-homes-building-them-would-boost-its-economic-growth>

⁵ Central Bank of Kenya – Banking Supervision Annual Report (2017)

The mortgage market is dominated by a few players with KCB owning 30% of the market, followed by Housing Finance Corporation (21%), Standard Chartered Bank (9%) and Stanbic (8.5%).

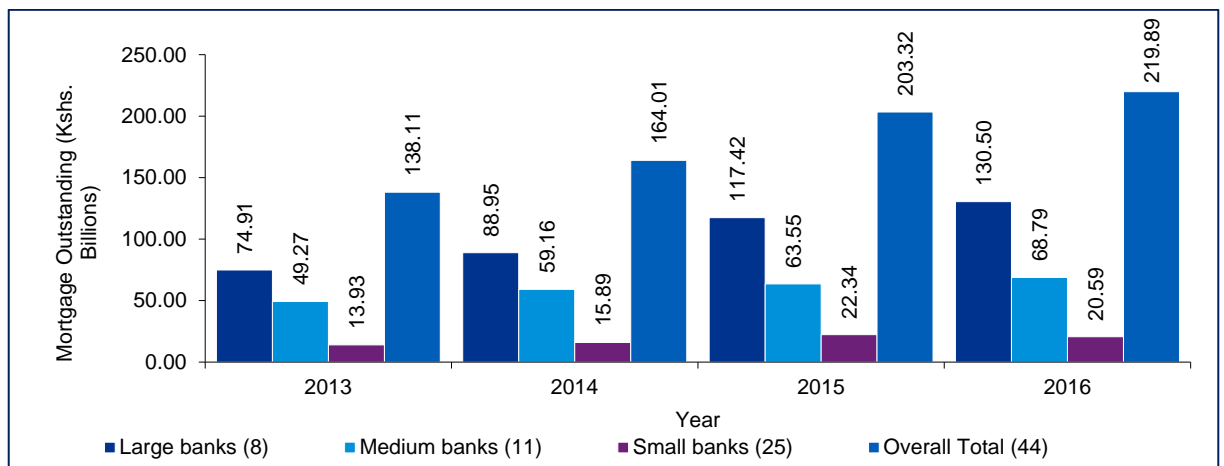
Figure 2: Market Share of key players in the Kenyan Mortgage Market in 2017



Source: CBK

Similarly, an analysis of commercial banks by size shows that the large banks dominate the mortgage market in Kenya. This is consistent with the above chart that shows KCB, the largest bank by assets holding 30% of the mortgage market in 2017.

Figure 3: Share of mortgage market by bank size



Source: CBK

The barriers to housing development and affordability in Kenya include:

- Low levels of income
- Limited access to affordable long term finance
- High cost of land for construction
- Use of traditional, high cost, materials in construction
- High incidental cost of mortgages (i.e. legal fee, valuation fee, stamp duty).
- Bureaucracy that leads to difficulties with property registration and transfer of ownership documents such as title deeds.

- Inadequate policies and regulations that stimulate growth in the housing sector.
- Lack of Public-Private Partnerships (PPPs) focused on affordable housing.

Below are factors for considerations to stimulate growth in affordable housing market and to address the challenges of affordability faced by low income earners.

Challenge	Recommendation
High cost of financing to buyers	<ul style="list-style-type: none"> – Engage CBK to determine options of reducing the mortgage interest rate. – Provide subsidies to the housing sector mortgage providers to reduce the general cost of financing to this sector. –
High cost of financing to developers	<ul style="list-style-type: none"> – Provide a subsidy to the developers to reduce the cost for construction, infrastructure, compliance and land.
Bureaucracy in transferring title	<ul style="list-style-type: none"> – Simplify and digitise the process of approvals in order to eliminate the need for brokers and middlemen. – Rationalise GoK's taxes, fees and rates in the transfer of affordable housing properties. The total cost of GoK's related cost to transferring property title should not exceed 5% on the cost of the property. <ul style="list-style-type: none"> – Provide a specialised semi-autonomous entity with authority to issue title to property. – Establish a legal framework for settling of disputes during the tenure of the mortgage.

1.3.2 Housing market preferences

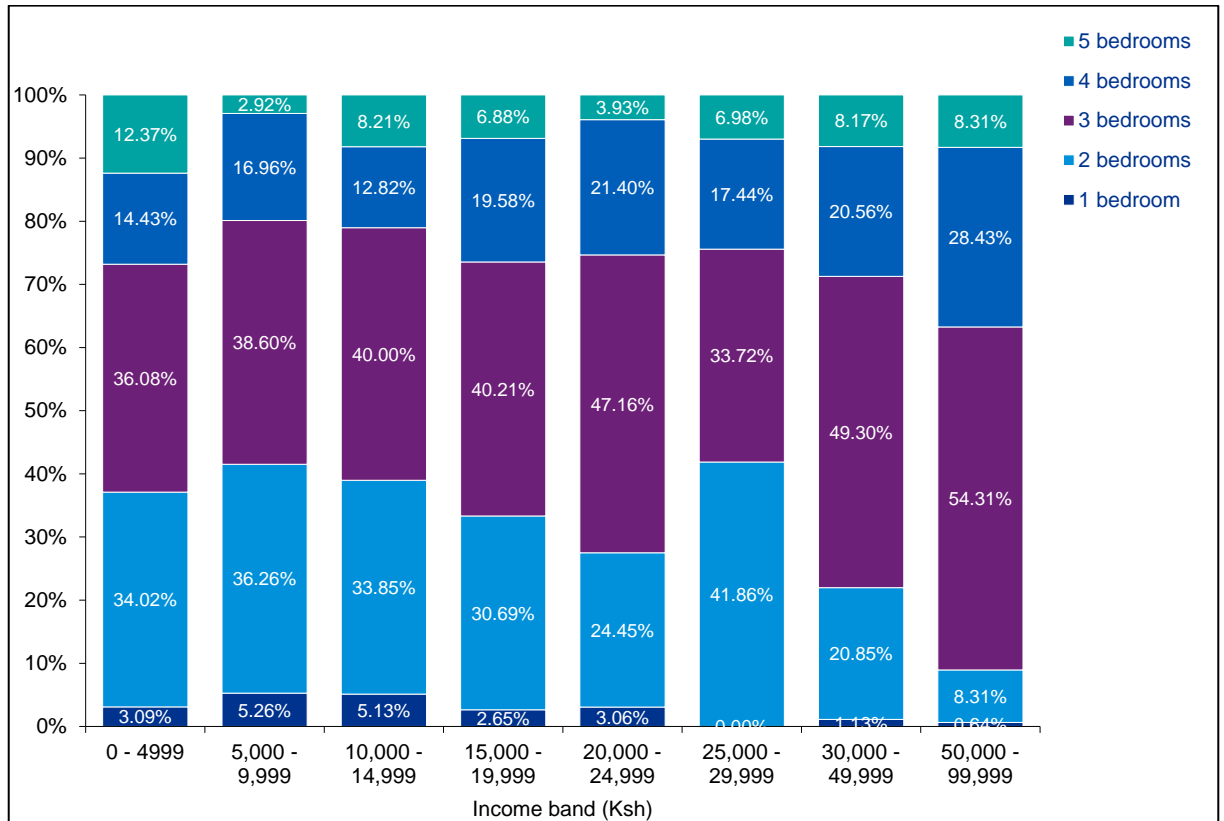
KPMG's survey gathered insights on housing market preferences across all income bands in Kenya. The survey questionnaire aimed to understand preferences with regards to ownership, dwelling features, financial and environmental requirements amongst others. . A summary of the key findings and its impact is provided below.

Number of rooms

The survey highlighted that three bedroom dwelling are the most preferred by Kenyans. KPMG recommends that SDHUD consider this particular house type and increase allocation in the Affordable Housing Programme to three bedroom dwelling.

Social guidelines require that children's bedrooms be separated by gender from the age of 10. Furthermore, cultural practices by most tribes in Kenya practise this separation. It is KPMG's view that this should be the prevalent option available to households participating in the affordable housing scheme.

Figure 4: Preferred number of bedrooms by income band

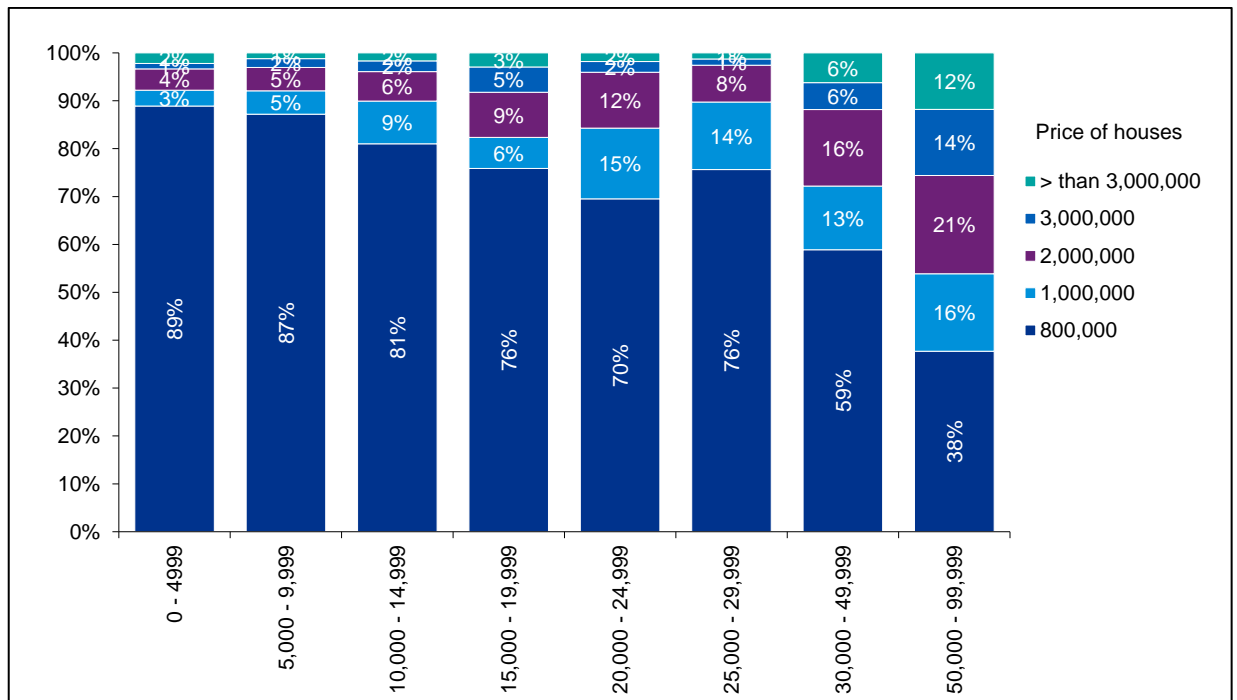


Source: KPMG/SDHUD household survey

Affordability

As expected and as per human nature, the lowest cost was selected as the most affordable house. Over 70% of survey respondents with household income below Ksh 30,000 indicated that Ksh 800,000 was the ideal price they could afford for housing. KPMG recommends that this finding be interpreted to mean Kenyans want to pay the least cost.

Figure 5: Preference on affordability by income band

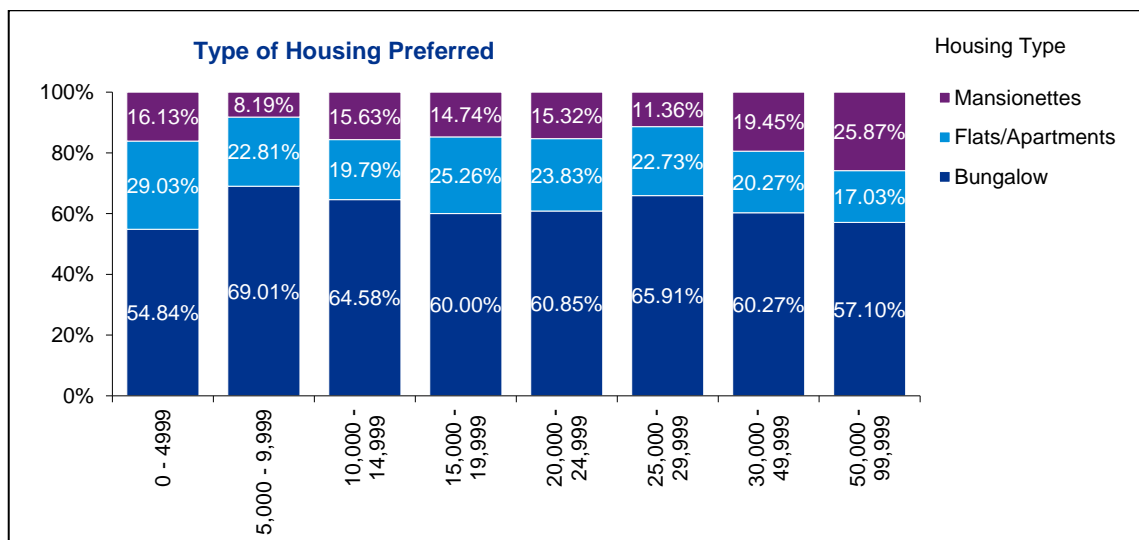


Source: KPMG/SDHUD household survey

Housing type

The survey results showed that detached houses such as bungalows are preferred across all income bands. There is a need to ensure that the amenities and privacy enjoyed by residents in detached houses are transferrable to the apartments (e.g. well maintained common area is an example of an amenity to be made available in apartment buildings).

Figure 6: Preference on housing type by income band



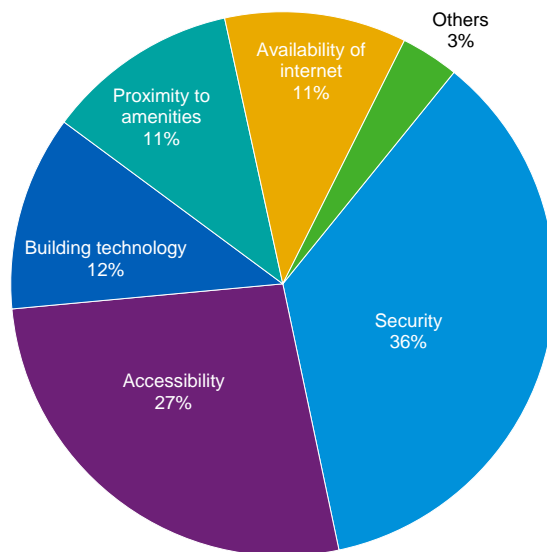
Source: KPMG/SDHUD household survey

Housing environmental features

To understand the most important environmental features for selecting a place to live, the respondents were asked to rank in order of priority, accessibility, proximity to place of work, availability of garden/backyard, security, proximity to family, proximity to shops, availability of internet, open space, smart technology, safety and security and building technology.

Survey results showed that safety and security ranked as the most important consideration when choosing a place to live followed by access to transport as the second most important factor. The least important factor when choosing a place to live across the country was proximity to family followed by availability of internet.

Figure 7: Most important environmental features



Source: KPMG/SDHUD household survey

KPMG recommends that security and reliable public transport system be prioritised in the design and implementation of the Affordable Housing Programme.

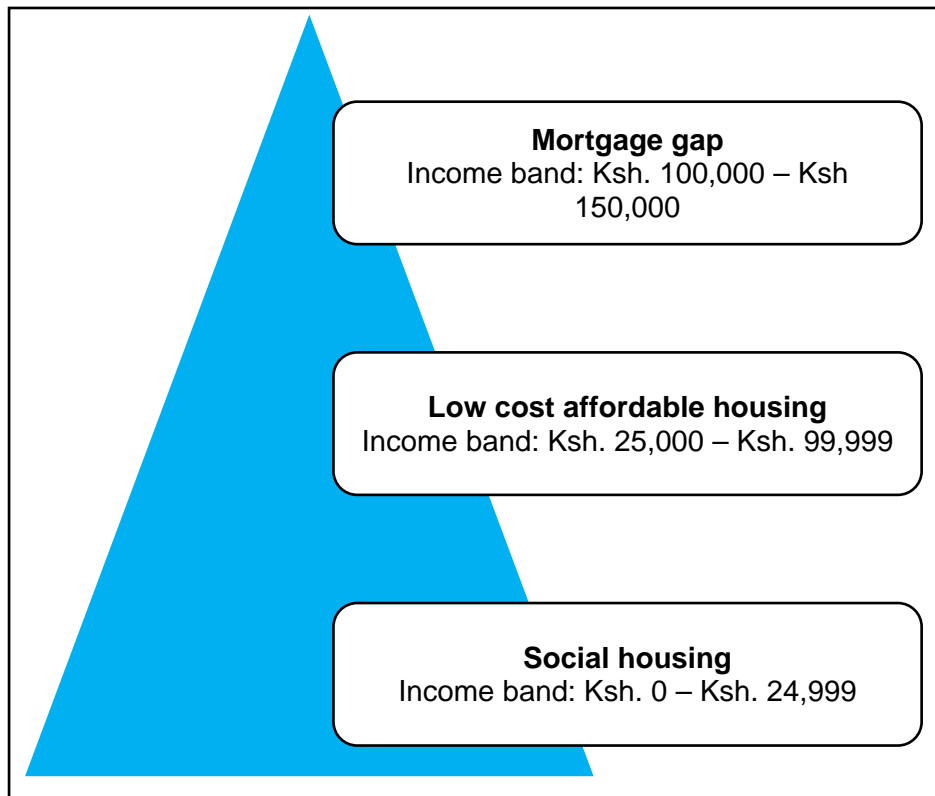
1.3.3 Segmentation of the housing market

KPMG's recommendation of segmentation of the housing market is as follows:

- The Mortgage gap is for households with income between Ksh 100,000 and Ksh 150,000. The households in this income group are not catered for by the commercial banks. It is therefore highly likely that this income group will find innovative ways to benefit from GoK's housing programme. This includes but is not limited to subleasing and fronting upcountry relatives to be allocated the house. Commercial banks consider this income band to be too risky. There is also low demand for commercial mortgages at the current mortgage interest rate of 13.5% per annum. However, if the mortgage interest rate was lowered, commercial banks may be able to fund this income group.
- Low cost affordable housing can be provided through the government funding for households with monthly incomes between Ksh 25,000 and Ksh 99,999. This income group cannot be served by commercial banks. Further GoK intervention

- would be required such as a reduction of interest rates. This group falls into the Affordable Housing Programme by GoK.
- Social housing could be provided to income groups earning below Ksh 25,000 monthly as they are not considered for a mortgage. This is because due to the fixed basic nature of the other costs of living leaving disposal income for housing insufficient. A budget for housing at this income level is unaffordable. Therefore, we recommend that this income group be considered for subsidised renting while taking into account the key tenements of adequate housing.

Figure 8: Proposed segmentation of the housing market



Source: KPMG Analysis

Note: Slum upgrading should not be based on household income but on location of the slum. The households in the slum can then be accommodated within the social housing segment.

1.3.4 Kenya's slum upgrading strategy

Slum upgrading refers to physical improvements in shelter and infrastructure⁶ of slums. It also includes economic and social interventions that enable such improvements of slums.

In conjunction with other stakeholders, GoK has initiated two programmes, The Kenya Slum Upgrading Programme (KENSUP) and the Kenya Informal Settlement Improvement Project (KISIP) guided by the National Slum Upgrading and Prevention Policy (NSUPP). These programmes are aimed at achieving a number of objectives including provision of urban land for private sector-led development of low cost housing, slum rehabilitation and upgrading.

⁶ Enabling shelter strategies: Design and implementation guide for policy makers; quick policy guide series – volume 2; UN habitat

Key success factors for the successful implementation of slum upgrading strategies

- a) Delegated decision making: One key aspect of the slum upgrading programmes was delegated decision making in which the decision making role was to be cascaded down to the lowest level, resulting in a much greater role for local authorities. The principle behind delegated decision making was to guarantee accountability and efficiency in the delivery of services. In addition, this also promotes partnerships between the central and local governments and between local governments and communities.
- b) Capacity building: In an effort to achieve sustainable interventions, capacity building of the local communities and local government is key. It is key to address the relationship between the community and the government sectors through e.g. training forums, as this is the way to create sustainable capacity building initiatives.
- c) Inclusive participation: KENSUP attempts to ensure that community members are involved in slum upgrading and acknowledges the diversity of stakeholders in the community. Involving the local authority and communities will largely contribute to the success of the initiative as the National government has little influence on the day to day activities.
- d) Partnerships: Slum upgrading programmes favour broad-based partnerships between the key stakeholders including local government, National government, civil society and the private sector. These partnerships promote community participation, capacity building, empowerment and efficient resource utilisation.
- e) Communication: In an effort to upgrade the slums of the designated regions, it is necessary to keep the participating communities and local authorities well informed of the ongoing development projects so as to maintain their commitment.
- f) Gender awareness: Gender awareness must permeate all of the activities of the slum upgrade programme, if the slum upgrading interventions are to be successful i.e. they have to cater for the needs of both men and women.
- g) Empowering community members: Training community members in practices such as construction, water supply, sanitation and solid waste management is crucial in slum improvement.
- h) Financial empowering of community members: Community members can be encouraged to form cooperatives to allow for collective ownership of property which was previously beyond their reach.
- i) High rise flats where land is scarce: Where planning regulations allow, particularly in Nairobi, high rise (ground plus 12 levels) flats should be developed to accommodate as many as possible.
- j) Consideration of housing size preferences: Tenant purchase option be adopted in the proportion of 70:30 for two-roomed and three-roomed accommodation, respectively.
- k) Choices in transitional housing arrangements: Facilitate the tenants to find alternative locations to stay as they await the construction of the housing units, while motivating the structure owners to demolish their own structures and salvage materials if possible.
- l) Make firm commitments to the communities about project delivery timelines and sale prices. The housing prices at the time of completion and the completion

dates for Kibera were not communicated to the prospective house owners until the time of occupation.

- m) Professional project management of such developments: For professional project management and seamless decision making, project management teams (consulting team, construction, finance and management) should be under one developer who handles all the aspects of the development. The recovery of development cost can be realized from a combination of:
- Offsetting housing cost through monthly management fees for developed houses over the period of 25 years.
 - GoK paying the developer the balance of the other costs through land swaps.

The housing demand analysis shown in the rest of this report focused primarily on affordable housing and excluded the developments made by GoK's slum upgrading programme.

The GoK's slum upgrading programme has not been taken into account in the calculation of demand summarised below and in this report.

1.3.5 Cultural Impact on the housing market

There are traditional and modern cultural practices that impact home ownership.

Traditional home ownership has been defined as home ownership as influenced by pre-colonial African culture. Livelihood streams in this era mainly consisted of pastoral nomadism, land based agriculture, long distance trading, community raids and fishing. The settlements' location was mainly influenced by land availability and/or water bodies where the communities undertook their economic activities.

Methods of land acquisition for communities that settled in one place included inheritance, ownership by right of land clearance and in some cases, purchase by barter trade.

Examples of traditional cultural practises that affect home ownership include:

- Initiation rites: This marks the transition between childhood and adulthood for young people. Separate huts were constructed for the young men to signify maturity and preparation for marriage.
- Taboos: Interactions between different genders, age groups and in-laws were closely monitored, with certain prohibitions being put in place. For example, in some communities, it was/is considered a taboo for a man to be in his in-laws house at night or for a son in-law and the mother in-law to share a meal in the same room or sleep under the same roof. Certain rites had to be undertaken for this to be permissible.

In modern times, rapid urbanisation has resulted in an exodus of young people from rural areas in search of employment. Culturally, once a young man reaches 18 years of age, they are expected to fend for themselves as well as support their families. Due to their financial status at the time, majority are not able to afford decent housing and more often than not, result in living in the slums. A few are housed by their relatives living in better living conditions.

The need to own a home among young adults (20-30 years) is greatly influenced by the need to provide housing for their future families. Two schools of thought exist amongst this age group namely:

- All other factors being constant (access to land, mortgage facilities etc.), persons who are interested in owning a family home now would rent it out as a source of income in the short term and then use it as a family home in future.
- If one could afford a smaller home for their current needs, it would be to reduce the burden of having to pay rent today. This home would then be rented out or given to another family member once their needs changed.

For this group, access to reliable public transport is critical as they felt that they would not mind living outside the core cities or towns in a bid to get affordable housing, but it was critical that they would still be able to access their places of work, followed by the other social amenities such as shopping centres and entertainment spots.

1.4 Housing Demand Projections

1.4.1 Approach to determining housing demand for the next 5, 10 and 20 years

KPMG adopted an affordability approach to determine housing demand, premised on the household trends contained in the latest three household surveys. These include the 2009 census, 2012/2013 household survey and the 2015/16 Kenya Integrated Household Baseline Survey (KIHBS).

Summary of the steps followed in estimating the housing demand for the next 5, 10 and 20 years:

Step 1: Determine the housing deficit in baseline year 2016

Step 2: Project the number of total households in Kenya in 5, 10 and 20 years and the emerging household need over the same period

Our approach considered two methods to determine the growth rates for household size going forward.

- *Method 1: Projections based on the historical growth of household size*
- *Method 2: Projection based on population growth and a constant household size. This Method 2 is presented in the appendix.*

In this report we use Method 1, a methodology that projects the growth of households because historically the growth in households was higher than the population growth. This implies a decrease in household size overtime.

Step 3: Project the housing supply in Kenya in 5, 10 and 20 years

Step 4: Determine the proportion of urban households to rural households in each county in 5, 10 and 20 years

Step 5: Based on KPMG survey results, determine the distribution of urban households per income band in each county

Step 6: Based on KPMG survey results, apply the ratio of tenants in each income band to the number of urban households distributed among the income bands.

Step 7: Based on the 30% housing budget ceiling and the proposed house prices, analyse the income bands that can afford each proposed housing type.

Step 8: For each housing type, extract the number of urban tenants in the income bands that can afford to finance the purchase of the proposed houses, based on a 30% housing budget ceiling, using three mortgage rate scenarios.

These steps are explained in detail below.

Step 1: Determine the total number of households in Kenya including inadequate housing

In 2016, KNBS estimated that the total number of households in Kenya was 11.4mn, this formed the baseline for our analysis of housing demand in Kenya. Our analysis showed that approximately 3.2 Mn of the total households in 2016 had inadequate housing (i.e. houses with temporary walling material).

Step 2: Determine the projected number of total households in Kenya in 5, 10 and 20 years

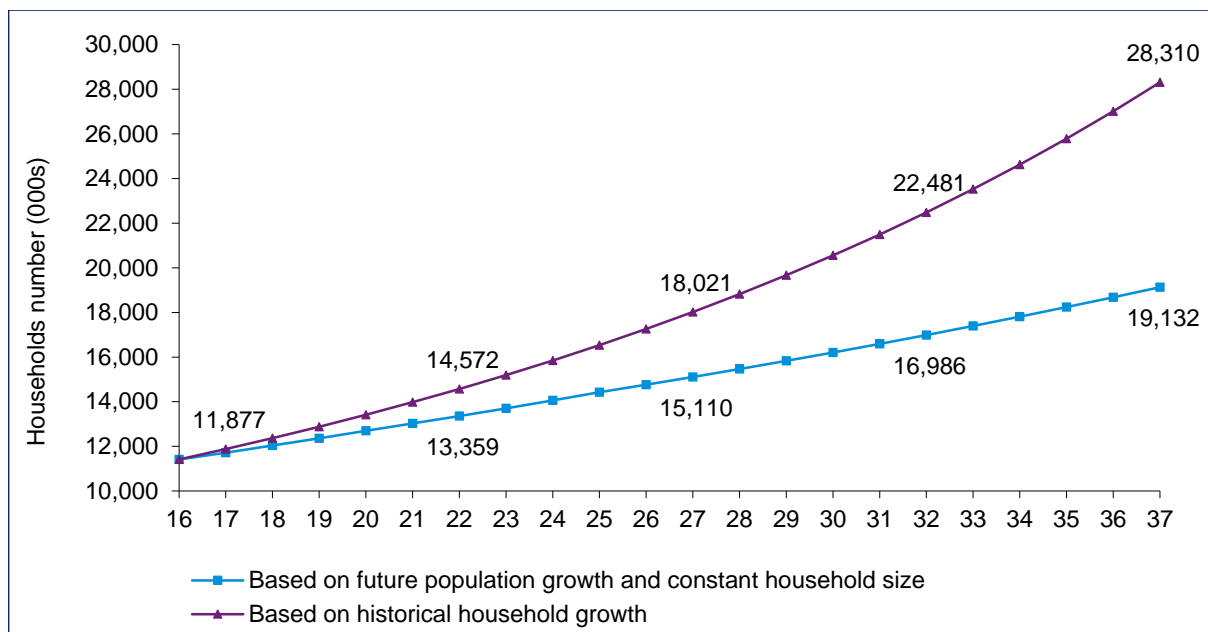
In projecting total number of households, we assumed that household growth is not necessarily equal to population growth, although they are correlated. Growth of households is driven by the increase and changes in composition of the adult population as well as their earning capacity and not the increase in the overall population.

The household size, which is the ratio of population to households, varies by generation, culture, age, race, level of education and nativity. Thus, as the make-up of the adult population changes so does the population's average household size.

Consequently, KPMG's household based approach differs from the projection done by the Kenya National Bureau of Statistics (KNBS) on household growth. Whilst KPMG has taken into consideration the growth rate in the number of households from 2009 population census, the 2012/13 household baseline survey and the 2015/16 KIHBS to determine the rate at which households will grow, KNBS has based its household growth on population growth, assuming an average household rate of four persons per house. KPMG's findings indicate that average household rates will decline to three by 2037 denoting a higher rate of growth in the number of households.

We compared the number of households based on population growth (whilst holding average county household size constant at 4.3) and historical household growth (which implicitly reduces average county household size overtime to 3.6 in 2022 and 2.7 in 2037). The number of households based on household growth is projected to more than double in the 20 year period from 11.4 million in 2016 to 28.3 million in 2037 while projection based on population growth only increases to 19.1 million households in 2037.

Figure 9: Projected number of households ('000s) 2017-2037



Source: KPMG Analysis

KPMG's approach in estimating the housing demand for the next 5, 10 and 20 years uses the number of households based on household growth which is projected to reach 28.3 Mn in 2037.

Step 3: Estimate housing supply in Kenya in 5, 10 and 20 years

To determine the housing supply in the country, KPMG requested each County Executive Committee (CEC) member to provide information on the number of approvals for housing in their respective county over the past five years (2013 to 2017). We received responses from 31 counties while 16 counties did not respond. The following table shows 45,660 approvals from data collected from the CEC members for 2013-2017.

Table 1: Number of approvals per county (2013–2017)

	2013	2014	2015	2016	2017	Total
Bomet	20	22	26	22	34	124
Bungoma	-	-	-	-	1	1
Busia	-	64	108	49	60	281
Kajiado	-	-	998	790	715	2,503
Kakamega	-	257	865	783	585	2,490
Kericho	23	53	201	205	135	617
Kiambu	-	-	-	262	313	575
Kirinyaga	-	173	179	165	182	699
Kitui	-	104	108	96	52	360
Kwale	-	-	-	110	93	203
Laikipia	-	35	148	141	54	378
Makueni	121	182	266	95	128	792
Meru	-	312	501	508	324	1,645
Migori	107	30	75	48	-	260

Mombasa	-	-	1,365	1,257	1,046	3,668
Murang'a	162	191	125	99	90	667
Nairobi	2,170	2,072	2,025	1,711	619	8,597
Nakuru	2,150	1,750	2,560	2,200	1,668	10,328
Nandi	56	56	53	87	80	332
Nyamira	32	66	52	95	78	323
Nyandarau	108	163	108	172	195	746
Nyeri	223	335	357	406	406	1,727
Samburu	-	-	-	-	14	14
Siaya	61	95	195	320	397	1,068
Taita-Taveta	24	35	39	53	59	210
Tana River	13	17	-	-	-	30
Trans-Nzoia	163	595	393	451	24	1,626
Turkana	135	270	364	258	500	1,527
Uasin Gishu	754	855	714	614	556	3,493
Vihiga	65	56	53	76	52	302
West Pokot	12	6	9	28	19	74
Total	6,399	7,794	11,887	11,101	8,479	45,660

Source: KPMG Survey

KPMG applied professional judgment and market knowledge to estimate the number of approvals in 2017 for the 16 unresponsive counties being Baringo, Elgeyo-Marakwet, Embu, Garissa, Homa Bay, Isiolo, Kilifi, Kisii, Kisumu, Lamu, Machakos, Mandera, Marsabit, Narok, Tharaka-Nithi and West Pokot. Furthermore, KPMG assumed that each approval represents 4 housing units on average in 2017. Finally, KPMG projected the supply of housing units to increase by 2.5% annually in the period 2017 to 2037 based on industry stakeholder interviews. The table below incorporates these changes to arriving at total projected approvals of 81,809 by 2037. This indicates a significant shortfall in supply (81,809) compared to the demand (irrespective of affordability and type) calculated in Step 2 of 28.3 Mn. in 20 years.

Table 2: Projected housing supply (2017 – 2037)

County	2017	2022	2027	2032	2037
Baringo	246	278	315	356	403
Bomet	139	158	178	202	228
Bungoma	205	232	262	297	336
Busia	246	278	315	356	403
Elgeyo-Marakwet	246	278	315	356	403
Embu	246	278	315	356	403
Garissa	41	46	52	59	67
Homa Bay	246	278	315	356	403
Isiolo	62	70	79	89	101
Kajiado	2,932	3,317	3,753	4,246	4,804
Kakamega	2,399	2,714	3,070	3,474	3,930
Kericho	554	626	709	802	907
Kiambu	1,283	1,452	1,643	1,859	2,103

County	2017	2022	2027	2032	2037
Kilifi	221	250	283	321	363
Kirinyaga	746	844	955	1,081	1,223
Kisii	480	543	614	695	786
Kisumu	4,289	4,852	5,490	6,211	7,027
Kitui	213	241	273	309	349
Kwale	381	431	488	552	625
Laikipia	221	250	283	321	363
Lamu	221	250	283	321	363
Machakos	221	250	283	321	363
Makueni	525	594	672	760	860
Mandera	213	241	273	309	349
Marsabit	213	241	273	309	349
Meru	1,328	1,503	1,700	1,924	2,177
Migori	1,328	1,503	1,700	1,924	2,177
Mombasa	4,289	4,852	5,490	6,211	7,027
Murang'a	369	417	472	534	605
Nairobi	8,200	9,278	10,497	11,876	13,437
Nakuru	6,839	7,737	8,754	9,905	11,206
Nandi	328	371	420	475	537
Narok	328	371	420	475	537
Nyamira	320	362	409	463	524
Nyandarua	800	905	1,023	1,158	1,310
Nyeri	1,665	1,883	2,131	2,411	2,728
Samburu	57	65	73	83	94
Siaya	1,628	1,842	2,084	2,357	2,667
Taita-Taveta	242	274	310	350	396
Tana River	242	274	310	350	396
Tharaka-Nithi	242	274	310	350	396
Trans-Nzoia	98	111	126	143	161
Turkana	2,050	2,319	2,624	2,969	3,359
Uasin Gishu	2,280	2,579	2,918	3,302	3,735
Vihiga	213	241	273	309	349
Wajir	213	241	273	309	349
West Pokot	78	88	100	113	128
Total	49,926	56,486	63,909	72,307	81,809

Source: KPMG analysis and projections

Step 4: Determine the proportion of urban households to rural households in each county in 5, 10 and 20 years.

The Project scope is limited to housing demand in urban areas, therefore KPMG projected the number of urban households in each county in 5, 10 and 20 years.

Population census 2009 was used to determine the baseline for the proportion of rural to urban households across each county. We used the 2009 population census as the baseline because it was the latest nationwide survey that had urbanisation rates per county. We then estimated the urbanisation rate in 5, 10 and 20 years based on historical urbanisation rates in the period 2009 – 2016. The table below shows the

proportion of urban households to total households in Kenya for each county in 5, 10 and 20 years. . These % are used in, Step 5, determining the number of urban households per income band in each county.

Table 3: Proportion of urban households to rural households (2017-2037)

County	2016	2017	2022	2027	2032	2037
Baringo	15%	16%	20%	24%	29%	35%
Bomet	15%	16%	19%	24%	28%	34%
Bungoma	21%	22%	26%	32%	39%	47%
Busia	15%	16%	19%	23%	28%	34%
Elgeyo-Marakwet	19%	20%	24%	29%	36%	43%
Embu	21%	22%	27%	33%	40%	48%
Garissa	30%	32%	39%	47%	57%	68%
Homa Bay	19%	20%	24%	30%	36%	43%
Isiolo	59%	61%	75%	91%	100%	100%
Kajiado	55%	58%	70%	86%	100%	100%
Kakamega	19%	20%	24%	29%	35%	42%
Kericho	52%	54%	66%	80%	97%	100%
Kiambu	84%	87%	100%	100%	100%	100%
Kilifi	34%	35%	43%	53%	64%	77%
Kirinyaga	21%	22%	27%	32%	39%	47%
Kisii	27%	28%	34%	41%	50%	60%
Kisumu	70%	73%	89%	100%	100%	100%
Kitui	18%	19%	23%	28%	34%	41%
Kwale	24%	25%	30%	37%	45%	54%
Laikipia	27%	28%	34%	41%	50%	60%
Lamu	26%	27%	33%	41%	49%	59%
Machakos	69%	72%	88%	100%	100%	100%
Makueni	15%	16%	20%	24%	29%	35%
Mandera	23%	24%	30%	36%	44%	53%
Marsabit	30%	31%	38%	46%	55%	67%
Meru	10%	11%	13%	16%	19%	23%
Migori	45%	47%	58%	70%	85%	100%
Mombasa	100%	100%	100%	100%	100%	100%
Murang'a	19%	20%	24%	29%	36%	43%
Nairobi	100%	100%	100%	100%	100%	100%
Nakuru	61%	63%	77%	94%	100%	100%
Nandi	18%	19%	23%	28%	34%	41%
Narok	9%	9%	11%	14%	17%	20%
Nyamira	17%	18%	22%	27%	33%	39%
Nyandarua	26%	27%	33%	40%	48%	58%
Nyeri	32%	34%	41%	50%	60%	73%
Samburu	22%	23%	29%	35%	42%	51%
Siaya	14%	15%	18%	22%	27%	32%
Taita-Taveta	23%	24%	29%	36%	43%	52%

County	2016	2017	2022	2027	2032	2037
Tana River	20%	21%	26%	31%	38%	45%
Tharaka-Nithi	30%	31%	38%	46%	55%	67%
Trans-Nzoia	26%	27%	34%	41%	49%	59%
Turkana	16%	17%	20%	25%	30%	36%
Uasin Gishu	52%	54%	66%	80%	97%	100%
Vihiga	42%	44%	54%	65%	79%	95%
Wajir	18%	19%	23%	29%	35%	42%
West Pokot	11%	11%	14%	17%	20%	25%

Source: KPMG analysis and projections

Step 5: Based on KPMG survey results, determine the number of urban households per income band in each county

Based on the results of the KPMG survey, the households in urban centres will increase from 5.5 million in 2017 to 20.3 million in 2037. The table below shows the number of urban households per income band in select counties for illustrative purposes only.

Table 4: The number of urban households per income band (2017-2037) for select counties*

Income band (Ksh)	2017	2022	2027	2032	2037
Garissa					
0 - 4,999	693	891	1,139	1,447	1,828
5,000 - 9,999	2,079	2,674	3,417	4,342	5,485
10,000 - 14,999	4,852	6,239	7,973	10,130	12,798
15,000 - 19,999	4,852	6,239	7,973	10,130	12,798
20,000 - 24,999	5,545	7,130	9,112	11,578	14,626
25,000 - 29,999	693	891	1,139	1,447	1,828
30,000 - 49,999	2,772	3,565	4,556	5,789	7,313
50,000 - 99,999	3,465	4,456	5,695	7,236	9,141
Total	24,951	32,084	41,006	52,100	65,816
Kajiado					
5,000 - 9,999	17,849	28,352	44,762	67,816	88,047
10,000 - 14,999	17,849	28,352	44,762	67,816	88,047
15,000 - 19,999	17,849	28,352	44,762	67,816	88,047
20,000 - 24,999	35,697	56,703	89,523	135,633	176,093
30,000 - 49,999	35,697	56,703	89,523	135,633	176,093
50,000 - 99,999	13,387	21,264	33,571	50,862	66,035
100,000 +	13,387	21,264	33,571	50,862	66,035
Total	151,714	240,989	380,473	576,438	748,397
Mombasa					
5,000 - 9,999	9,328	12,328	16,292	21,531	28,454
10,000 - 14,999	18,656	24,655	32,584	43,061	56,908
15,000 - 19,999	9,328	12,328	16,292	21,531	28,454
20,000 - 24,999	74,625	98,622	130,335	172,246	227,634
25,000 - 29,999	18,656	24,655	32,584	43,061	56,908

Income band (Ksh)	2017	2022	2027	2032	2037
30,000 - 49,999	149,250	197,244	260,670	344,492	455,267
50,000 - 99,999	83,953	110,950	146,627	193,777	256,088
100,000 +	55,969	73,966	97,751	129,184	170,725
Total	419,767	554,748	733,134	968,883	1,280,439
National total	5,464,233	7,761,449	10,851,630	14,933,266	20,289,006

Source: KPMG Analysis

***Note:** Select counties have been shown in the executive summary for illustrative purposes only, the table with the breakdown of urban households across income bands in all 47 counties is in the detailed report section 5.1.

Step 6: Based on KPMG survey results, apply the ratio of tenants in each income band to the number of urban households distributed among the income bands.

The affordable housing program is targeted at low income households, currently renting in urban areas, therefore once KPMG determined the number of urban households across each income band in all 47 counties, the next step was to determine the proportion of households with tenancies versus homeowners.

The nationwide number of renters is projected to increase from 4.8 million in 2017 to 17.6 million in 2037.

Table 5: The number of households with rented property per income band (2017-2037) for select counties**

Income band	2017	2022	2027	2032	2037
Garissa					
0 - 4,999	693	891	1,139	1,447	1,828
5,000 - 9,999	2,079	2,674	3,417	4,342	5,485
10,000 - 14,999	4,852	6,239	7,973	10,130	12,798
15,000 - 19,999	4,159	5,347	6,834	8,683	10,969
20,000 - 24,999	5,545	7,130	9,112	11,578	14,626
25,000 - 29,999	693	891	1,139	1,447	1,828
30,000 - 49,999	1,386	1,782	2,278	2,894	3,656
50,000 - 99,999	2,079	2,674	3,417	4,342	5,485
Total	21,486	27,628	35,311	44,864	56,675
Kajiado					
5,000 - 9,999	17,849	28,352	44,762	67,816	88,047
10,000 - 14,999	17,849	28,352	44,762	67,816	88,047
15,000 - 19,999	17,849	28,352	44,762	67,816	88,047
20,000 - 24,999	35,697	56,703	89,523	135,633	176,093
30,000 - 49,999	31,235	49,615	78,333	118,679	154,082
50,000 - 99,999	8,924	14,176	22,381	33,908	44,023
100,000 +	13,387	21,264	33,571	50,862	66,035
Total	142,790	226,813	358,092	542,530	704,374
Mombasa					
5,000 - 9,999	9,328	12,328	16,292	21,531	28,454
10,000 - 14,999	18,656	24,655	32,584	43,061	56,908
15,000 - 19,999	9,328	12,328	16,292	21,531	28,454

Income band	2017	2022	2027	2032	2037
20,000 - 24,999	74,625	98,622	130,335	172,246	227,634
25,000 - 29,999	18,656	24,655	32,584	43,061	56,908
30,000 - 49,999	130,594	172,588	228,086	301,430	398,359
50,000 - 99,999	83,953	110,950	146,627	193,777	256,088
100,000 +	27,984	36,983	48,876	64,592	85,363
Total	373,126	493,109	651,675	861,229	1,138,168
National total	4,802,180	6,811,026	9,504,675	13,024,655	17,605,654

Source: KPMG Analysis

****Note:** Shortlist of counties have been shown in the executive summary for illustrative purposes only, the table with the breakdown of households renting property across income bands in all 47 counties is in the detailed report in section 5.1.

Step 7: Based on the 30% housing budget ceiling and the proposed house prices, analyse the income bands that can afford each proposed housing type.

Once the ratio of tenants to total households across the income bands was determined, the next step was to establish the maximum value for a house that households across each income band could purchase. I.e. the maximum house price, households in the Ksh 30,000 - 49,000 income band can afford for a house at the current mortgage interest rate of 13.5% per annum.

KPMG assumed that the ceiling for spending on housing is 30% of total household income. The ceiling is based on research that showed that generally lenders recommend that households spend no more than between 28% and 35% of gross monthly income on a mortgage.

Based on this analysis, the table below shows the maximum house price that each income group can afford.

Table 6: Analysis of the maximum value of house affordability across the income bands

Monthly Income Groups (Ksh)	Median income (Ksh)	Housing budget (Ksh) – 30% of Income	Maximum affordable house price (Ksh)		
			13.5% mortgage interest rate	8.0% mortgage interest rate	4.0% mortgage interest rate
0 - 9,999	5,000	1,500	129,000	194,327	284,150
10,000 - 14,999	12,500	3,750	321,750	485,848	710,418
15,000 - 19,999	17,500	5,250	450,500	680,194	994,597
20,000 - 24,999	22,500	6,750	579,100	874,541	1,278,776
25,000 - 29,999	27,000	8,100	694,900	1,049,473	1,534,565
30,000 - 49,999	40,000	12,000	1,029,400	1,554,755	2,273,401
50,000 - 99,999	75,000	22,500	1,930,300	2,915,182	4,262,652
100,000 +	100,000	30,000	2,573,700	3,886,936	5,683,574

Source: KPMG Analysis

Assumptions: 25 year mortgage on 90% of the house price, with a 10% deposit and a housing budget of 30% of the household's income.

The foregoing analysis is valid when the median income is representative of the income group. A second analysis was done that aimed to identify the minimum monthly

household income required for a household to afford the proposed houses in the Affordable Housing Programme.

Table 7: Analysis of the minimum monthly income to afford the proposed houses

Proposed house type	House price (Ksh)	Minimum monthly income (Ksh)		
		13.5% mortgage interest rate	8.0% mortgage interest rate	4.0% mortgage interest rate
Three bedroom	3,000,000	105,000	69,500	47,600
Two bedroom	2,000,000	70,000	46,400	31,700
One bedroom	1,000,000	35,000	23,200	15,900
Bedsitter	800,000	28,000	18,600	12,700

Source: KPMG Analysis

Assumptions: 25 year mortgage on 90% of the house price and housing budget is 30% of the household's income.

Observations:

- The greater the household income, the greater the breadth of choices. For example, a household earning greater than Ksh 100,000 has more housing units that are affordable at 30% or less of their household income. It is unlikely that households in this income range will choose a unit costing less than Ksh 20,000 per month, but the option exists nonetheless. Comparatively, households towards the lower end of the household incomes has fewer units to choose from.
- At the current mortgage interest rate of 13.5% per annum, the cost of living may not allow for a housing budget of 30% for household income levels below Ksh 30,000.

Three bedroom house:

- At current mortgage market mortgage rates of 13.5% per annum, none of the households in the proposed income groups can service a mortgage on a three-bedroom house (i.e. mortgage of Ksh 2.7 million) being 90% of the proposed house price.
- A household needs to earn a minimum of Ksh 105,000 monthly in order to comfortably service a mortgage on 90% of the cost price. By lowering the mortgage interest rate to 8%, households earning more than Ksh 69,500 monthly are able to service a mortgage on a three-bedroom house. Lowering the mortgage interest rates further to 4.0% reduces the minimum household income to Ksh 47,600 monthly.

Two bedroom house:

- At current mortgage rates, only households that earn more than Ksh 70,000 monthly can service a mortgage for a two-bedroom house. This is a mortgage for Ksh 1.8 million, being 90% of the proposed house price. The minimum household income reduces to Ksh 46,400 monthly and Ksh 31,700 monthly if the mortgage interest rate is reduced to 8% and 4% per annum, respectively.

One bedroom house:

- At current mortgage rates, only households that earn more than Ksh 35,000 monthly can service a Ksh 900,000 mortgage for a one bedroom house, being 90% of the proposed house price. Lowering mortgage interest rates to 8% per annum makes a one-bedroom apartment affordable to all households earning

more than Ksh 23,200 monthly. At 4% mortgage interest rate per annum households earning at least Ksh 15,900 monthly are able to service a one-bedroom house mortgage.

Bedsitter:

- At current rates, only households that earn more than Ksh 28,000 monthly can service a mortgage for a studio apartment. This is a mortgage for Ksh 720,000 for a studio apartment, being 90% of the proposed house cost price. At 8% mortgage interest rate per annum, households earning more than Ksh 18,600 monthly are able to service a mortgage for a studio apartment. If mortgage rates were further reduced to 4% per annum households earning more than Ksh 12,700 monthly are able to afford a studio apartment.

Table 8: Analysis of the minimum monthly income to afford the proposed houses

Monthly Income bands (Ksh)	Housing budget – 30% of monthly income (Ksh)	SDHUD’s house price (Ksh)	Affordability of a 25 year mortgage repayment			
			13.5 %	8%	4%	0%
100,000	30,000	3Mn	✗	✓	✓	✓
50,000 – 99,999	22,500		✗	✓	✓	✓
	22,500	2Mn	✓	✓	✓	✓
30,000 – 49,999	12,000		✗	✗	✓	✓
30,000 – 49,999	12,000	1Mn	✓	✓	✓	✓
25,000 – 29,999	8,100		✗	✓	✓	✓
20,000 – 24,999	6,750		✗	✗	✓	✓
15,000 – 19,999	5,250	800K	✗	✗	✓	✓
10,000 – 14,999	3,750		✗	✗	✗	✓
0 – 9999	1,500		✗	✗	✗	✗

Source: KPMG Analysis

At a national level the demand for each type of house in 5, 10 and 20 years is as shown in the table below.

Table 9: Projected housing demand (2017-2037) based on historical household growth*

Type	Interest rate	2017	2022	2027	2032	2037
Studio apartment - 800,000	13.5%	2,184,278	3,077,917	4,288,521	5,893,651	8,034,193
	8%	3,334,065	4,704,551	6,542,737	8,956,779	12,133,804
One bedroom - 1,000,000	13.5%	1,807,813	2,545,623	3,545,299	4,877,021	6,658,090
	8%	2,561,811	3,614,083	5,038,720	6,921,730	9,427,136
Two bedroom – 2,000,000	13.5%	370,801	522,197	729,824	1,015,106	1,407,918
	8%	1,138,338	1,603,041	2,237,423	3,099,030	4,272,773
Three bedroom – 3,000,000*	13.5%	N/A	N/A	N/A	N/A	N/A
	8%	361,531	509,142	711,578	989,729	1,372,720
Total demand	13.5%	4,362,892	6,145,737	8,563,644	11,785,778	16,100,201
	8%	7,395,745	10,430,817	14,530,458	19,967,268	27,206,433

Source: KPMG Analysis

Note: *These projections were made using the method where household size growth is based on historical household growth.

** Based on the analysis on affordability, the minimum income required for a household to service a mortgage on a three bedroom house selling for Ksh 3 million at the current mortgage interest rates is Ksh. 105,000. The target group of households earning less than Ksh 100,000 will not be able to afford a three bedroom apartment at this price and interest rates.

Any possible demand for households earning less than Ksh 100,000 monthly at the proposed price points and current mortgage interest rates of 13.5% will only be possible if the assumptions of 30% housing budget are relaxed or the household has other sources of income not reported.

However, if GoK are able to achieve an 8% mortgage interest rate per annum, the minimum household income reduces to Ksh. 69,500 per month. Subsequently potential demand for a three bedroom will increase to 2.2 million from 1.4 million as shown in the table above.

KPMG's analysis shows that housing demand is higher when the projection is based on future population growth (total demand of 5.8 million at 13.5% in 2022) and constant household size (total demand of 6.1 million at 13.5%) as seen in the table below.

Table 10: Projected housing demand (2017-2037) based on future population growth and constant household size*

House type	Interest rate	2017	2022	2027	2032	2037
Studio apartment - 800,000	13.5%	2,152,758	2,799,896	3,536,118	4,349,630	5,282,657
	8%	3,112,230	4,060,057	5,135,895	6,320,620	7,666,306
One bedroom - 1,000,000	13.5%	1,781,766	2,315,782	2,922,931	3,598,080	4,375,713
	8%	2,977,626	3,883,315	4,916,867	6,051,534	7,346,089
Two bedroom – 2,000,000	13.5%	548,130	711,726	899,095	1,114,337	1,369,358
	8%	1,121,887	1,457,262	1,840,300	2,274,963	2,784,608
Three bedroom – 3,000,000	13.5%	n/a	n/a	n/a	n/a	n/a
	8%	557,265	723,588	914,081	1,132,910	1,392,182
Total demand	13.5%	4,482,654	5,827,404	7,358,145	9,062,046	11,027,728
	8%	7,769,007	10,124,222	12,807,143	15,780,027	19,189,185

Source: KPMG Analysis

** Note: These projections were made using the method where household size growth is based household size growth based on future population growth and constant household size*

1.4.2 Key findings and KPMG recommendations

The housing units provided by the Affordable Housing Programme should be adequate for the buyers. For housing to be adequate, it must, at a minimum, meet the following criteria:

- **Security of tenure:** housing is adequate if it offers its occupants a degree of tenure security which guarantees legal protection against forced evictions, harassment and other threats
- **Availability of services, materials, facilities and infrastructure:** housing is adequate if its occupants have safe drinking water, adequate sanitation, energy for cooking, heating, lighting, food storage, security and refuse disposal
- **Affordability:** housing is adequate if its cost does not threaten or compromise the occupants' enjoyment of other human rights. KPMG recommends that the cost of the housing to be provided must not exceed 30% of the household's gross income
- **Habitability:** housing is adequate if it guarantees physical safety and provides adequate space, as well as protection against the cold, damp, heat, rain, wind, other threats to health and structural hazards. This includes sufficient living area, wherein not more than three occupants share the same room. KPMG recommends that at a minimum the parents should have a separate sleeping room. Furthermore, the household should have a provision to separate their children's rooms by gender at the age of 10 years.
- **Accessibility:** housing is not adequate if the specific needs of disadvantaged and marginalised groups are not taken into account. KPMG recommends that the allocation be intentionally diversified for different tribes, races, and cultures to live together.
- **Location:** housing is not adequate if it is cut-off from employment opportunities, health-care services, schools, childcare centres and other social facilities, or if located in polluted or dangerous areas. KPMG recommends that accessibility to project sites be prioritised and delivered ahead of occupation of project site homes.
- **Cultural adequacy:** housing is not adequate if it does not respect and take into account the expression of cultural identity. KPMG recommends that cultural diversity be taken into consideration in the architectural designs by region and that provisions be made to accommodate the different cultures.

1.4.3 Limitations and delimitations of our approach

- **Assumptions;** in making our projections we have applied professional judgment and market knowledge in making computations. Our projections depend on these assumptions being valid throughout the period to 2037. When reviewing the projections against actual results in the future periods, it would be prudent to update the assumptions.
- **Use of median income to analyse income groups;** we use the median income to assess the ability of the income band to afford a house. The resultant generalisation is statistically applicable to the income band but is not practically applicable in determining the minimum household income for affordability.
- **Double counting;** the greater the household income, the greater the breadth of choices. For example, a household earning greater than Ksh. 100,000 has more housing units that are affordable at 30% or less of their household income. However, it is unlikely that households in this income range will choose bedsitter and one bedroom units. In our analysis, double counting across the smaller units has not been subtracted because the high income groups can afford the smaller units.

- **Slum upgrading**; the housing demand analysis focused primarily on affordable housing and excluded the developments made by GoK’s slum upgrading programme.

1.5 Monitoring and Evaluation Framework

It is imperative the GoK through its appointed agency closely monitors and evaluates the performance of the Affordable Housing Programme. GoK may also need to consider instilling a regulator to ensure the appointed agency and the Affordable Housing Programme are compliant with the laws of Kenya.

The role of the regulator could include the following:

- Promotion of the development and awareness of the affordable housing programme;
- Provision of advice and support in the development of policy for the housing sector
- Promotion of an enabling environment for the growth and development of the housing sector;
- Assistance where requested, in the process of the designation of restructuring zones

Monitoring involves collecting, analysing, and reporting data on inputs, activities, outputs, outcomes and impacts as well as external factors, in a way that supports effective management. Monitoring aims to provide decision makers and other stakeholders with regular feedback on progress in implementation and results and early indicators of challenges requiring intervention⁷.

Evaluation is a time-bound and periodic exercise that seeks to provide credible and useful information to answer specific questions to guide decision making by staff, managers and policy makers. Evaluations may assess relevance, efficiency, effectiveness, impact and sustainability.

The M&E framework proposed is focused on outcomes that KPMG considers to be the most material and measurable. The framework includes details for each KPI, possible approaches to measuring performance, including data sources, suggested frequency of monitoring and the baseline against which progress should be measured.

KPMG has suggested the following as key performance indicators (KPIs) that should be monitored on an ongoing basis when the Affordable Housing Programme is operational.

Table 11: Affordable Housing Programme Performance Indicators

KPIs	Data source	Frequency of measurement
Number of applications for housing received from targeted population	Affordable Housing Programme Management Team	Annually
Number and/or percentage of low-income families housed in affordable, well maintained units	Affordable Housing Programme Management Team	Annually

⁷ Policy framework for the Government-wide monitoring and evaluation system

KPIs	Data source	Frequency of measurement
Monetary value of housing subsidies allocated to low income households	Programme budget / financial records	Annually
Number of legislative policies passed to enable access to finance in the housing sector	National government records	Annually
Increase in volume of mortgage loans granted by commercial banks to households in the affordable housing market	Annual reports of Commercial banks and the Central Bank of Kenya	Annually
Number and/or percentage of residents rating their feeling of safety in and around their homes as satisfactory.	Tenant satisfaction survey	Annually
Number of homeowners/ tenants satisfied with application process and other processes in obtaining affordable housing; satisfaction with conditions and maintenance of housing units; number of complaints received and satisfactorily resolved	Tenant satisfaction survey	Annually
Average number of months between submission of application by interest households and approval and allocation of housing	Affordable Housing Programme Management Team	Annually
Different types of houses built annually i.e. temporary houses, semi-permanent houses and permanent houses.	Affordable Housing Programme Management Team	Annually
Developers ability to implement phase milestones as agreed with Government	Affordable housing programme management team	As agreed with developer
Participation of county local labour in the construction of the houses	Affordable housing programme management team	Annually
Participation of county local suppliers in the construction of the houses	Affordable housing programme management team	Annually
Actual construction costs and delivery times against pre-construction budgets and programme timescales	Affordable housing programme management team	Annually

Source: The Urban Institute and KPMG Analysis

2 Survey approach and methodology

This section analyses the scope of the survey, geographical coverage, target population, sampling approach and design and data capture, processing and analysis. KPMG's survey approach and methodology was aimed at providing insight into the supply and demand for affordable housing in Kenya, households' preferences and values to provide practical recommendations to deliver against SDHUD's strategic objectives under the Big Four agenda.

This approach and methodology consisted of four phases:

- Survey design
- Data collection
- Data analysis
- Reporting and conclusions

2.1 Survey design

2.1.1 Geographic coverage and target population

The survey targeted different players in the affordable housing sector within the counties ranging from county officials engaged in the housing and planning sector, housing developers, housing financiers, utility connectors and the households who are renting houses or are potential home buyers.

It was conducted in a geographically balanced representation through collection of both primary and secondary data in all the 47 counties. The sample covered selected players targeting county officials for secondary datasets projecting on uptake of new housing units in urban areas, households' perception on demand of affordable housing need and preferences for individuals who may require affordable housing.

2.2 Data collection

The survey approach and methodology was tailored to establish a collaborated data set, whereby the information held by various stakeholders involved in the housing sector value chain in Kenya including policy makers i.e. government, private sector players within the housing sector such as developers, housing financiers, etc. and the Kenyan households was gathered and analysed collectively.

1.3.1 Desktop research

The desktop research included reading and analysing the documentation available on the Kenyan housing sector. The following key documentation amongst others was analysed:

- Housing policy documents availed by the GoK
- The Constitution of Kenya 2010
- Housing survey 2012/13 by KNBS
- 2015/16 Kenya Integrated Household Budget Survey (KIHBS)
- Reports on the housing sector produced by various stakeholders such as the World Bank, UN-Habitat, etc.
- Other credible reports published on home ownership market in Kenya.

2.2.1 Data collation from the counties

The data collection tools employed included a series of six questionnaires engaging various groups ranging from households to technical county staff as set out in the table below.

Table 12: Survey groups and coverage

Survey groups	Overall approach and coverage
a) Households	Random sampling administered in 47 counties
b) County housing officials	One on one interviews in 47 counties
c) Service providers: KPLC, WSPs and WSBs	Both national and regional data was obtained. Regional data was sourced via one on one interviews with senior officials and triangulated using the national data
d) Housing developers	A combination of one on one interviews and focus group discussion with the Kenya Property Development Association (KPDA).
e) Housing sector financiers	One on one interviews with financiers
f) Technical county staff	One on one interviews and site visits in 47 counties

Source: KPMG Analysis

2.2.2 Households survey

The household survey was undertaken to understand the perceptions of current and aspiring home owners, affordability and willingness to pay. See appendix for detailed questionnaire.

A random sampling approach was used to conduct the survey interviews of households currently residing within major towns. In collaboration with the counties, the targeted households were those predominantly found within the areas aimed at the affordable housing program. A convenience random data sampling methodology was applied to collect data.

For household surveys, the calculated total sample size was 1,700 across 47 counties.

2.2.3 Collation, data entry and analysis

The data collated was entered into a central database and analysed to provide inferences for the housing master plan. All administered questionnaires and supporting documentation were brought together for data capture by trained data entry clerks under lead supervisors in a central location at KPMG's offices in Nairobi. The collated data was consistently keyed in from the six questionnaires into the central online platform then automatically aggregated into a single repository and analysed using KPMG approved statistical analysis software and visualisation tools.

For quality assurance, supervisors noted and conducted random checks on questionnaires that had been entered into the system to detect errors in data entry. All detected errors were re-input by the responsible data entry clerk. Mandatory cross checking for accuracy was performed by using pre-determined frequencies.

Data cleaning was carried out by a team of subject matter specialists who developed editing specifications which cross checked raw data for errors and inconsistencies. Statistical analysis was then carried out using graphical analysis, frequency tables, cross tabulation and filtering. Data was then presented in form of charts, tables and graphs using a unified dashboard.

3 Situational Analysis

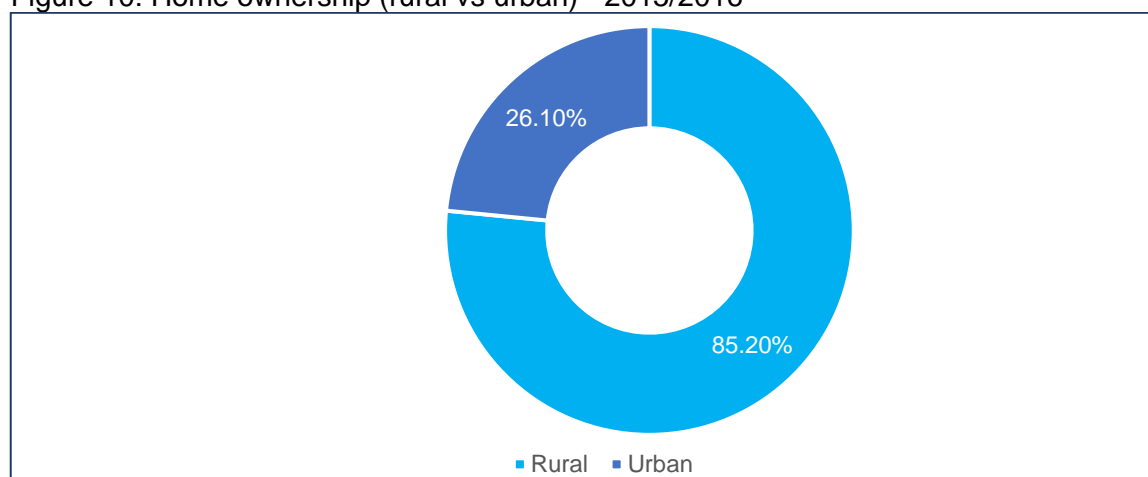
Kenya's population growth rate of 2.65% p.a. and urbanisation rate of 4.4% p.a. is high compared to the global population growth rate of 1.09% and urbanisation rate of 2%. The World Bank estimates that Kenya's urbanisation rate is the equivalent of having 500,000 new city dwellers every year. Population growth and urbanisation has led to increased demand for housing, as families grow and consumer needs change.

The low income group in Kenya have a housing deficit of over 2 million units⁸, with approximately 61% of urban households living in very poor quality housing (i.e. slums as defined by the Millennium Development Goals).

The growing middle income class has also contributed to increased demand for housing that is differentiated in terms of space, finishing and lay-out. This increased demand for formal housing has contributed to higher property prices.

Property ownership nationally is 59.5%. Ownership is more prominent in rural areas (85.20%) compared to urban areas (26.10%)⁹.

Figure 10: Home ownership (rural vs urban) - 2015/2016



Source: KNBS

According to KNBS, the average household size in Kenya is 4.0, household size tends to be larger in rural areas at 4.5, compared to urban areas at 3.3.

Table 13: Top 3 counties with the highest household size (2015/16)

County	Household size
Wajir	6.6
Mandera	6.4
Garissa	5.5

Source: KNBS

Table 14: Top 3 counties with the lowest household size (2015/16)

County	Household size
--------	----------------

⁸ World Bank (April 2017) - Kenya Needs 2 Million More Low-income Homes: Building Them Would Boost Its Economic Growth <http://www.worldbank.org/en/country/kenya/publication/kenya-needs-2-million-more-low-income-homes-building-them-would-boost-its-economic-growth>

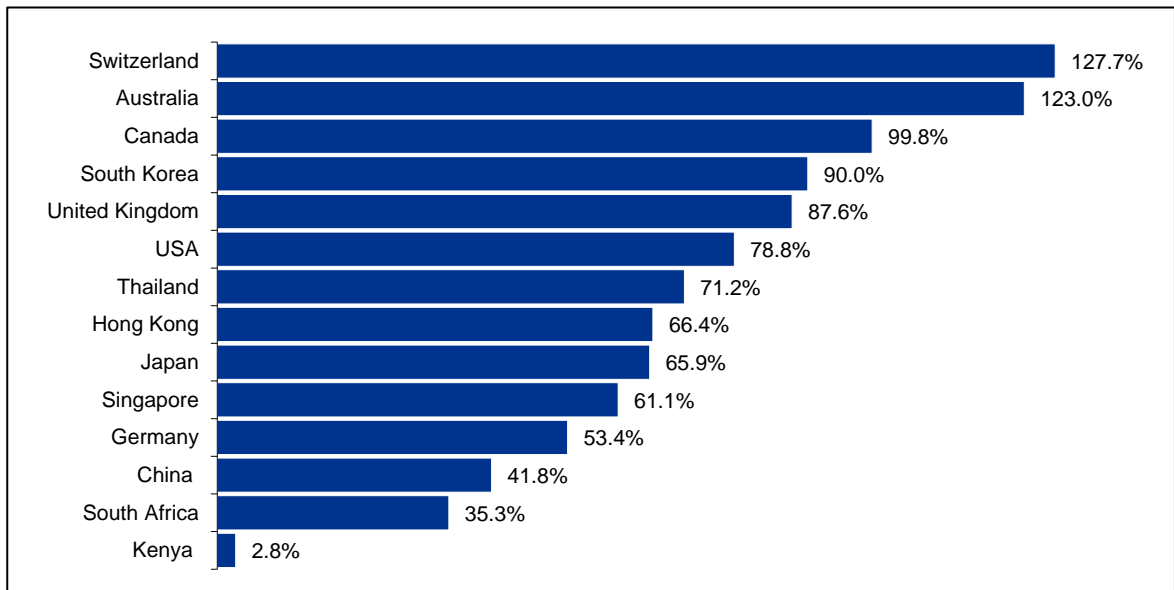
⁹ KNBS – Kenya Integrated Household Budget Survey (2015/2016)

Nairobi	3.0
Mandera	3.0
Nyeri	2.9

Source: KNBS

Kenya's mortgage debt to GDP ratio of 2.8% (2016) is low compared to countries such as South Africa where the ratio is 35% and the United States where the ratio is 78%.

Figure 11: Mortgage Debt as a % of GDP (2016)

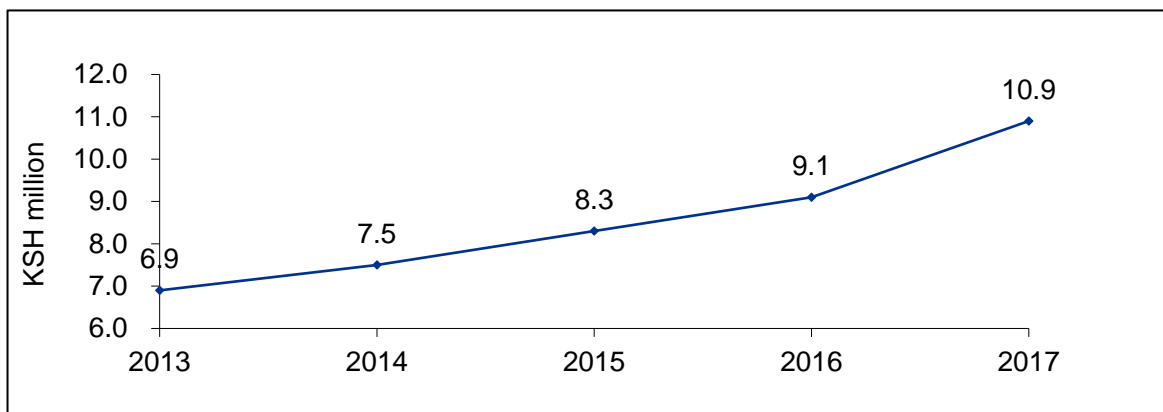


Source: CBK

3.1 Housing finance market

The average mortgage size in Kenya has grown steadily over the last 5 years from Ksh 6.9 million in 2013 to Ksh. 10.9 million in 2017, attributed to the stable economy and rising demand for housing.

Figure 12: Average mortgage size (2013-2017)



Source: CBK

The average mortgage loan was Ksh 10.9 million in 2017¹⁰. Assuming an interest rate of 13.5% per annum, a 10% deposit and a tenure of 15 years, this translates to monthly mortgage payments of Ksh 127,365, which is unaffordable for most Kenyans.

In 2017, the average interest rate charged on mortgages was 13.57% (ranging between 10.8% and 14.0%) compared to 18.7% average (10.5% to 18.0%) in 2016. This was mainly due to the interest rate cap which was effected on September 14, 2016.

The Banking Amendment Act 2015 capped the lending rates for all banking institutions at 4% above the base interest rates set by CBK. This interest rate cap has negatively affected lending as it has compelled banks to tighten their credit standards and to shun high risk borrowers and shift lending to Government and large corporates.

After the interest cap came into effect, some banks also exploited existing approval limits to increase non-interest charges on loans. For example, appraisal fees increased from 1% on loan value for first time borrowers and 0.5% for repeat borrowers to a standard fees of 2.5%. In addition, call deposits and stage inspection fees for construction facilities were introduced.

KCB was the largest provider of mortgages in 2016, followed by Housing Finance and SCB. The outstanding value of non-performing mortgages increased from Ksh 22 billion in December 2016 to Ksh 27.3 billion in December 2017. The NPLs to gross mortgage loans was 12.2%, slightly below the industry NPLs to gross loans ratio of 12.3%.

Table 15: Top 5 lenders in the Kenyan mortgage market (2017)

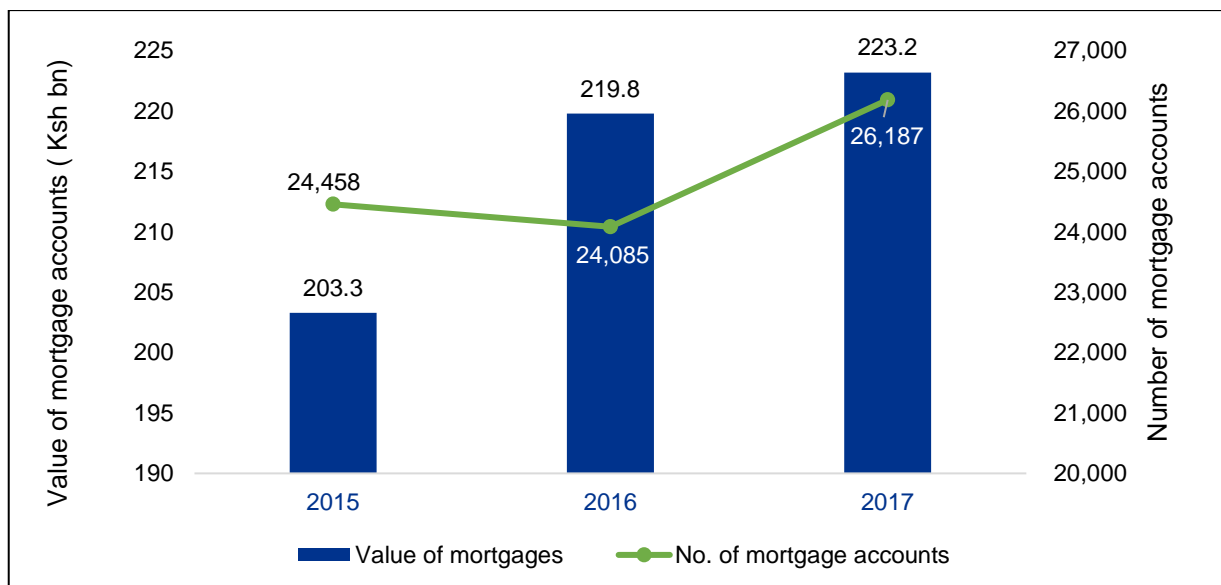
Institution	Mortgage outstanding (Ksh Mn)	Number of mortgage accounts	Value of NPLs Mortgage (Ksh Mn)	Number of Mortgage NPLs account
KCB Kenya	65,554	7,617	4,731	550
Housing Finance Ltd	46,652	5,114	7,656	517
Standard Chartered	20,681	1,965	367	52
Stanbic Kenya	18,936	1,920	1,078	185
Cooperative Bank of Kenya	10,192	1,658	1,137	140

Source: CBK Annual Report 2017

According to CBK, the number of mortgage loans accounts in Kenya declined by 1.5% from 24,458 in 2015 to 24,085 in 2016 but rose again sharply by 8.8% in 2017 to 26,187.

Figure 13: Value of mortgages (Ksh billion) vs. number of loan accounts (2015-2017)

¹⁰ Central Bank of Kenya – Banking Supervision Annual Report (2017)



Source: CBK

Interviews conducted with commercial banks indicated that not all mortgage loan applications are appropriately indicated as such by applicants due to various reasons, including the need to fast track the approval process and eliminate the request for collateral. Kenyans tend to apply for micro-loans that build up towards the incremental construction of a house over an extended period.

3.1.1 Barriers to housing development and affordability

Home ownership is a central part of the culture in Kenya, therefore the relatively weak mortgage market should not be interpreted as a lack of desire amongst citizens to own homes, but is rather a reflection of inhibiting factors in the mortgage market.

The barriers to housing development and affordability in Kenya include:

- Low levels of income
- Limited access to affordable long term finance
- High cost of houses
- High cost of land for construction
- High incidental cost of mortgages (i.e. legal fee, valuation fee, stamp duty)
- Difficulties with property registration and ownership documents such as title deeds
- Inadequate policies and regulations that stimulate growth in the housing sector
- Lack of Public-Private Partnerships (PPPs) focused on affordable housing

Low income is a key inhibitor to access housing, nearly half of Kenyan households earn less than Ksh 10,000 per month whilst 2% have completely no income. Nearly a quarter of Kenyans earn between Ksh 10,000 and 25,000 per month and approximately only 5% of Kenyans earn between Ksh 40,000 and Ksh 100,000 per month.

Table 16: Monthly Income for Kenya Households (2018)

Monthly Income band (Ksh)	Percentage of population
No income	2%

0 – 10,000	50%
10,000 – 25,000	24%
25,000 – 40,000	10%
40,000 – 55,000	3%
55,000 – 75,000	1%
75,000 – 100,000	1%

Source: The Standard (April 2018)

Banks prefer to lend to high and middle income individuals that are credit worthy, therefore traditional mortgage products are often not targeted at low income earners and generally exclusively cater for only salaried employees.

SACCOs are proving to be an alternate option for housing finance, they typically offer shorter, medium term (up to 7 years) loans at interest rates considerably lower than the commercial mortgage lending banks. The loan quantum is based on up to three times what the member has saved with the SACCO. Typically, loans are unsecured and not linked to the property.

Table 17: Mortgage lending terms in East Africa

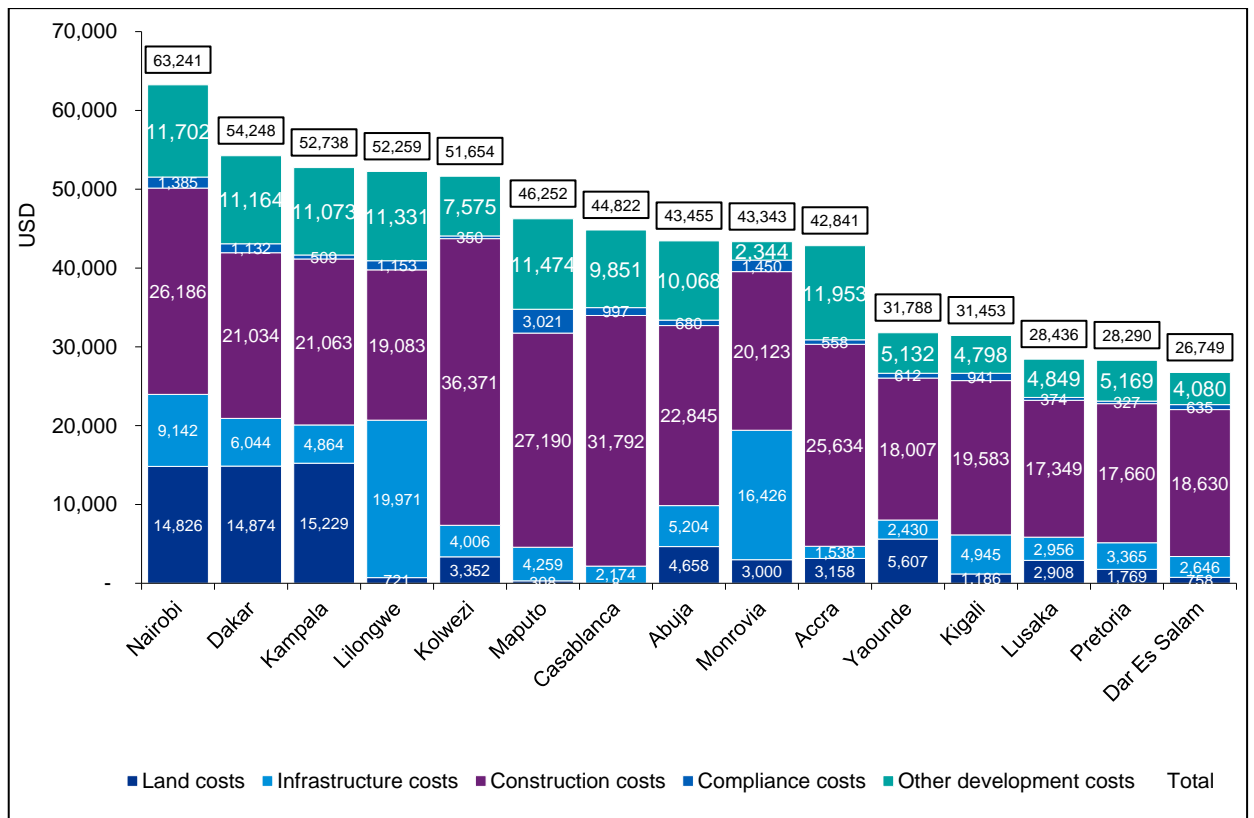
Mortgage Lending Terms	KE	BR	DJ	ER	ET	RW	SOM	TZ	UG
Tenure (years)	15	20	20	25	25	20	30	25	25
Down payment (%)	10%	30%	10%	15%	25%	20%	0%	10%	20%
Mortgage Interest rate (%)	14%	16%	7%	9.5%	12%	16.8 %	8.5%	18%	19%

Source: CAHF

The 2017 Doing Business Survey ranked Kenya as 121 out of 190 with respect to property registration. On average, it takes 9 procedures and an average of 61 days to register property in Kenya. The registration process is further complicated by devolution with different counties levels of efficiency.

Kenya is one of the most expensive cities for housing in Africa. A stark contrast to its neighbour Tanzania that has one of the lowest price houses. The main difference is in the cost of land and infrastructure, as well as other development costs, although a difference in construction costs is also evident. Land in Nairobi, Dakar, and Kampala is particularly significant as a proportion of the overall house cost. In Lilongwe and Monrovia, the key issue is infrastructure.

Figure 14: The cost of producing a 'generic' 55m² house in main cities across Africa in 2017 (USD)



Source: CAHF (2017)

3.1.2 Ongoing initiatives to deliver affordable housing in East Africa.

Uganda

Housing Finance Bank (HFB) has embarked on a partnership with the biggest pension fund in the country. Government, funding agencies, architects, land owners and property developers have created an arrangement for developers to deliver affordable housing units. They will be built to specification that will be purchased by the pension fund and delivered to its members through long term mortgages arranged with the HFB.

Rwanda

The Government in Rwanda has established the Affordable Housing Fund programme to promote investments in affordable residential housing. The programme among other initiatives earmark land for efficient housing units construction, advance developer construction finance at lower interest rates and offer incentives to developers through supply of infrastructure including piped water, electricity, road network and cyber optic cables.

Kenya

GoK has undertaken certain reforms to boost housing for low-income earners these include:

- the corporate tax incentive of 15% for developers who build least 100 low-cost residential houses, down from the normal 30% corporate tax

- re-engineering of the land registration processes, digitisation and computerization of land records to ease land transactions
- the implementation of a computerised titling centre in a bid to fast-track the issuance of title deeds.

Pension-backed mortgages are also slowly gaining ground in Kenya as a means of improving affordability for prospective home-owners. Banks have begun to take guarantees against a borrowers' pension contributions held with established pension schemes.

The planned establishment of the Kenya Mortgage Refinance Company (KMRC) is aimed at enhancing mortgage affordability and enabling long-term loans at attractive market mortgage rates. KMRC is an initiative of National Treasury and the World Bank, and will be owned by the state, commercial banks and financial co-operatives as a Limited Liability Company. The KMRC is expected to be licensed by CBK in February 2019, with initial debt financing of USD 160mn from the World Bank for lending on to financial institutions¹¹.

3.1.3 Recommendations to drive participation of financiers in the affordable housing agenda

Private sector investors and mortgage issuers are guided by their goal of maximizing shareholder value. The return that the financier obtains from lending to a sector or a government project should be commensurate to the assessed level of risk, otherwise they would not participate. Generally, the return must cover the cost of funds, overheads, profit for the bank and a 'normal' level of non-performing loans.

The following are some of the recommendations that would encourage financiers to participate in the affordable housing scheme:

Challenge	Recommendation
High cost of financing to buyers	<ul style="list-style-type: none"> – Engage CBK to determine options of reducing the interest rate. – Provide subsidies to the housing sector mortgage providers to reduce the general cost of financing to this sector. – Provide a specialised semi-autonomous entity with the authority to issue title to property. – Establish a legal framework for settling of disputes during the tenure of the mortgage.
High cost of financing to developers	<ul style="list-style-type: none"> – Provide a subsidy to the developers to manage the cost for construction, infrastructure, compliance and land.

¹¹ Cytonn – The Kenya Mortgage Refinance Company <https://cytonn.com/topicals/the-kenya-mortgage-refinancing-company>

Bureaucracy in transferring title

- Simplify and digitise the process of approvals in order to eliminate the need for brokers and middlemen.
- Rationalise GoK's taxes, fees and rates in the transfer of residential property. The total cost of GoK's related cost to transferring property title should not exceed 5% on the cost of the property.

3.1.4 Housing price index

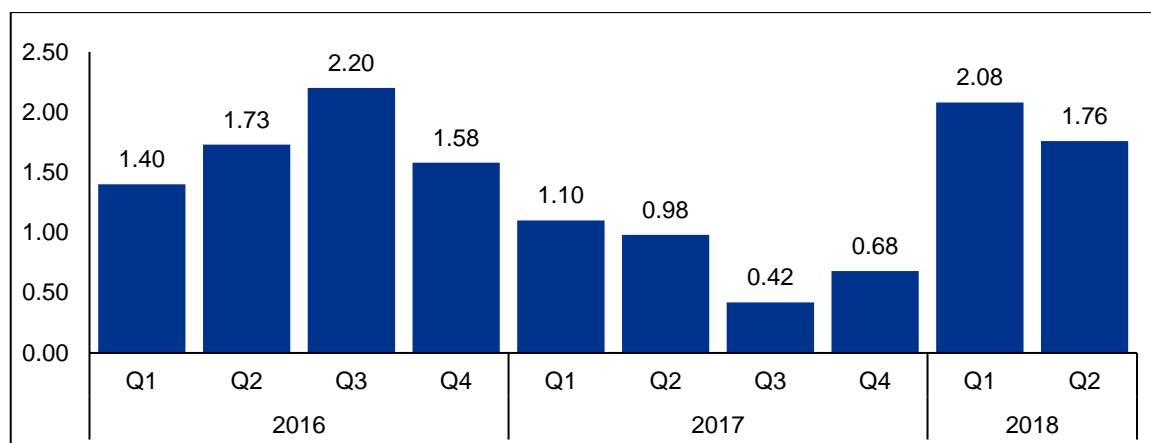
The Housing Price Index (HPI) is a broad measure of the movement of single-family house prices. Apart from serving as an indicator of house price trends, the Housing Price Index provides an analytical tool for estimating changes in the rates of mortgage defaults, prepayments and housing affordability.

3.1.5 Kenya's housing price index analysis

In the second quarter of 2018, house prices in Kenya rose by 1.76%¹². The drivers for rising house prices include features such as size of the house, parking space, borehole, type of the house and location of the apartment.

House prices in Kenya are recovering following a downturn in 2017 attributed to voluntary investment freeze due to the national elections. The price recovery seen over the past two quarters is a manifestation of increased demand for housing.

Figure 15: House price change in Kenya (%) – 2016-Q2 2018



Source: KBA Housing Price Index Issue 15 (September 2018)

3.1.6 Kenya Bankers Association pricing index calculation

In 2014, Kenya Bankers Association launched the KBA Housing Price Index (HPI) to provide market players and policy makers with an improved analytical tool that is useful for tracking the housing sector based on qualitative and quantitative characteristics that influence pricing. The HPI which is published on a quarterly basis is computed using the hedonic pricing model, which estimates the price of a house from the imputed prices of the house characteristics.

¹² Kenya Bankers Association – Housing Price Index Issue 15 (September 2018)

Hedonic methods are based on the idea that certain product characteristics provide pleasure to the buyer and therefore it is necessary to determine the prices of those characteristics (attributes), the so-called implicit prices. After estimating implicit prices, the hedonic product price is derived as the sum of implicit prices of individual product characteristics.

Table 18: Housing Price Index drivers (Quarter 2 2018)

Variable	Coefficient	Standard Error	T-statistic	P>[t]	[95% Conf. Interval]	
Plinth area	0.8227	0.0519	15.85	0.000	0.7206555	0.9247546
Number of Bedrooms	-0.0327	0.0305	-1.07	0.283	-0.0925902	0.0271577
Number of Bathrooms	0.0958	0.0281	3.41	0.001	0.0405794	0.1510979
House type	0.8766	0.0717	12.23	0.000	0.7356745	1.01752
Locational Dummy	-0.0008	0.0033	-0.25	0.806	-0.0072477	0.0056356
Number of floors	0.1782	0.0534	3.34	0.001	0.073147	0.2831537
Presence of Backyard	0.8857	0.0964	9.19	0.000	0.6962634	1.075204
Presence of Balcony	0.3809	0.0770	4.95	0.000	0.2294663	0.5322862
Presence of DSQ	-0.3834	0.2491	-1.54	0.124	-0.8730004	0.1062068
Presence of Gym	0.2888	0.0930	3.11	0.002	0.1060066	0.4716663
Swimming pool	-0.5119	0.1236	-4.14	0.000	-0.7548346	-0.2690207
Garage/parking	1.6248	0.2475	0.57	0.000	-2.111349	1.138297
Master ensuite	1.6963	0.2118	8.01	0.000	1.279843	2.112751
Separate dining	-0.3465	0.1795	-1.93	0.054	-0.6993735	0.0064055
Gated community	-0.0253	0.0258	-0.98	0.327	-0.0760263	0.025374
Presence of Borehole	0.2787	0.0584	4.77	0.000	-0.3935313	-0.1639539
Presence of geyser closet	-1.1303	0.2968	-3.81	0.000	-1.71367	-0.5468541
Presence of Elevator	0.0436	0.0934	0.47	0.641	-0.1400402	0.2271589
Constant	8.6755	0.3871	22.41	0.000	7.914595	9.436404

Presence of guestroom	-0.2369	0.2552	-0.93	0.354	-0.7383697	0.2645607
Presence of elevator	-0.3491	0.2314	-1.51	0.132	-0.8037293	0.1055392
Backup generator	-0.8324	0.4576	-1.82	0.769	-1.731368	0.0666132
Constant	10.2103	0.5476	18.65	0.000	9.134414	11.28626

Source: KBA

House prices have been increasing overtime. KBA's HPI has shown a general upward trajectory since the first quarter of 2013 when it was first computed.

3.1.7 Housing price index in emerging markets

Majority of African countries do not publish housing price statistics, making it difficult to compare Kenya to the rest of Sub-Saharan Africa. There are also significant differences in the methodology used by different countries to determine HPI, making it impossible to conduct a like for like comparison.

The differences in HPI across countries are due to macro-economic factors such as inflation and weights used in the methodology.

Table 19: Housing Price Index in selected countries

Country	Housing Price Index	Period
Kenya	124.78	September 2018
Uganda	214.8	July 2015
Brazil	129	August 2018
India	148	March 2018
South Africa	544.47	November 16
Turkey	268.10	July 2018

Source: Trading economics, KBA HPI Issue 15

3.2 Housing market preference

This section provides insights based on KPMG's survey on housing market preferences across all income bands in Kenya. Due to varied housing preferences, needs and attitudes amongst Kenyans, surveys need to be carried out regularly (5 years), with the results being used to formulate housing sector policies. In addition, the results can also be used to segment the customers hence identifying opportunities for house developers.

In evaluating the housing preferences responses, considerations must be given to the fact that the stated preferences by the respondents maybe more aligned to attractiveness without due attention to factors that can limit the choice of housing such as the household budget amongst others.

To understand the housing market preferences across the income segments, questions around ownership preferences, dwelling features, financial aspects and environmental features among others were included in the survey questionnaire.

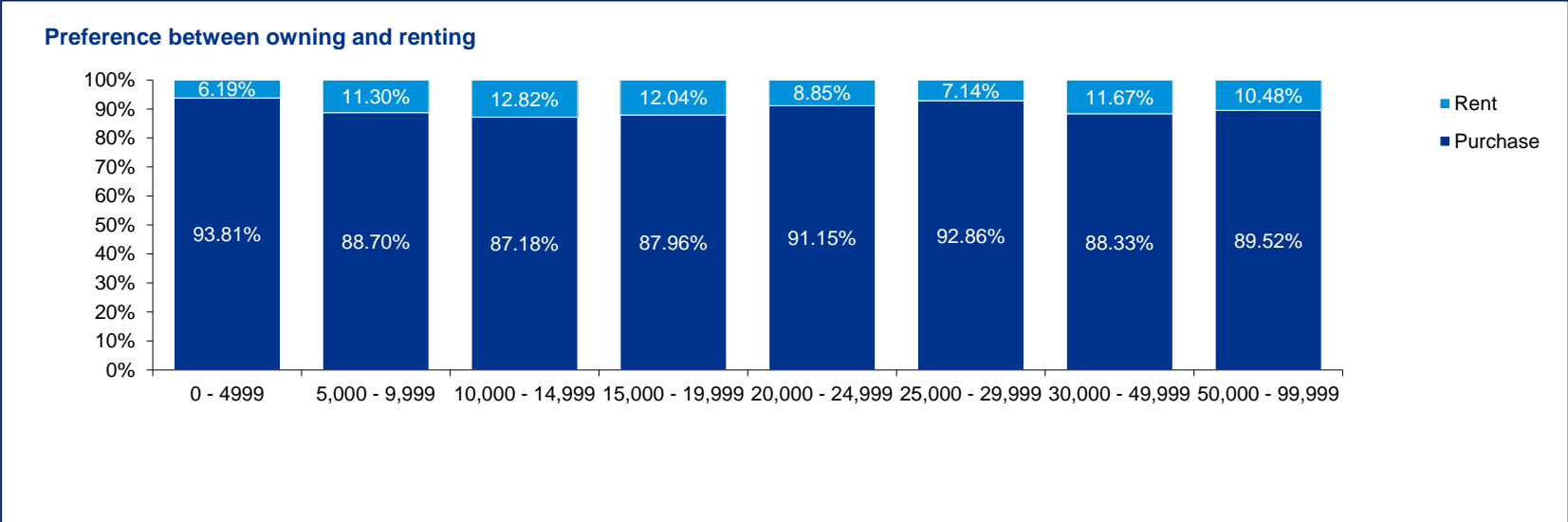
3.2.1 Preferences based on household survey

About 90% of the respondents across all income bands, indicated a desire to own their own houses as opposed to renting. Currently only 14% of Kenyans own their homes. Therefore there is scope to increase home ownership through interventions to reduce the cost of construction, reducing the cost of financing and subsequently creating a liquid secondary housing market.

There were varied responses across the counties on the preferred house tenure. All respondents from Kajiado, Lamu, Kwale, Migor, Muranga, Siaya and Taita Taveta indicated that they preferred purchasing as opposed to renting. On the other hand, only 19% of Tana River County respondents indicated that they preferred purchasing. This preference could be attributed to the fact that Tana River County is a transient county with large immigrant populations that live there for purposes of work. Security issues in Tana River County are as a result of ethnic clashes amongst the communities.

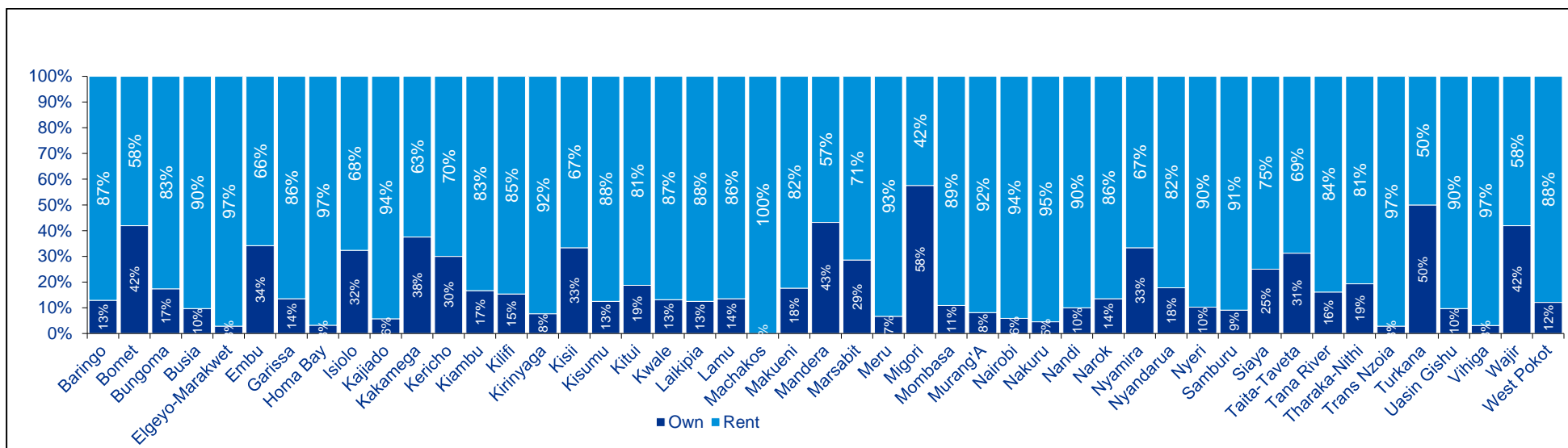
The figure below illustrates preference on owning versus renting across the income bands and counties.

Figure 16: Preference on owning versus renting across all income bands (2018)



Source: KPMG/SDHUD household survey

Figure 17: Preference on owning versus renting across all counties (2018)



Source: KPMG/SDHUD household survey

Implication to the Affordable Housing Programme

Based on the survey results, majority of Kenyans prefer to own their homes. The Affordable Housing Programme's plan to mortgage with the ultimate aim of ownership will be supported by Kenyans. However, ownership will mean title to the property, GoK should consider transferring title of the house earlier than the envisaged 25 year term whilst taking into account collateral needs.

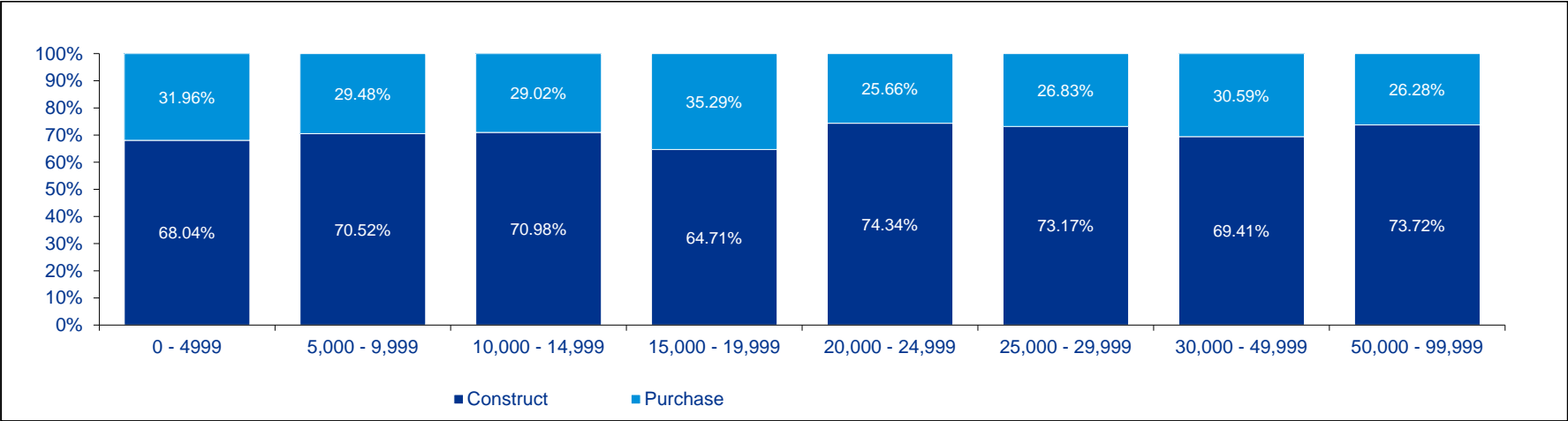
3.2.2 Preference on constructing versus purchasing

When asked about the preferred way of acquiring a house, the results of the survey indicated that 72% preferred constructing their houses as opposed to buying. Construction is a preferred option for home acquisition due to the perception that it is much cheaper than buying an already built house. In addition, the owner of the house is able to control the house design, features and pace of construction as well as the finishing features.

Similar results on construction as the preferred method of acquiring a house were obtained across all counties.

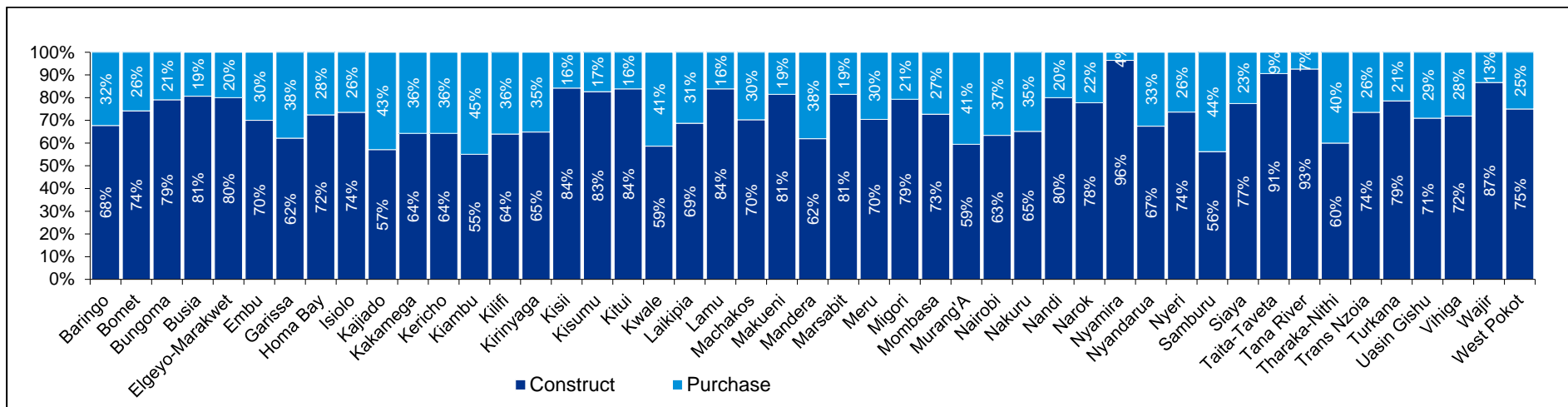
The figure below indicates the comparison between building and purchasing among all income bands and counties in Kenya.

Figure 18: Preference between constructing and purchasing across all income bands



Source: KPMG/SDHUD household survey

Figure 19: Preference between constructing and purchasing across all counties



Source: KPMG/SDHUD household survey

Implication to the Affordable Housing Programme

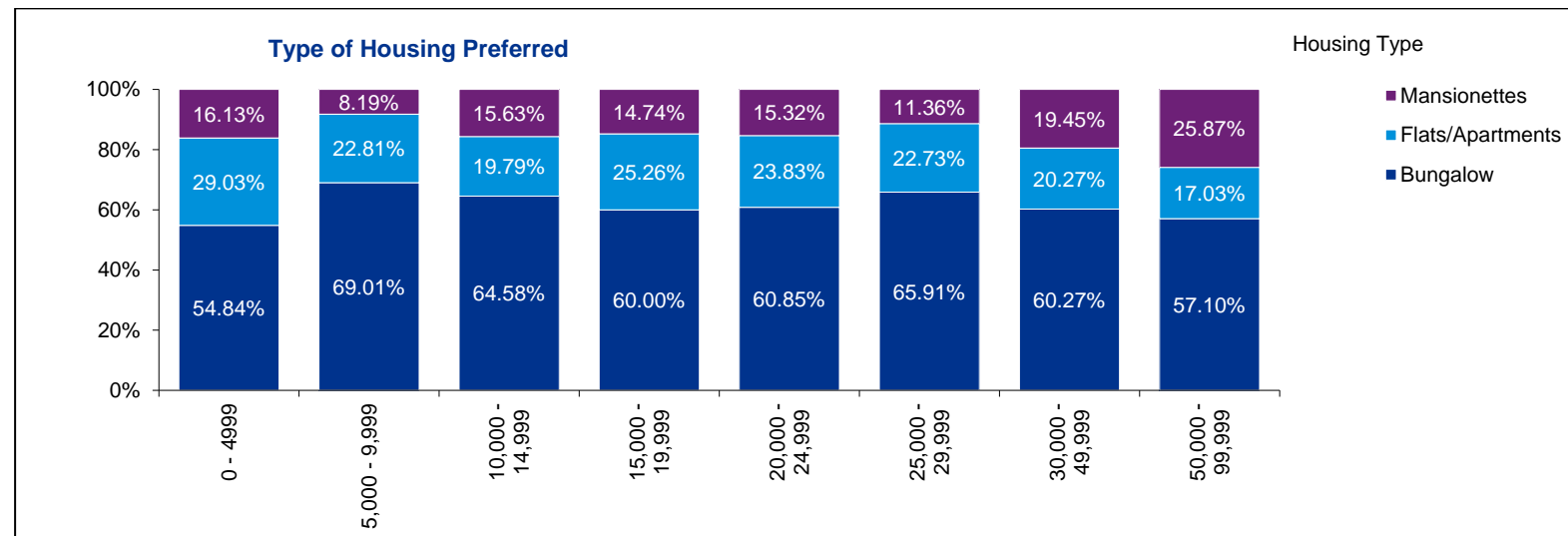
Based on the survey results across all the counties and income bands, a majority of Kenyans prefer constructing given the current lack of ready-made houses. If well executed, the Affordable Housing Programme is likely to dissuade this notion. GoK should consider sensitising the public on the benefits of the Affordable Housing Programme to ensure buy-in from Kenyans.

3.2.3 Preference based on the type of house

Respondents were asked to choose their preferred type of house with the options of bungalows, flats/apartments, maisonettes and others. The results of the Survey indicated that the preferred type of house were bungalows at 59% compared to flats/apartments at 20% and maisonettes at 18%. It is no surprise that the bungalows were highly preferred since ownership of the house is attached to ownership of land on which the house sits. In addition, a 2015 Home Ownership Survey by Kenyan Bankers Association, indicated that bungalows are cheaper to construct hence the preference. GoK therefore needs to improve the land ownership rules and processes within the country to enable more people own houses.

The figure below indicates the preference on the house type among all income bands in Kenya.

Figure 20: Preference on type of house across all income bands

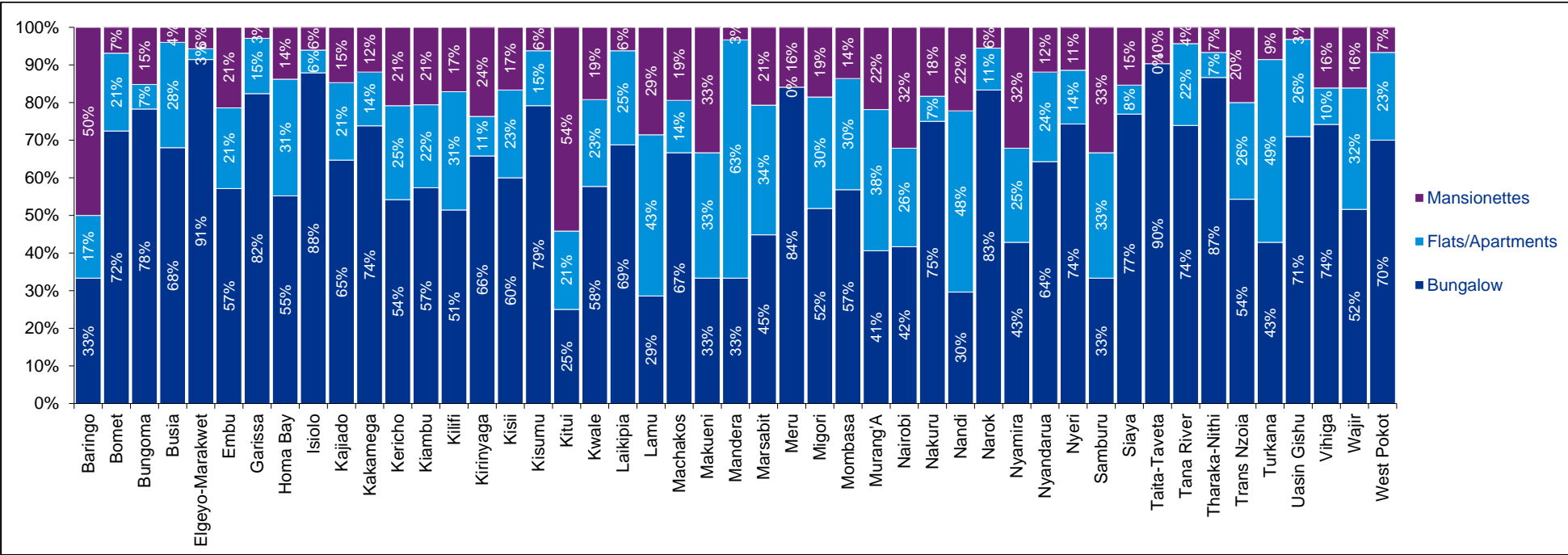


Source: KPMG/SDHUD household survey

Similar results on the preference based on house type were received across the Counties. Elgeyo-Marakwet was ranked the highest at 91% for bungalows while Kitui was ranked the lowest at 25%.

The figure below indicates the preference on the house type among all counties in Kenya.

Figure 21: Preference on the type of house across all income bands



Source: KPMG/SDHUD household survey

Implication to the Affordable Housing Programme

Based on the results across all the counties and income bands, it appears that there is a preference for detached houses such as bungalows. GoK should improve land ownership rules and processes to enable more people own houses. There is a need to ensure that the amenities and the privacy that is enjoyed by the detached house dwellers are transferrable to the apartments. An example of such amenities include well maintained common areas.

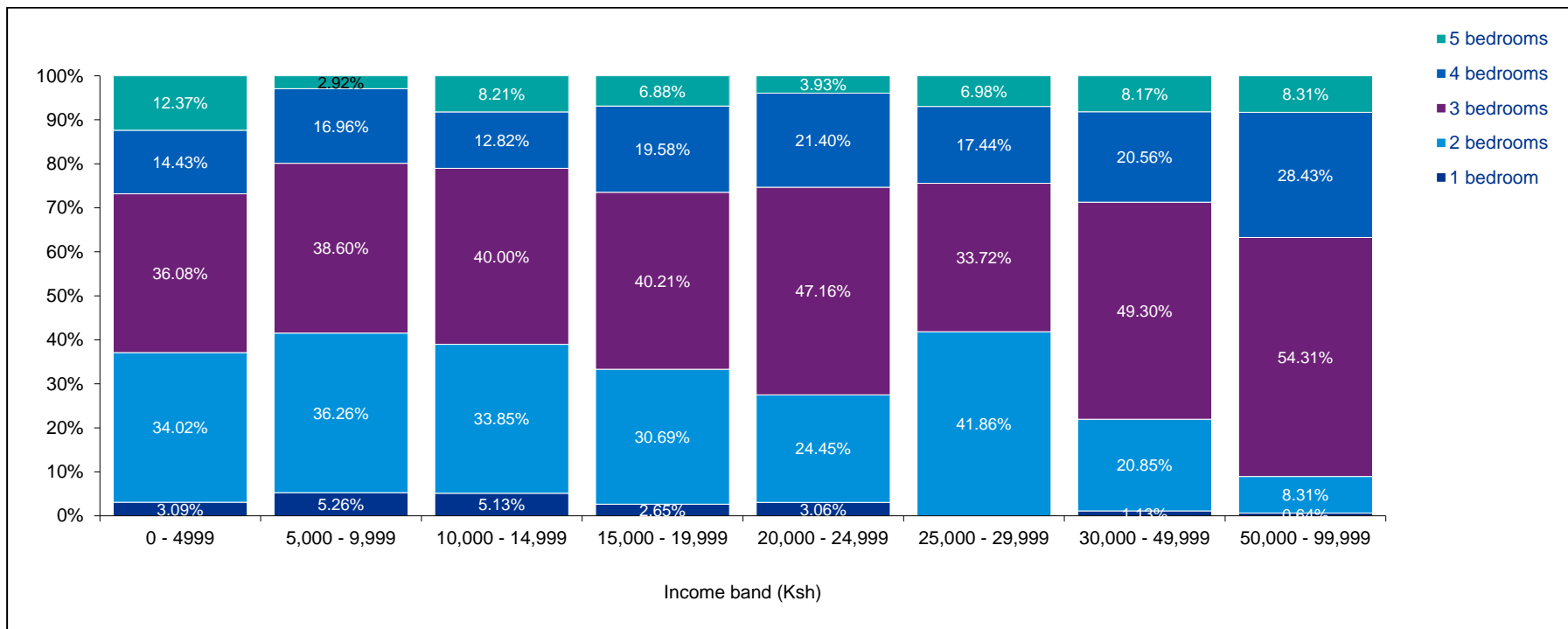
3.2.4 Preference based on the size of house/number of bedrooms

When asked about the number of bedrooms that they preferred, respondents from majority of the income bands indicated that they preferred three bedroom dwellings. Only one income band (Ksh 100,000+) opted for a four bedroom dwellings which is attributable to their high purchasing power in comparison to the other income bands.

The average preferred number of bedrooms across the country averaged at three across the country. This preference is in line with cultural and traditional norms in Kenya whereby parents occupy one bedroom with the male and female children occupying different bedrooms.

The figure below illustrates the house size preference across each income band and the counties

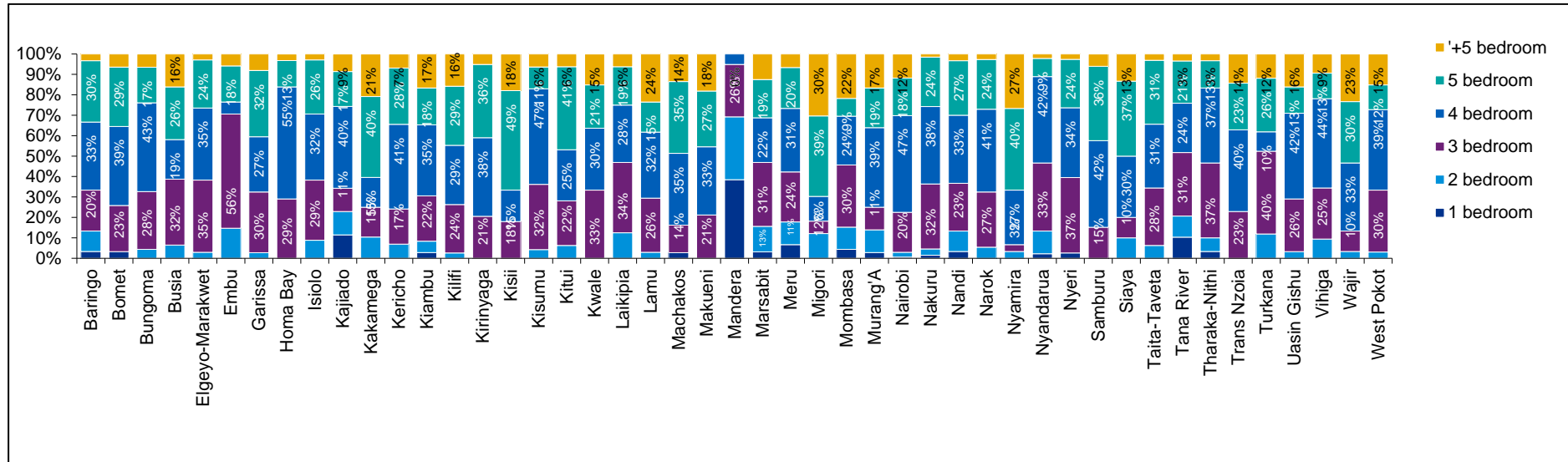
Figure 22: Preference on the number of bedrooms by income bands



Source: KPMG/SDHUD household survey

The figure below illustrates the preference based on the size of the house across the counties.

Figure 23: Preference on number of bedrooms by counties



Source: KPMG/SDHUD household survey

Implication to the Affordable Housing Programme

Three bedroom dwellings are the most preferred. We recommend that GoK considers an increase in allocation of three-bedroom dwellings on a site by site basis. Social guidelines require that children's bedrooms be separated by gender from the age of 10-12. It is KPMG's view that three bedrooms should form the larger proportion of all houses to be mortgaged in the affordable housing scheme.

3.2.5 Affordability

Majority of the respondents indicated that they are only able to afford Ksh 800,000 over the duration of 25 years towards constructing/purchasing a house. This is despite the fact that majority of them indicated that they preferred three bedroom dwelling. The figure below illustrates the stated affordability across each income band and counties.

Figure 24: Preference on affordability by income bands

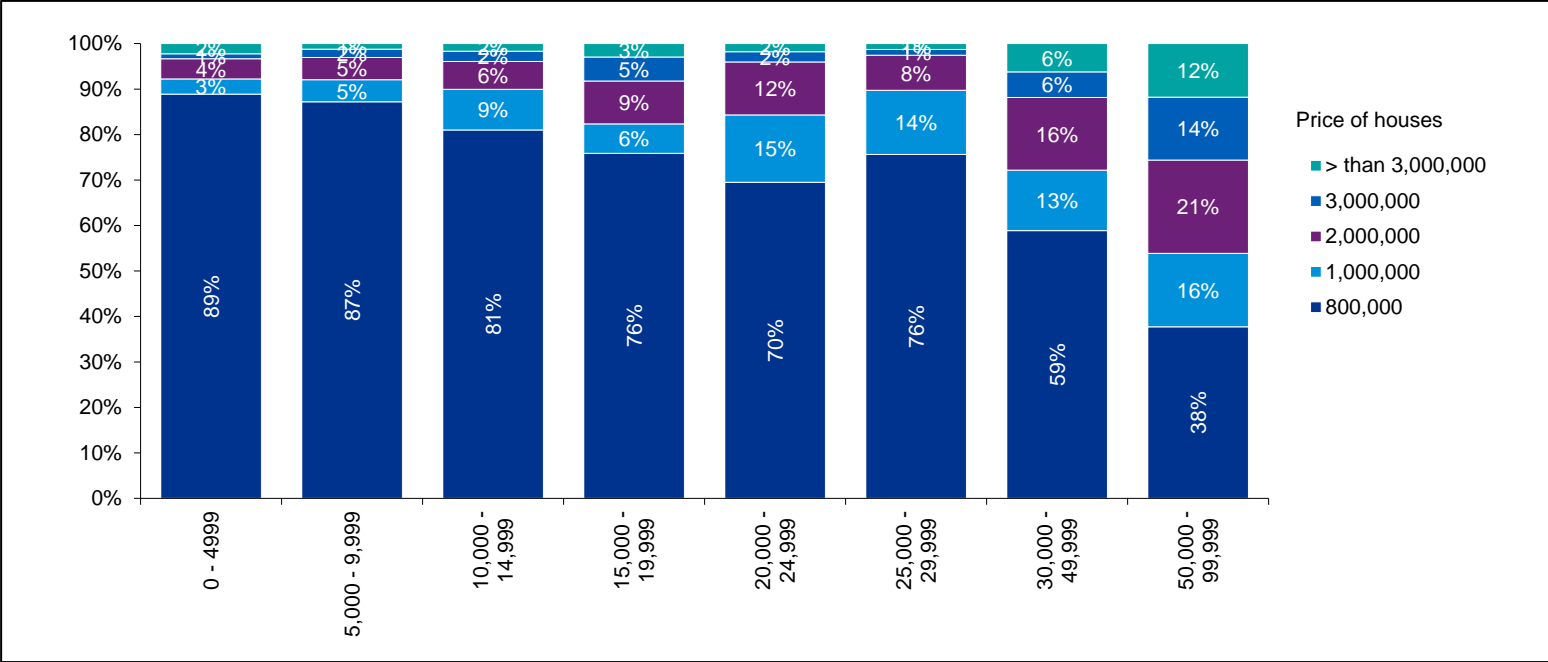
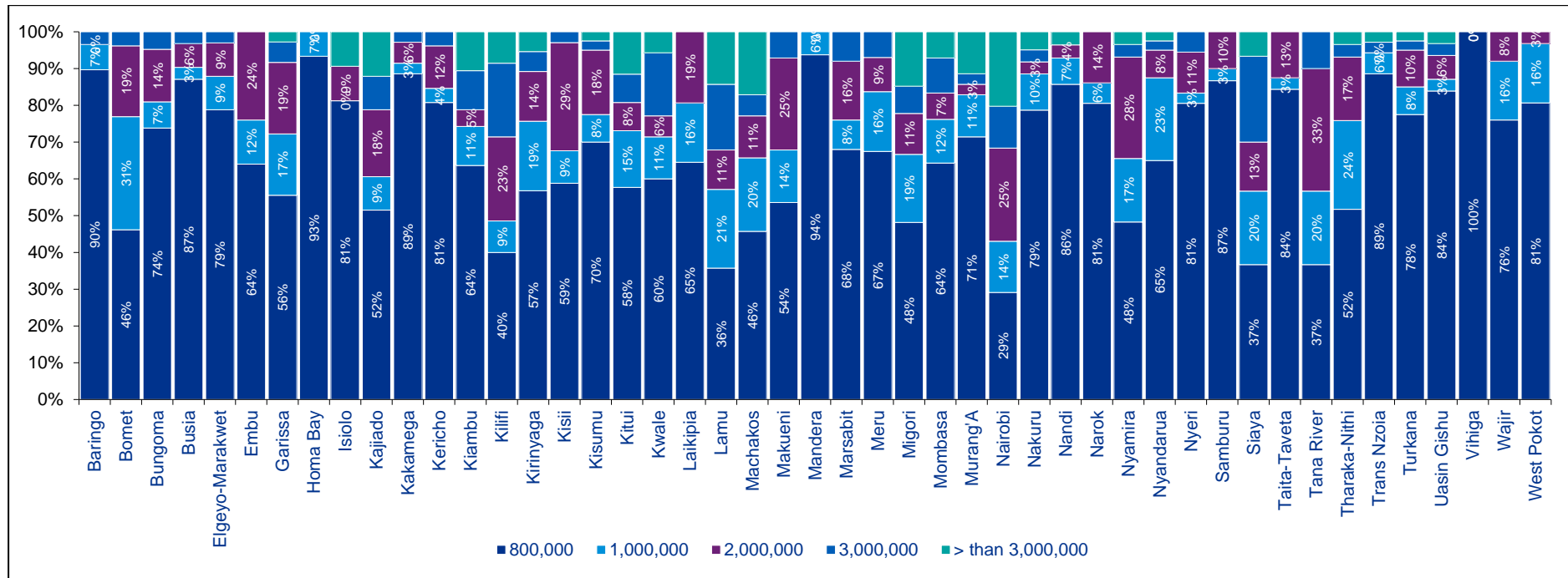


Figure 25: Preference on affordability by county



Source: KPMG analysis

Implication to the Affordable Housing Programme

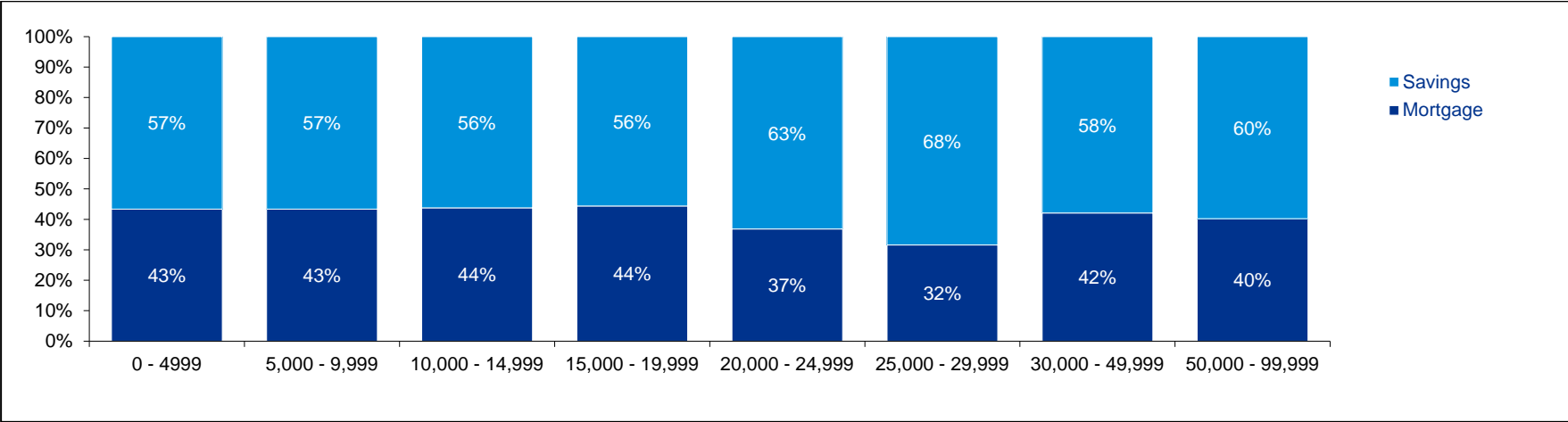
As expected and as per human nature, the lowest cost was selected as the most affordable house. We recommend that this finding be interpreted to mean Kenyans want to pay the least cost.

3.2.6 Preferred mode of payment type

The objective of this question was to establish how the respondents preferred financing the acquisition of their homes. It was observed that, 58% of the respondents preferred paying for their houses through savings as opposed to mortgages. According to the respondents, this was attributable to the fact that owning a home through savings gives them control over the whole process, duration and style of the house. In addition, mortgages are difficult to obtain as well as being perceived to be out of reach for ordinary Kenyans and a save for the wealthy.

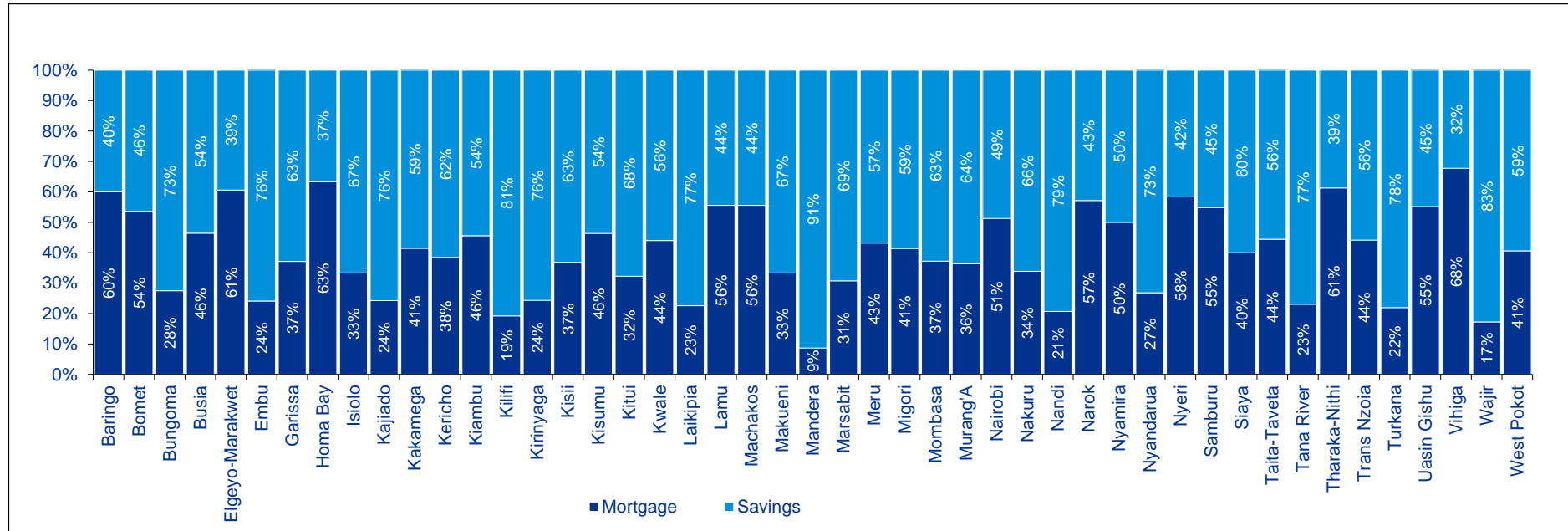
The figures below illustrate the preferred mode of payment across each income bands and counties.

Figure 26: Preference on mode of payment by income band



Source: KPMG/SDHUD household survey

Figure 27: Preference on mode of payment by counties



Source: KPMG/SDHUD household survey

Educate Kenyans on mortgages and ownership and use savings to reach the 10% deposit earlier rather than later.

3.2.7 Preferred repayment period

Based on the interviews, 75% of the respondents preferred a loan repayment period of 0 – 19 years while 15% preferred to have longer repayment period of 20+ years. Only 10% of the respondents prefer a loan repayment period of 30+ years. This repayment periods are in line with the current market situation where loan repayment period from SACCO and conventional loans for house construction ranges between 3 to 5 years.

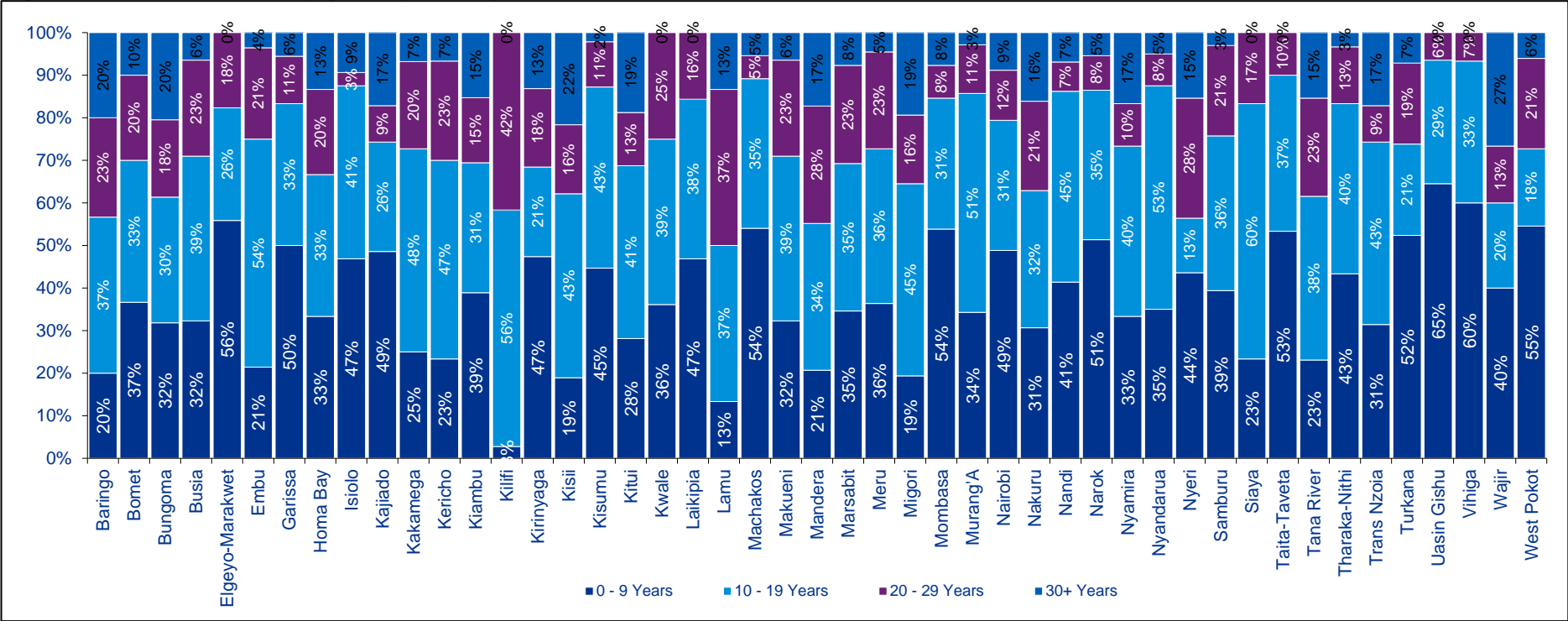
A further look at the preferences across all income bands indicates that the lowest income segment (Ksh 0 – 4,999) prefer 0-9 years loan repayment period, but they would also consider a repayment period of over 30 years. Per county, the preferred loan repayment periods varied with majority of the counties preferring repayment periods of 0 – 19 years. Only Lamu County appears to have a preference for repayment periods of over 20 years.

The figure below provides a summary of the loan repayment period preferences across each income band.

Figure 28: Preference on repayment period by income bands

Source: KPMG/SDHUD household survey

Figure 29: Preference on repayment period by counties



Source: KPMG/SDHUD household survey

Implication to the Affordable Housing Programme

Based on the results across all the counties and income bands, respondents prefer settling their loans in the shortest time possible. This will improve home ownership rates as well as improve liquidity of the NHDF. We recommend that NHDF allows for a prepayment of the entire outstanding mortgage at any time without penalty this will improve the liquidity of the NHDF.

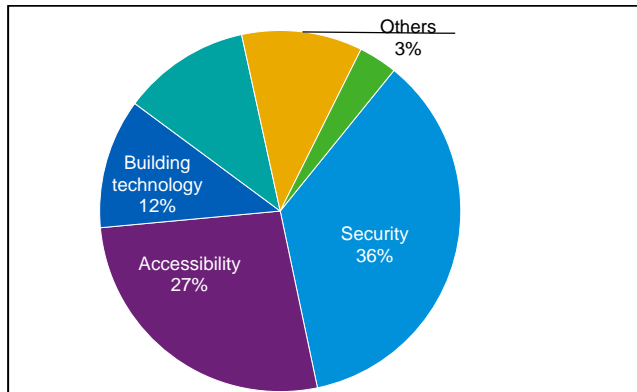
3.2.8 Preferences based on environmental features

To understand the most important environmental features for selecting a place to live, the respondents were asked to rank in order of priority, access to public transport, proximity to place of work, having a garden/backyard, security, proximity to family, proximity to shops, availability of Internet, open space, smart technology, safety and security and building technology.

Safety and security was ranked as the most important consideration when choosing a place to live followed by access to transport as the second most important factor. The least important factor when choosing a place to live across the country was proximity to family, followed by availability of internet.

The figure below illustrates the preference based on environmental features from the not important at all to the most essential.

Figure 30: Preference based on environmental features



Source: KPMG/SDHUD household survey

Implication to the Affordable Housing Programme

Security is the biggest concern for Kenyans. Therefore, this needs to be well implemented as part of the construction. A good and reliable transport system to connect the dwellers to other amenities and their places of work would overcome the other concerns on proximity. KPMG recommends that a safe and reliable public transport system be provided alongside this programme.

3.3 Key players within the low cost housing

Key players within the low cost housing in Kenya can be divided into two: policy makers and financiers.

The following policy makers play a critical role in low cost housing:

- Ministry of transport, infrastructure, housing and urban development role involves: facilitating the development and management of quality affordable shelter for Kenyans, developing housing policies and incentives for the country and developing transport and other infrastructure.
- National Construction Authority (NCA) role is to regulate the construction industry and coordinate its development.
- National Housing Corporation (NHC) has been mandated to implement GoK's housing sector policies and programs. NHC's housing developments are normally affordable to the lower middle and middle-income population.
- Kenya Housing Development Association (KHDA) was established in Nairobi in 2006 to be a representative body of the residential, commercial and industrial property development sector in Kenya. The Association works in conjunction with policy-makers, financiers and citizens to ensure that the property development industry grows rapidly.
- County Governments also play a key role in housing through the provision of approval/permits for residential accommodation. Normally, home owners need to pay an approval fee to the County Government in order to receive the permit. Financial institutions such as the local banks, SACCOs among others also play a role in affordable housing. Their roles include provision of loans, construction financing, custodial services among others.

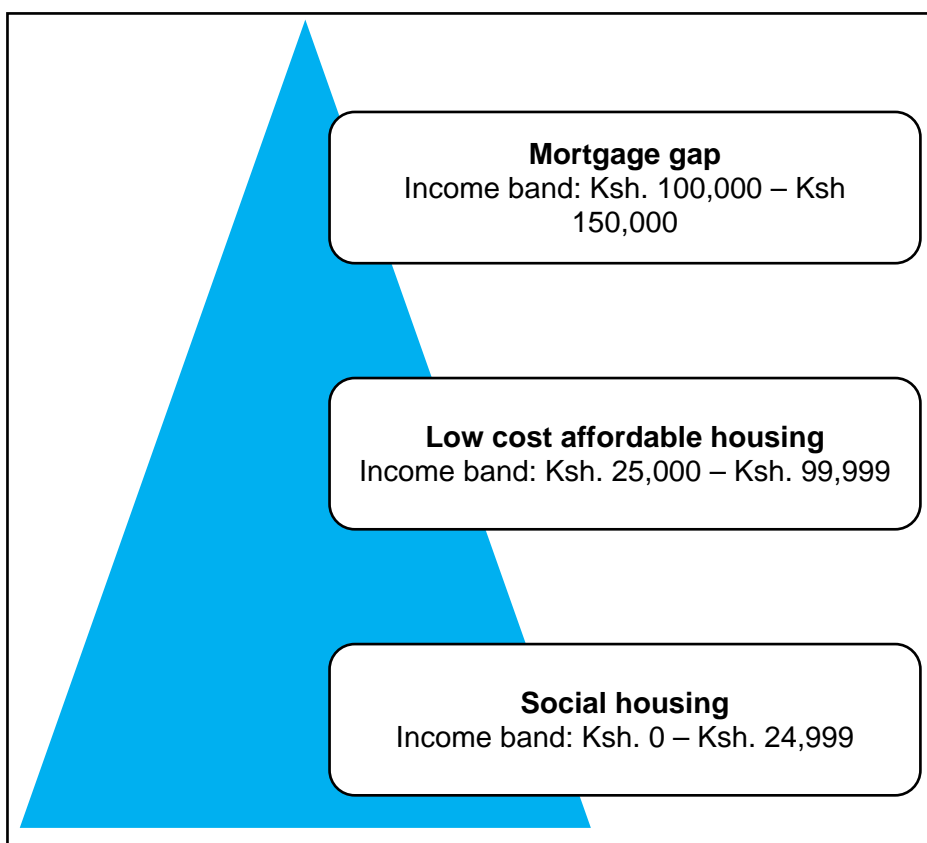
4 Segmentation of the housing market

The purpose of this section is to provide an understanding of the segmentation of the housing market based on the income level and affordability.

KPMG's recommendation of segmentation of the housing market is as follows:

- The mortgage gap is for households with income between Ksh. 100,000 and Ksh. 150,000. The households in this income group are not catered for by the commercial banks. It is therefore highly likely that this income group will find innovative ways to benefit from GoK's housing programme. This includes but is not limited to subleasing and fronting upcountry relatives to be allocated the house. Commercial banks consider this income band to be too risky. There is also little demand for commercial mortgages at the current mortgage interest rate of 13.5%. However, if the mortgage interest rate was lowered, commercial banks will be able to fund this income group.
- Low cost affordable housing can be provided through the government funding for households with monthly incomes between Ksh. 25,000 and Ksh. 99,999. This income group cannot be served by commercial banks. Further GoK intervention would be required such as a reduction of interest rates. This group falls into the Affordable Housing Programme by GoK.
- Social housing could be provided to income groups earning below Ksh. 28,000 monthly as they cannot be considered entirely for a mortgage. This is because due to the fixed nature of the other costs of living, housing budgeting at this income level is unaffordable. Therefore, we recommend that this income group be considered for subsidised renting while taking into account the key tenements of adequate housing.

Figure 31: Proposed segmentation of the housing market



Source: KPMG Analysis

Note: Slum upgrading should not be based on household income but on location of the slum. The households in the slum can then be accommodated within the social housing segment.

The projected potential demand in the segments shown in the figure above will increase from 4.6 million in 2017 to 17 million in 2037 as shown in the table below.

Table 20: Projected number of segmented urban households (2017-2037)

Segment	2017	2022	2027	2032	2037
Affordable housing	1,837,951	2,614,873	3,646,716	4,974,633	6,641,174
Social housing	2,794,971	3,958,685	5,531,849	7,612,014	10,384,416
Total	4,632,922	6,573,558	9,178,565	12,586,647	17,025,590

Source: KPMG Analysis

5 Kenya's slum upgrading strategy

5.1 Slum upgrading strategies and programmes

Slum upgrading refers to physical improvements in shelter and infrastructure¹³. It also includes economic and social interventions that enable such improvements. In Kenya, the working definition of slum upgrading is “improving lives and livelihoods”.

According to the 2009 census, one in every three Kenyans lived in urban areas implying that 12.5 million (32.3%) of the total population (38.6 million) live in urban areas. By 2030, it is estimated that about 54% (30 million) of the population will be living in urban areas. Further, approximately 5 million (40%) of the urban population live in slum/informal settlements.

Over the years, GoK has experimented with different settlement development policies and strategies, ranging from forced eviction, resettlement and upgrading strategies. To reverse this trend, GoK in conjunction with other stakeholders initiated two programmes; the Kenya Slum Upgrading Programme (KENSUP) and the Kenya Informal Settlement Improvement Project (KISIP) guided by the National Slum Upgrading and Prevention Policy (NSUPP). This is aimed at achieving a number of objectives including provision of urban land for private sector-led development of low cost housing, slum rehabilitation and upgrading. NSUPP is being undertaken within a number of policy and legal frameworks including the National Housing Policy 2016, the National Land Policy 2017, the Constitution of Kenya 2010, the National Urban Development Policy (NUDP) 2012 and Kenyan Vision 2030.

To tackle these challenges requires strong partnerships and a paradigm shift in managing slums.

The objectives of slum upgrading include:

- i. To ensure upgrade of housing conditions and the related support infrastructure in urban slum settlements through affordable and participatory measures.
- ii. To minimize and curb the growth of slums using planned and implemented pilot projects and programmes in collaboration with stakeholders.
- iii. To tap on National and County Government's resources and enhance the contribution of slums to urban economic growth and development.
- iv. To develop and put in place relevant institutional framework and mechanisms to support effective slum upgrading initiatives by various stakeholders.

5.1.1 Components of slum upgrading

The Government of Kenya has adopted informal settlement regularisation and slum upgrading strategies to create conditions for home improvement and housing opportunities without necessarily engaging in new housing construction. The approach of facilitating improvement of housing conditions by slum dwellers themselves is an effective way of

¹³ Enabling shelter strategies: Design and implementation guide for policy makers; quick policy guide series – volume 2; UN habitat

promoting enabling shelter strategies. Actions carried out in slum upgrading in Kenya include:

- Community mobilisation and empowerment
- Planning and financial resource mobilisation
- Installation or improving the physical and social infrastructure
- Social housing provision
- Tenure regularisation
- Management and maintenance of developed facilities.

5.1.2 Kenya Slum Upgrading Programme (KENSUP)

In 2001, GoK in partnership with UN-HABITAT initiated KENSUP with a Memorandum of Understanding being signed in 2003. According to the agreement, UN-HABITAT would oversee the upgrading programme in Kenya's three largest cities. The programme has already been implemented in Kibera Estate, Kahawa Soweto, Mavoko, Kisumu and Mombasa.

The aim of the Ksh 884 billion programme is to improve the livelihoods of people living and working in Kenya's slums through provision of security of tenure, housing improvement, income generation and physical and social infrastructure.

The implementation of the said programme is heavily dependent on cooperation among GoK, local authorities and UN-HABITAT, supported by the civil society and private sector organisations, agencies and companies. The role of the three main players is to create an enabling environment for slum upgrading interventions to succeed.

Some of the current ongoing projects under slum upgrading as shown below:

Table 21: Ongoing social housing projects as at 2018

	Project	Available acreage	No. of households	No. of estimated housing units
1	Kibera A	Nil	1, 632	Nil
2	Kibera B	10	2,103	4,400
3	Kibera C	7	1,566	3,000
4	Kibera D	13	2,118	5,700
5	Mariguini, South B	6	2,100	2,600
6	Kiambu, Eastleigh	59	4,000	4,000
	Total	95	13,519	20,400

Source: KENSUP

Some of the notable achievements under KENSUP include:

- The successful relocation of 1,200 households from Soweto East, a Kibera village, to a site in Langata
- Construction of 822 housing units in Kibera and 245 market stalls
- Vetting and allocation of 691 units to beneficiaries
- Installation of high mast flood lights in various counties
- Formation of 30 housing co-operative societies and settlement executive committees.
- Construction of social hall and dispensary in Nakuru
- Construction of classrooms in Huruma-Eldoret, Mukhaweri in Bungoma and Amalemba in Kakamega

- Construction of Mavoko sustainable neighbourhood project comprising of 462 residential units, jua kali sheds, commercial centre, primary school, nursery schools and police post
- Mapping and inventory of slums and informal settlements in Kenya
- Construction of roads in Kibera, paved lanes and foot paths in Lamu
- Protection and improvement of shallow wells in Lamu and construction of Ziwa la Ng'ombe dispensary in Kisauni Mombasa
- Construction of social hall and nursery school in Malindi and markets in Nyeri, Kisumu and Langas in Eldoret
- Preparation of a slum upgrading and prevention policy. The draft has received Cabinet approval for publication

Key challenges encountered in the implementation of slum upgrading strategies

Although slum upgrading strategies have the backing of GoK, UN Habitat, World Bank and other stakeholders, a number of institutional and program challenges have been encountered during their implementation. These comprise of:

- a) Unrealistic or unstated expectations - Over the course of the decades, slum dwellers have become frustrated and cynical mainly due to their perception of government promises on upgrading projects which never seem to materialise. In addition, past projects resulted in the displacement of original residents which results in the residents regarding any government interventions with a lot of suspicion.
- b) Limited land space - In Nairobi, 60% of the population lives in slums that occupy only 5% of the total land area. There is limited land space to cater for all residents within the slum settlements as well as scarcity of land for re-location.
- c) Inadequate information dissemination - Lack of involvement in the decision making process and local governance of the slum dwellers as well as ignorance, lack of knowledge and skills to cope with challenges leads to politicisation of the whole process and exploitation of the slum dwellers.
- d) Environmental degradation - Slum upgrading also faces the challenge of extensive environmental degradation fuelled by industrial effluent, uncollected garbage and flooding. Slums are also endangered due to the flammable building materials, illegal electricity connections and use of paraffin and charcoal for cooking in overcrowded houses.
- e) Social segregation - There is extreme marginalization of slum dwellers in governance circles, thus worsening their bargaining power. Individuals living in slum areas are not consulted nor involved in the upgrading programmes thus reducing cooperation levels with the communities involved.
- f) Exploitation of the low income earners - Slum upgrading also faces the challenge of dealing with slum exploitations perpetuated by high cost of house rents demanded by the landlords, corruption from police and administration officers and high cost of service delivery by the private sector.
- g) Bureaucracy - Slum dwellers are subjected to long, expensive and exhaustive procedures before they can buy property or rent/buy a house. As a result, these individuals prefer to live in the slums where there are fewer procedures governing their dwelling.
- h) Lack of transparency – the selection process of actual program beneficiaries, bidding and contracting processes has been faced with flaws leading to lack of community ownership of the programme.
- i) The program was designed with community participation as one of the key elements. However, this was not the case as the communities targeted by the projects were not

fully engaged. For instance, in KENSUP programme the residents were not consulted in setting up the transitional housing rent rates.

- j) There was lack of coordination among the key stakeholders. E.g. the Ministry of Housing which was charged with implementation of the KENSUP project in partnership with UN HABITAT, did so without UN HABITAT's involvement.
- k) The lack of transparency in selecting the municipalities, bidding and contracting processes led to conflict and insufficient evaluation of processes undertaken. As such, the shortcuts undertaken result in sub-standard procedures being used and implemented.
- l) The programs' funding is donor-sourced with little direct investment by the Kenyan government resulting in a lack of sustainability.
- m) Migration out of KENSUP housing facilities in the Soweto zone due to high mortgage fees
- n) No clear link between KENSUP and KISIP despite the same ministry/government office being involved in the delivery of these two programmes.
- o) Projects falling behind schedule and increased project costs due to litigation issues.

Case Study: Kibera Soweto Village Zone "A"

- GoK funded construction of the site at Langata comprising 1,800 rooms.
- GoK funded construction of Zone 'A' at the contract sum Ksh 2.9 Billion comprising 822 housing units, physical and social infrastructure as well as associated external works.
- Only 822 households were resettled against the actual households of 2,454, meaning 1,632 households missed out.
- The housing units constructed were self-contained housing units on low-rise flats consisting of only four floors.
- The size of the houses did not meet housing preferences - one roomed units were only 108, two roomed 509 and three-roomed were 144. Over 70% of the dwellers preferred the two roomed houses and were willing to pay for them.
- The slum dwellers were not aware of the housing prices until 2016, when the cabinet approved subsidized housing prices of Ksh 600,000; Ksh 1Million and Ksh 1.3Million for the one-roomed, two-roomed and three-roomed, respectively to be paid over a period of 25 years at 3% interest. The lack of awareness contributed to the anxiety faced by the dwellers.
- Zone 'A' cooperative society raised the 10% deposit on behalf of all successful beneficiary members indicating a strong savings culture amongst the people living in informal settlements.
- The bureaucratic processes are a major issue - individual members pay monthly mortgages directly to KENSUF and avail the deposit slip to the mortgage collection unit at the department of housing for receipting necessitating two trips.
- The monthly repayments currently stand at Ksh 2,700; Ksh 4,300 and Ksh 6,300 inclusive of mortgage protection for the one roomed, two roomed and three roomed units, respectively.
- Facilities are managed through the estate management committee financed by the beneficiaries.

5.1.3 Kenya Informal Settlement Improvement Project (KISIP)

As part of Kenya's Vision 2030 initiative, GoK partnered with the World Bank, the Swedish International Development Cooperation Agency (SIDA), and Agence Française de Développement (AFD), to form KISIP. The project focuses on improving living conditions in existing informal settlements through investing in infrastructure and strengthening tenure security.

KISIP was initiated in 2011 and targeted 15 municipalities: Nairobi, Mombasa, Eldoret, Naivasha, Machakos, Malindi, Kakamega, Nyeri, Thika, Kericho, Kitui, Garissa and Embu.

Unlike KENSUP, KISIP had a short term focus on infrastructure of 5 years and targeted land tenure in 15 municipalities. Some of KISIP key achievements include:

- Increased land tenure planning and survey in 13 settlements in Nyeri, Malindi, Kakamega, and Eldoret.
- Infrastructural investments in Nairobi, Machakos, Mombasa, Eldoret, Nakuru, Naivasha, and Malindi. In total 51 high mast lights have been installed, 17.4 km of roads, 11.7 kms of drainage system and 23.2km of footpaths rehabilitated, and 50.9 km of sewer pipeline lay.
- Planning for urban growth in all 15 municipalities with a number of studies carried out on situation analysis and informal settlements in 15 towns.
- Institutional strengthening in all the 15 targeted municipalities through staff capacity building and community participation.

Despite the achievements to date, some of the key challenges of KISIP highlighted by the SDHUD include:

- KISIP was unable to utilize civil society organizations to mobilize communities
- Lack of sustainability since most of the programme's funding is from donors with little investment by GoK.
- Poor linkage between KISIP and KENSUP hence no clear link on how the projects should complement each other despite having the same Ministry involved.

5.2 Key success factors for successful implementation of slum upgrading strategies

- n) Delegated decision making: One key aspect of the programmes was delegated decision making in which the decision making role was to be cascaded down to the lowest level, resulting in a much greater role for local authorities. The principle behind delegated decision making was to guarantee accountability and efficiency in the delivery of services. In addition, this also promotes partnerships between the central and local governments and between local governments and communities.
- o) Capacity building: In an effort to achieve sustainable interventions, capacity building of the local communities and local government is key. It is key to address the relationship between the community and the government sectors through e.g. training forums, as this is the way to create sustainable capacity building initiatives.
- p) Inclusive participation: KENSUP attempts to ensure that community members are involved in slum upgrading and acknowledges the diversity of stakeholders in the community. Involving the local authority and communities will largely contribute to the success of the initiative as the National government has little influence on the day to day activities
- q) Partnerships: Slum upgrading programmes favour broad-based partnerships between the key stakeholders including local government, National government, civil society and the private sector. These partnerships promote community participation, capacity building, empowerment and efficient resource utilisation.
- r) Communication: In an effort to upgrade the slums of the designated regions, it is necessary to keep the participating communities and local authorities well informed of the ongoing development projects so as to maintain their commitment.

- s) Gender awareness: Gender awareness must permeate all of the activities of the programme, if the slum upgrading interventions are to be successful i.e. they have to cater for the needs of both men and women.
- t) Empowering community members: Training community members in practices such as construction, water supply, sanitation and solid waste management is crucial in slum improvement.
- u) Financial empowering of community members: Community members can be encouraged to form cooperatives to allow for collective ownership of property which was previously beyond their reach.
- v) High rise flats where land is scarce: Where planning regulations allow particularly in Nairobi, the upwards of ground plus 12 level flats should be developed to accommodate as many as possible.
- w) Consideration of housing size preferences: Tenant purchase option be adopted in the proportion of 70:30 for two-roomed and three-roomed, respectively.
- x) Choices in transitional housing arrangements: Facilitate the tenants to find alternative locations to stay as they await the construction of the housing units, while motivating the structure owners to demolish their own structures and salvage materials if possible.
- y) Make firm commitments to the communities about project delivery timelines and sale prices. The housing prices at the time of completion and the completion dates for Kibera were not communicated to the prospective house owners until the time of occupation.
- z) Professional project management of such developments: For professional project management and seamless decision making, project management teams (consulting team, construction, finance and management) should be under one developer who handles all the aspects of the development. The recovery of development cost can be realized from a combination of:
 - Offsetting housing cost through monthly management fees for developed houses over the period of 25 years.
 - GoK paying the developer the balance of the other costs through land swaps.

5.3 Strategies in slum upgrading

5.3.1 Tenure regularisation:

While recognising the complexity of land relations within the slum settlements in Kenya, efforts need to be made to achieve sufficient tenure security through sustainable, practical and socially responsible ways of improving tenure security and rights. In dealing with tenure regularisation, the strategy needs to take into consideration the following:

- Develop approaches towards beneficiary selection that are participatory and transparent allowing communities to be consulted to verify 'official' census data.
- Ensure that the household surveys which include poverty mapping exercises, environmental and infrastructural assessments and socio-economic surveys result in an updated registers listing those households and individuals who are the intended beneficiaries of the comprehensive upgrading project.
- Offer recognizable rights to land and housing; where possible ensure that the policy framework outlined in the National slum upgrading and prevention policy is implemented.

- Simplify the land tenure regimes using intermediate forms of legal recognition in accordance with land titling laws of Kenya.
- Leasehold agreement, granting beneficiaries a long-term rental of the land and services at affordable prices. This might include an option to purchase the land after a specific period of time of continued and uninterrupted occupancy.
- Land banking is a possibility even though it is costly and administratively difficult. The process of identifying land to be banked is lengthy with bureaucratic hitches.
- Provide assurance on investments made on land or housing against confiscation or demolition or eviction.
- Slum upgrading programs should consider environmentally sensitive areas and discourage relocation of settlements to areas mapped out for ecological services.

5.3.2 Review the regulatory frameworks

The current regulatory framework on planning and building standards which have a direct impact on both the direct and indirect development costs often imposes unrealistic or unachievable requirements, making access to formal affordable housing expensive. A review of the regulatory framework is therefore essential. The following key interventions are required to make housing cheaper:

- Revise minimum planning standards with the involvement of communities who live in unauthorised settlements.
- Permit the most efficient use of available land, by relaxing constraints on the forms of development and uses to which people can put their plots.
- Simplify planning application procedures to make conformity easy and affordable.
- Heavily penalise any new illegal developments.

5.3.3 Supply of affordable land

Proactive responses to increase the supply of affordable land for the urban poor is an imperative to stem the growth of new slums. To achieve this strategy, the following key initiatives are essential:

- Develop mechanisms for Urban Land pooling and Land Readjustment for managing and financing urban land development especially in selected urban fringe areas.
- Develop a coherent framework within which land owners can subdivide their parcels and make a reasonable profit.
- Create and implement an efficient land use plan within new urban developments.
- Create an enabling environment for the development of affordable rental units.

5.3.4 Supply of affordable housing

It is imperative for GoK to put in place a framework of planning and urban management that creates and maintains a 'level playing field' for all stakeholders in the value chain including suppliers of housing, services, credit and construction. This strategy lays emphasis on establishing an equal playing field to encourage investment in affordable housing for the urban poor and in the slum areas. Accordingly, it implies the following:

- Revisit and enforce standards and administrative procedures to reduce entry costs and accelerate the supply of new legal development.
- By balancing supply to demand, ensure that land and housing prices are within the reach of all income bands in the society and careful consideration and targeting of subsidies. This can be achieved through preparation of a land budget, to assess how much land will need to be urbanized based on population growth estimates and other trends such as employment and transportation in all urban areas.
- Prepare a land budget by county to assess the amount of land required taking into consideration factors such as:
 - The projected demand for housing, commercial and industrial land development.
 - Density levels for specified types of housing and other land uses - based on minimum official plot sizes, occupancy levels and road widths.
 - Requirements for communal facilities such as schools, clinics, religious sites, public open spaces, etc. at central and local levels.
 - Topography and ground conditions: these include consideration of issues such as steep slopes, load-bearing capacity and vulnerability to extreme weather changes.
 - Accessibility of the available land.
 - Public transportation networks, location of economic activities, and
- Prepare a housing needs assessment for the same time periods as the land budget, taking into consideration
 - The replacement of existing units which will have fully depreciated during the planning period.
- The upgrading and replacement of deficient units where upgrading is not economically feasible; a large proportion of substandard housing can usually be improved, providing the owners feel secure and have access to credit.
 - Estimating the proportion of the existing housing stock which can be upgraded where this is economically feasible.
 - Estimating the nature of housing needs because not all households want, or can afford, the same type of housing.
 - Additional housing expected to be provided on newly urbanized land in the urban periphery.

5.3.5 Strategies for urban infrastructure and basic services

It is envisaged that informal settlements will become more densely populated and new squatter settlements will mushroom on marginal lands. Strategies need to be put in place that include:

- The design of urban infrastructure and services to allow for incremental upgrading as household incomes rise and so does their capacity to pay for services increases.
- Encourage single-supplier for services as opposed to separate providers for the full range of services (i.e. roads, water, sanitation, drainage, solid waste, electricity etc.) due to resource and time constraints.
- Assess the willingness of slum residents to contribute to infrastructure services and costs, provided they are availed adequate information regarding trade-offs.

- Community led and demand led approaches should be used to prioritize and influence the content of initiatives and to weigh on standards and services options to ensure acceptability and enhanced demand responsiveness.
- The County governments need to adopt a more ‘enabling’ approach to the delivery of basic services accessible to the poor through the more effective mobilisation to support initiatives by slum organisations.

5.3.6 Strategies for financing slum upgrading

Addressing the financing needs for slum upgrading has proven to be a challenge for most governments and Kenya is no exception. It is therefore envisaged that the bulk of financing for slum upgrading will need to be mobilised locally. Such strategy has to link with other aspects of living such as alleviating income poverty and innovative mobilisation of savings by the residents themselves. Some of the initiatives proposed include:

- Encourage the build-up of savings, allowing for informal pooling to take place such as the “chamas”, to provide as security for commercial borrowing from the financial sector. The borrowings provide an additional flow of funds for shelter and infrastructure but would also have the additional benefit of ensuring greater ownership, sustainability and effectiveness of targeted interventions.
- Provide support and encourage the establishment of grassroots group financial discipline and capacity building through savings and credit organisations, as a way of encouraging collective decisions by slum residents about how to use that money, acquiring the management experience and negotiating skills to tackle larger development issues.
- Boosting savings and credit on a large scale through community-based savings mechanisms and support self-help construction activities, to boost the basic mechanism by which poor people begin to deal collectively on issues such as searching for land, securing subsidies and infrastructure development.
- Encourage micro-finance institutions to increase lending to slum residents on the basis of social systems as collateral rather than real estate to improve the credit worthiness of slum residents in formal financing schemes.
- Encourage the use of savings as a strategy, promoted by civil society organisations for re-development and provision of basic infrastructure services.
- Explore partnerships with donors and international financial institutions to implement innovative financial mechanisms.

5.3.7 Inclusion and participation of slum residents

It is extremely important to understand that slum residents represent an extremely important element of the urban labour force and contributes significantly to total productivity and labour market competitiveness. Therefore wide ranging improvements in the lives of the slum residents require their active participation as initiators, partners and as resources on which to build. Strategies to encourage their active participation need to take into consideration that

social capital is the most essential assets for the low income earners. Some of the initiatives proposed include:

- Treat the slum residents as partners rather than beneficiaries
- Ensure that all interventions have political or social leadership from both National and County levels as this would give the much needed political and social backing to slum upgrading projects.
- Put measures in place to support the work of slum resident organisations especially with regard to the development of capacity for collective social action.

6 Cultural impact on the housing market

This chapter seeks to illustrate the impact of the Kenyan culture pertaining to traditional and urban home ownership as well as the drivers of each.

6.1 Traditional home ownership

Traditional home ownership has been defined as home ownership as influenced by pre-colonial African culture. Livelihood streams in this era mainly consisted of pastoral nomadism, land based agriculture, long distance trading, community raids and fishing. The settlements' location was mainly influenced by land availability and/or water bodies where the communities undertook their economic activities.

Methods of land acquisition for communities that settled in one place included inheritance, ownership by right of land clearance and in some cases, purchase by barter trade. It is interesting to note that some agricultural based communities today utilise every inch of available or extra land within the homestead as farm land.

Other communities practised migration due to factors such as long distance trading, escape from warring pastoral nomadic communities and pastoral nomadism amongst others. Pastoral nomadic communities such as the Masai migrated to areas with adequate water and pasture for their animals. There were however variations among the pastoral nomadic communities such as the Pokot who upon the approval of the council of elders, would utilise dry season grazing ground. This allowed for migration over shorter distances in search of pasture. In terms of housing, this culture allowed for ownership of homes where the women and children lived through-out the year with the migrating herders developing temporary shelter in the grazing areas. Land tenure in the main settlements could be defined by family and clan but the land tenure in the grazing areas was communal and families could not claim ownership. No one could therefore set camp/build a permanent house within this area(s).

Other traditional cultural practises that affect home ownership include:

- Initiation rites: This marks the transition between childhood and adulthood for young people. Separate huts were constructed for the young men to signify maturity and preparation for marriage.
- Taboos: Interactions between different genders, age groups and in-laws were closely monitored, with certain prohibitions being put in place. For example, in some communities, it was/is considered a taboo for a man to be in his in-laws house at night or for a son in-law and the mother in-law to share a meal in the same room or sleep under the same roof. Certain rites had to be undertaken for this to be permissible.

Colonialism brought about a change in the form of settlements in the pre-colonial era. These changes include formation of native settlements under Crown Lands, exposure to education, introduction of hut-taxes and the *kipande* system¹⁴. Despite these changes, communities re-established themselves and continued with the traditional settlement patterns that allowed for establishment of family homes in specific locations. Migration of household heads and young unmarried men also began in a bid to generate money for payment of hut tax. Migration resulting from the construction of the Kenya-Uganda railway, as well as the first and second world wars was also experienced at this stage.

Some of cultural influences still manifest in today's home ownership drivers. These include:

- For a married man, it is important to own a house in his rural home, separate from the parents. The house is mostly unoccupied for the better part but is culturally important for spending the night when visiting the paternal home. This therefore necessitates the need to travel up country periodically to visit one's home. The belief that your home is where your family, clan and ancestors are from is still held. Owning a rural home also allows for farming and livestock keeping which may not be carried out easily in urban areas.
- A family is highly unlikely to own a residential house in the maternal location
- A married man cannot sleep in his in-laws' house necessitating the need for him own his own house, so he must own one. In very strict families, only the grandchildren can sleep over at their grandparent's house.
- For families where burial sites are designated within the homestead, a household must own a home/homestead for burial rites. This also presumes allocation of adequate space for a family graveyard.

6.2 Urban home ownership

Urban home ownership refers to ownership of houses as influenced by modern cultural practises. Modern practises such as careers, education etc., affect the decision on whether to own a house or not.

The ease of obtaining mortgages has increased with new technology, which in turn has hastened constructions.

6.2.1 Urbanisation

Many people are leaving the rural areas in search of greener pastures in the urban areas. According to World Bank, it is estimated that about 27% of Kenyans live in urban areas with the number projected to double by 2045.

Culturally, once a young man reaches 18 years of age, they are expected to fend for themselves as well as support their families. In a bid to do this, many young people travel to urban areas in search of employment. Due to their financial status at the time, majority are not able to afford decent housing and more often than not, result in living in the slums. A few are housed by their relatives living in better living conditions.

¹⁴ In Kenya, under British rule, the *kipande* was an identity document which featured basic personal details, fingerprints and an employment history

6.2.2 Young adults in transition

The need to own a home among young adults (20-30 years) is greatly influenced by the need to provide housing for their future families. Two schools of thought exist amongst this age group namely:

- All other factors being constant (access to land, mortgage facilities etc.), persons who are interested in owning a family home now would rent it out as a source of income in the short term and then use it as a family home in future
- If one could afford a smaller home for their current needs, it would be to reduce the burden of having to pay rent today. This home would then be rented out or given to another family member once their needs changed

For this group, access to reliable public transport is critical as they felt that they would not mind living outside the core cities or towns in a bid to get affordable housing, but it was critical that they would still be able to access their places of work, followed by the other social amenities such as trading centres and entertainment spots. In support of this preference, 59% of the respondents felt that access to public transport is very important.

By contrast, the influence on the older generation is the need to provide a home for their children but with measures that allow for a good quality life as they age and children become mature and leave home.

6.2.3 Concerns over aging and infirmity

The concern over infirmity especially for the male gender came out clearly. Some respondents felt that older women are able to spend a lot of time in their children's homes hence there are always people to take care of them. However, the men would feel that they cannot do this and opt to remain at home with no assistance. There was also the perception that old age homes are not "*African*" and would contravene with the need for privacy and the need to age with dignity. Other key words used are self-sufficiency, doing things for yourself and maintaining the quality of life.

Simple chores such as carrying water with buckets also becomes more difficult as one ages and in today's social set-up where the extended family members do not live in close proximity, the social support systems no longer exist for this age group. A home with running water, electricity and all amenities that make life easier is therefore important for this age group.

The specific intervention is a home that takes into account back problems, slower movements due to illness or shortness of breath and the general infirmity that comes with old age. Quick access to emergency response services with the understanding that there is minimal immediate family support prior to medical respondents' arrival. As a result apartments are not preferred due to the need for staircases. The neighbourhood should also cater for safe walking spaces for this age group.

6.2.4 Inheritance value

The older age group (40-60 years) value affordability of smaller units as an asset that can be handed over to their children once they become adults. These units could also be used when the family is younger and with smaller children or rented out for income until the children come of age. The rental units would however have to be close enough to the current residence for hands-on management of the rental property.

6.2.5 Families with young adults

Young men and boys living in the family home were perceived to need their own privacy as they start dating and hosting friends. There were some respondents who felt that these young men need their own accesses so there is no unnecessary conflict between parents and young adults. There was also the feeling that families with adolescents and young adults have conflicts (verbal) hence people need the space to vent without having to worry that their every word is being overheard by their neighbours. This space would, however, be limited by security concerns hence the preference for single units within gated communities. From the survey 60% preferred to live in a bungalow while 19% preferred to live in a maisonette.

The number of rooms in a home were also defined to provide a room for parents, boys and girls and in some cases visiting relatives. As such a typical house would be represented by common areas, three bedrooms and a small external guest room. The layout of the house would also have a common area such as a lounge or dining room separating the children's rooms from the parents' rooms to ensure a healthy relation between parents and children. The concern by both men and women for females in the household was safety while for boys it was freedom within certain limits. In support of this 55% of the respondents felt that safety and security were essential while 41% felt that it is very important in selecting a home.

From the Household Survey, however, only 17% of the respondents lived in a house with 4 or more habitable rooms. This suggests that people live in households with fewer numbers of rooms but if they had a choice, they would have more rooms. In the same vein, about 72% would prefer to live in a house with 3 to 4 bedrooms.

The concept of gated communities and houses with own compounds is therefore valued by this group. In support of this 42% of the respondents felt that creating communities is a very important factor.

It also suggests that the achievement is downgraded when the home owned is an apartment as opposed to a home with its own compound. As such some respondents preferred to own a home that they can expand within their cash flow capabilities as well as gradual expansion as their families grow. To avoid unregulated expansion, there was a feeling that two or three design options be given within a certain settlement and that adequate enforcement be put in place to curb rogue home owners.

The key words used were - when planning for a home today, one should ensure that the same home would bring happiness to the family in the future. The family in the future includes the forethought of your own children having spouses and children of their own. The value base here is that the happiness of parents' tomorrow is validated by the happiness of their children and grandchildren.

In contrast, it is clear that the need the affordability of housing must be supported by an investment in social change over the negative perception of apartments and flats.

6.2.6 Urban agriculture

Forty-three (43%) of the respondents felt that having a garden or backyard is important, the expectations on the components of this space may be defined by the culture of the respondents as well as their age bracket.

There is an interest in urban agriculture in the form of horticultural gardens and livestock keeping for the group approaching retirement age. This is not just to supplement the reduced income after retirement but it was also deemed to have a “feel-good” value to grow ones’ own food in the retirement home. Secondly the fear of consuming food irrigated with water contaminated with sewage or harmful chemicals/heavy metals would be eliminated by growing one’s own organic food from reliable water sources.

There is of course a risk that the neighbours would not accept to have livestock within a resident community; but the concept of small gardens (as opposed to landscaped lawns or concrete yards) was deemed to have more support than livestock keeping.

The issue of urban agriculture was important as it was felt that as one retires with no other interests then this would provide a channel for retirees to pursue. In view of the reduced energy levels of this age group, simple, affordable forms of urban agriculture were preferred.

7 Housing demand projections

This chapter projects the estimated demand for housing in Kenya over the next 5, 10, and 20 years.

Key concepts:

- Housing need is the total number of new housing units required if all households are adequately housed. It refers to the number of houses required, given growth in households and is computed as the sum of the current deficit and the net emerging housing need.
- Housing demand makes allowance for affordability, it refers to the willingness and ability to purchase a house.

7.1 Overall approach and methodology

Step 1: Determine the housing deficit in baseline year 2016

Step 2: Project the number of total households in Kenya in 5, 10 and 20 years and the emerging household need over the same period

Our approach considered two methods to determine the growth rates for household size going forward.

- *Method 1: Projections based on the historical growth of household size*
- *Method 2: Projection based on population growth and a constant household size. This method is presented in the appendix.*

In this report we opted to use Method 1 that projects the growth of households because historically the growth in households was higher than the population growth. This implies a decrease in household size overtime.

Step 3: Project the housing supply in Kenya in 5, 10 and 20 years

Step 4: Determine the proportion of urban households to rural households in each county in 5, 10 and 20 years

Step 5: Based on KPMG survey results, determine the distribution of urban households per income band in each county

Step 6: Based on KPMG survey results, apply the ratio of tenants in each income band to the number of urban households distributed among the income bands

Step 7: Based on the 30% housing budget ceiling and the proposed house prices, analyse the income bands that can afford each proposed housing type

Step 8: For each housing type, extract the number of urban tenants in the income bands that can afford to finance the purchase of the proposed houses, based on a 30% housing budget ceiling, using three mortgage rate scenarios

Step 1: Determine the housing deficit in baseline year 2016

We used the year 2016 as the baseline year and the 2015/16 Kenya Integrated Household Budget Survey (KIHBS) as a basis for our analysis of the current deficit. Our assumptions on housing deficit are centred on adequacy of the dwelling unit.

The principle for adequate housing is guided by the characteristics as clarified in the United Nations Committee on Economic, Social and Cultural Rights general comment No. 4 (1991) on the right to adequate housing and general comment No. 7 (1997) on forced evictions.

The right to adequate housing is broader than the right to own property as it addresses rights not related to ownership and is intended to ensure that everyone has a safe and secure place to live in peace and dignity, including non-owners. Therefore, the current housing deficit does not take into account ownership in estimating housing need.

Using data collected by KNBS and our own analysis we have defined the current housing deficit as the number of households that are inadequately housed.

Adequate versus inadequate housing

We analysed the walling materials of dwellings as per the KNBS 2015/16 Kenya Integrated Household baseline survey.

We categorised the wall materials into three categories: temporary, semi-permanent and permanent housing. In our analysis, we consider the temporary housing class to be a deficit. This includes: no walls, cane/palm/trunk walls, grass/reed walls, mud/cow dung walls as at 2016.

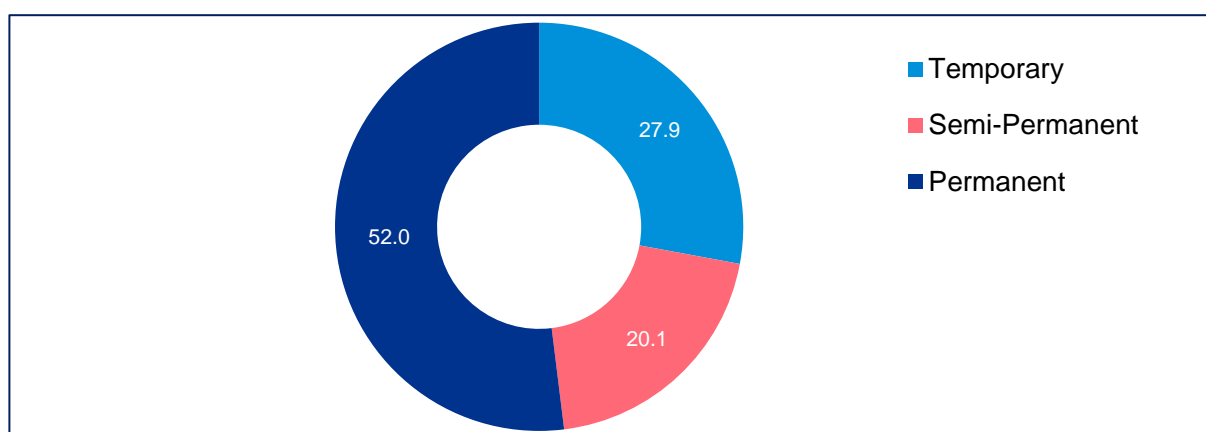
Table 22: Classification of housing types based on wall type

Classification of housing types based on wall type	
Temporary	No walls, cane/palm/trunk walls, grass/reed walls, mud/cow dung walls
Semi-Permanent	Bamboo with mud, stone with mud, uncovered adobe, plywood, cardboard, reused wood, corrugated iron sheets
Permanent	Cement, stone with lime, bricks, cement blocks, covered adobe, wood planks

Source: KNBS

Based on our analysis, 28% of Kenyan households can be categorised as temporarily housed. A further 20% are housed in semi-permanent households while 52% are properly housed as shown in the figure below.

Figure 32: Distribution of housing by permanency of walling materials (%) as at 2016

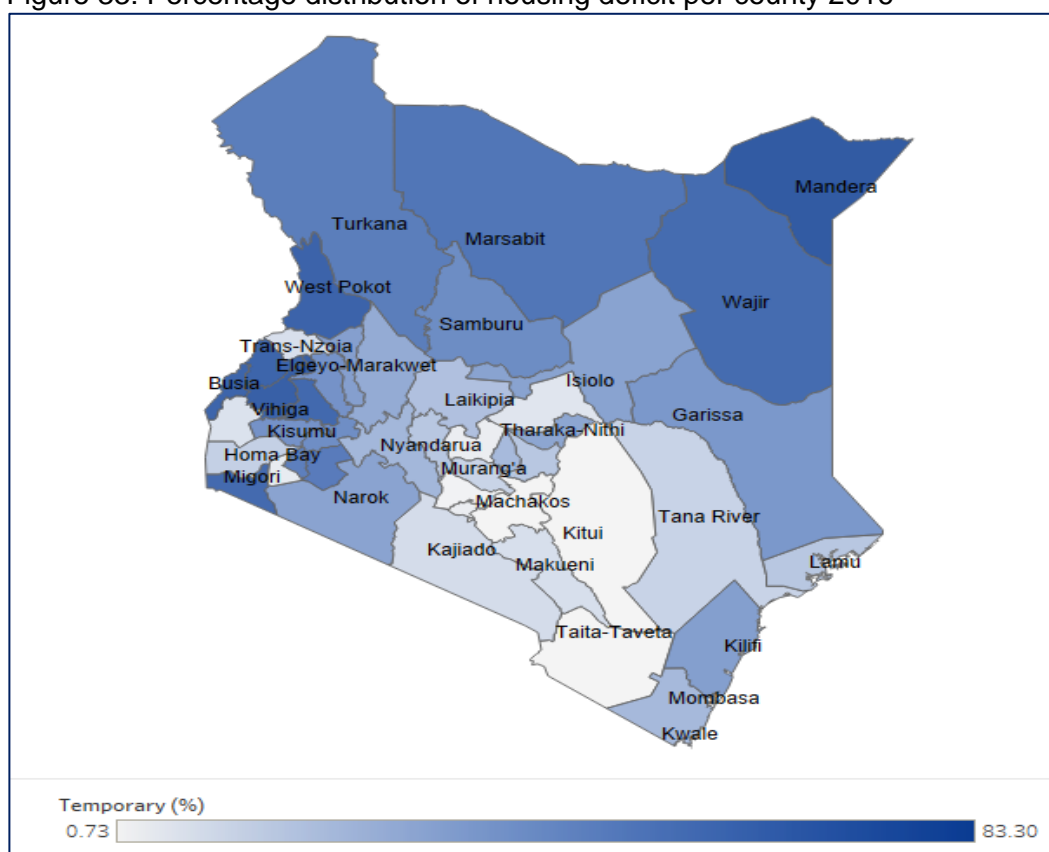


Source: KIHBS 2015/16 Kenya Integrated Household Budget Survey

In the heat-map below, the darker a county is, the higher the incidence of temporary housing. Mandera, West Pokot, Vihiga, Busia and Migori have the highest incidences of temporary

housing while Machakos, Nairobi, Kitui, Taita Taveta have lower incidences of temporary housing.

Figure 33: Percentage distribution of housing deficit per county 2016



Source: KIHBS 2015/16 Kenya Integrated Household Budget Survey

Table 23: Distribution of temporary, semi-permanent and permanent housing per county by type of walling material used.

County	Temporary (no. of households - 000)	Semi-Permanent (no. of households - 000)	Permanent (no. of households - 000)	Total no. of Households
Baringo	51	35	67	152
Bomet	108	3	68	179
Bungoma	243	10	68	321
Busia	134	2	40	177
Elgeyo-Marakwet	39	45	15	99
Embu	33	19	112	164
Garissa	34	18	26	78
Homa Bay	36	143	45	224
Isiolo	13	5	15	34
Kajiado	27	102	122	250
Kakamega	313	6	74	392
Kericho	104	28	80	211
Kiambu	9	159	432	600
Kilifi	130	27	169	326

County	Temporary (no. of households - 000)	Semi-Permanent (no. of households - 000)	Permanent (no. of households - 000)	Total no. of Households
Kirinyaga	52	5	142	198
Kisii	12	173	105	291
Kisumu	132	19	133	284
Kitui	2	81	154	236
Kwale	46	51	77	174
Laikipia	31	45	59	135
Lamu	6	10	14	30
Machakos	2	40	285	328
Makueni	22	13	198	233
Mandera	92	0	18	111
Marsabit	40	2	20	62
Meru	27	14	352	393
Migori	167	17	49	233
Mombasa	3	34	360	397
Murang'a	46	93	184	323
Nairobi	51	453	999	1,503
Nakuru	159	85	334	578
Nandi	147	4	50	202
Narok	83	58	82	223
Nyamira	103	3	73	179
Nyandarua	38	13	140	191
Nyeri	10	11	251	271
Samburu	31	4	27	61
Siaya	20	147	78	246
Taita-Taveta	1	46	55	102
Tana River	8	34	14	56
Tharaka-Nithi	39	6	60	104
Trans-Nzoia	20	108	83	210
Turkana	144	72	29	246
Uasin Gishu	126	34	110	270
Vihiga	111	2	31	144
Wajir	49	9	11	69
West Pokot	92	9	18	119
Total	3,186	2,298	5,928	11,412

Source: KPMG Analysis

Based on the foregoing assumption, as at 2016 we estimate that approximately **3.2 Million** households lived in houses with temporary walling material.

The counties with the highest percentage of temporary housing included Mandera (83.3%), Kakamega (79.8%), West Pokot (77.2%), Vihiga (76.8%), Busia (75.9%) and Bungoma (75.7%). Whilst the counties with the lowest percentage of temporary housing included

Machakos (0.7%), Mombasa (0.8%), Kitui (0.9%), Taita-Taveta (0.9%), Kiambu (1.5%) and Nairobi (3.4%).

Step 2: Project the number of total households in Kenya in 5, 10 and 20 years and the emerging household need over the same period

We adopted a household based approach to aggregate housing demand which is premised on the household trends based on the latest three household surveys. These include the 2009 census, 2012/2013 household survey and the 2015/16 Kenya Integrated Household Baseline Survey (KIHBS).

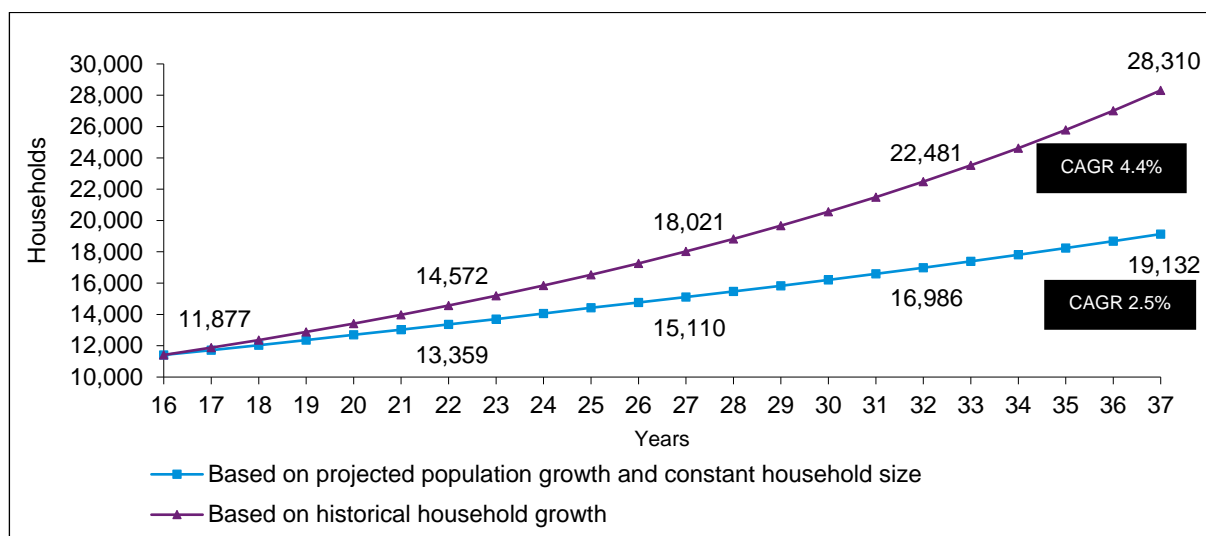
In projecting total number of households, we have taken account of the long-term nature of this projection over the 5, 10 and 20 year periods. Our assumptions are based on past trends adjusted by how the future trend is likely to deviate from the past. We recommend that the projections be updated to take into account any changes in policy and in particular the proposed number of units to be supplied, Housing Bill 2017, the prevailing circumstances and findings from the 2019 census.

In our approach, we assume that household growth is not necessarily equal to population growth, although they are correlated. Growth of households is driven by the increase and changes in composition of the adult population and not the increase in the overall population. The household size, ratio of households to population, varies by generation, culture, age, race, level of education and nativity. Thus, as the make-up of the adult population changes so does the population's average household size.

Consequently, KPMG's recommended household projection approach differs from the population based projection approach. KPMG's findings indicate that average national household sizes will decline from 4.0 in 2016 to 2.7 in 2037 resulting in a higher rate of growth in the number of households at a CAGR of 4.4%.

We compared projecting the number of households based on population growth (whilst holding household size constant) and household growth (which implicitly reduces household size overtime).

Figure 34: Comparison of projection methodology using population growth and household growth

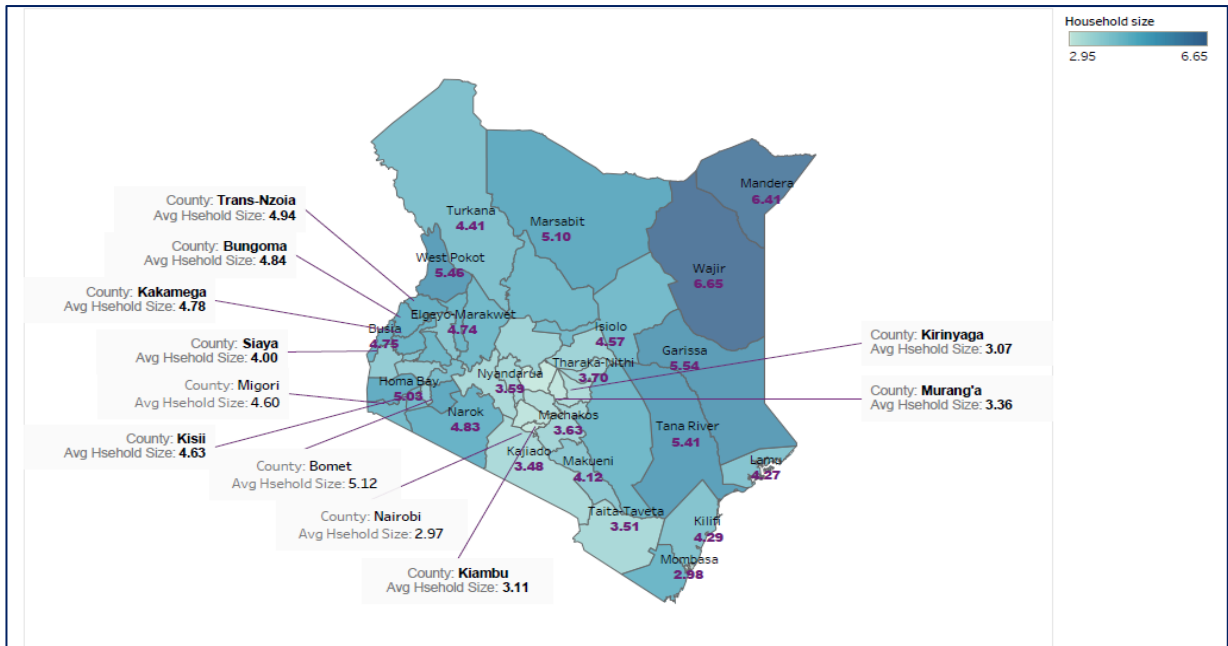


Source: KPMG projections and analysis

Note: In this report, we analyse the methodology based on historical household growth. Comparative tables based on the population projection methodology is presented in the appendix.

The critical assumptions in projecting emerging housing need are positive population growth and a declining national average household size. The average household size is projected to decline from the current four persons per household to three persons in 2037. We based this reduction in average household size to urbanisation. We observed that counties with major cities have on average a smaller household size compared to predominantly rural counties as shown in the heat-map below.

Figure 35: Household sizes per county



Source: KPMG analysis

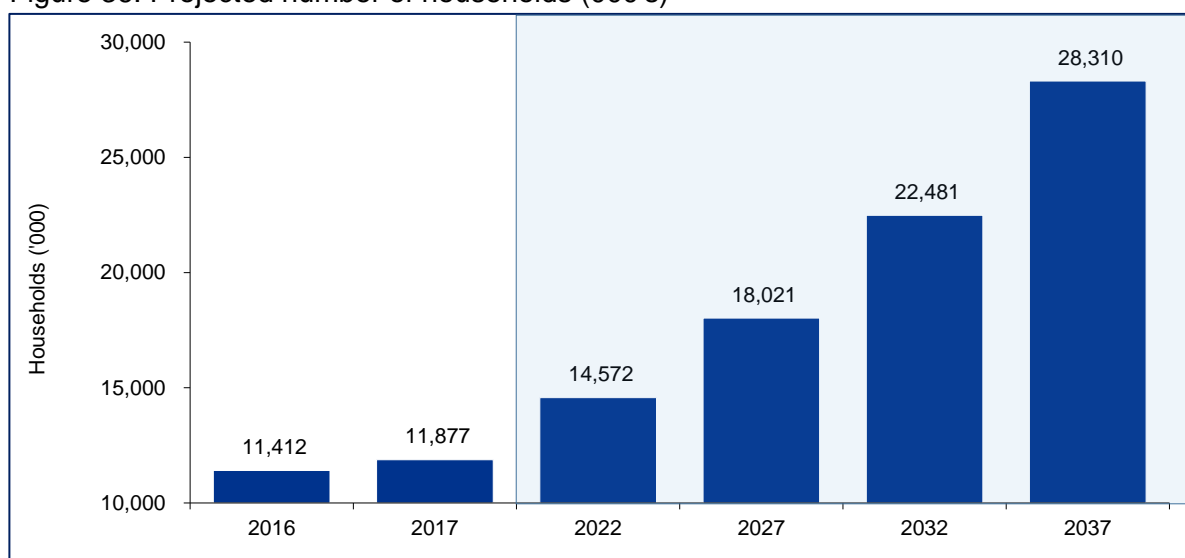
In 2016, the smallest household sizes were reported in Nyeri (2.95), Nairobi (2.97) and Mombasa (2.98) while the largest household sizes were reported in Garissa (5.54), Mandera (6.41) and Wajir (6.65).

Based on the rate of urbanisation and the correlation with household sizes observed in 2016, it is reasonable to conclude that the average national household size will decline, as a result of urbanisation, impacting on the number of households and consequently the number of houses required.

Using 2015/16 as the base year, we have projected the rate of growth of households based on the historical trends using the 2009 housing census, the 2012/13 household survey and the 2015/16 integrated household survey. This emerging housing need is incremental to the 2016 current housing deficit based on the Kenya Integrated Household Budget Survey of 2015/16 ("KIHBS").

The figure below provides an overview of the number of projected households per year to 2037.

Figure 36: Projected number of households (000's)



Source: KPMG Analysis

The table below provides an overview of the projected number of households in Kenya from 2017 to 2037 at county level.

Table 24: Projected number of households in Kenya 2017 – 2037 (000)

	2015/16	2017f	2022f	2027f	2032f	2037f
Baringo	152	159	200	250	314	394
Bomet	179	185	218	257	302	356
Bungoma	321	329	371	419	473	535
Busia	177	181	199	220	242	268
Elgeyo-Marakwet	99	103	122	145	173	206
Embu	164	169	198	232	271	317
Garissa	78	75	64	54	46	39
Homa Bay	224	227	240	255	271	287
Isiolo	34	34	36	39	41	43
Kajiado	250	263	342	444	576	748
Kakamega	392	397	426	457	490	525
Kericho	211	219	267	325	396	483
Kiambu	600	621	741	883	1,052	1,254
Kilifi	326	350	496	704	999	1,417
Kirinyaga	198	205	245	293	351	419
Kisii	291	298	337	381	431	487
Kisumu	284	293	344	405	475	558
Kitui	236	241	266	293	324	357
Kwale	174	183	236	304	391	504
Laikipia	135	140	170	206	250	303

	2015/16	2017f	2022f	2027f	2032f	2037f
Baringo	152	159	200	250	314	394
Bomet	179	185	218	257	302	356
Bungoma	321	329	371	419	473	535
Busia	177	181	199	220	242	268
Elgeyo-Marakwet	99	103	122	145	173	206
Embu	164	169	198	232	271	317
Garissa	78	79	83	87	91	96
Homa Bay	224	227	240	255	271	287
Isiolo	34	34	36	39	41	43
Kajiado	250	263	342	444	576	748
Kakamega	392	397	426	457	490	525
Kericho	211	219	267	325	396	483
Kiambu	600	621	741	883	1,052	1,254
Kilifi	326	350	496	704	999	1,417
Kirinyaga	198	205	245	293	351	419
Kisii	291	298	337	381	431	487
Kisumu	284	293	344	405	475	558
Kitui	236	241	266	293	324	357
Kwale	174	183	236	304	391	504
Laikipia	135	140	170	206	250	303
Lamu	30	31	39	48	60	74
Machakos	328	338	394	460	536	625
Makueni	233	241	282	331	388	455
Mandera	111	112	118	124	130	137
Marsabit	62	63	67	71	75	80
Meru	393	405	469	544	630	731
Migori	233	242	290	349	419	504
Mombasa	397	420	555	733	969	1,280
Murang'A	323	334	395	466	551	651
Nairobi	1,503	1,597	2,159	2,920	3,948	5,340
Nakuru	578	607	776	992	1,268	1,621
Nandi	202	210	255	309	375	455
Narok	223	232	283	344	419	510
Nyamira	179	187	234	292	365	456
Nyandarua	191	199	243	298	365	447
Nyeri	271	283	349	431	532	657
Samburu	61	63	76	91	109	130

	2015/16	2017f	2022f	2027f	2032f	2037f
Siaya	246	254	295	343	399	464
Taita-Taveta	102	107	139	180	233	301
Tana River	56	57	65	73	82	92
Tharaka-Nithi	107	110	126	143	164	187
Trans-Nzoia	210	216	252	292	340	395
Turkana	246	272	445	729	1,195	1,959
Uasin Gishu	270	281	346	425	522	642
Vihiga	144	147	164	184	205	229
Wajir	69	70	73	77	81	85
West Pokot	119	123	146	173	205	243
National total	11,412	11,877	14,572	18,021	22,481	28,310

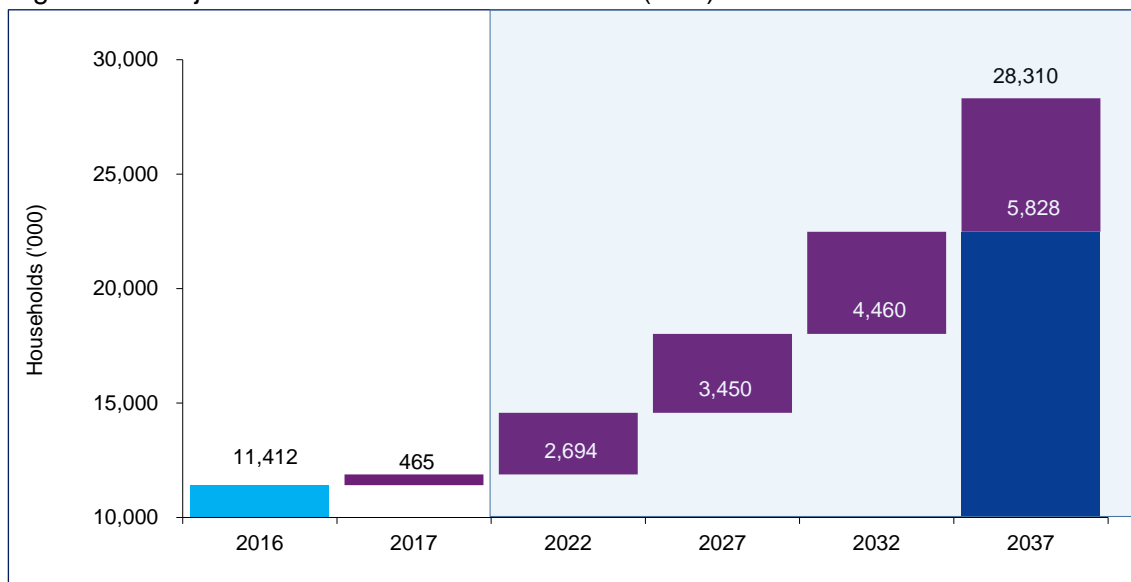
Source: KPMG Analysis

We have projected the emerging housing need as the annual incremental growth in households.

We project that the number of households will grow at a compounded annual growth rate of 4.5% from 11.4 million to 28.3 million households. In the period 2016 to 2022 we project that 3.2 million households will be formed, 6.6 million by 2027, 11.1 million by 2032 and 16.9 million by 2037. In other words, the households in Kenya will more than double from the estimated 11.4 million to 28.3 million.

Below is an overview of the emerging households in the country from 2015/16 to 2037.

Figure 37: Projected number of new households ('000)



Source: KPMG Analysis

Step 3: Project the housing supply in Kenya in 5, 10 and 20 years

Housing supply is determined by economic and social factors such as disposable income levels, house prices, government policy on land and housing, tax levels, interest rates, exchange rates, actual housing demand and societal norms such as first age of marriage.

The biggest challenge to estimating the historical housing supply is a lack of reliable data. Interviews with various stakeholders including KNBS, the national construction authority, mortgage department heads at commercial banks, developers and other private sector financiers indicate that this data is not collected. Where collected, the data is not reliable. Therefore, it is difficult to estimate the precise supply of housing units in future periods. In this section we try to compute a supply range that's reasonable. As will be seen in this section, the estimated number of housing supply does not significantly reduce the housing demand.

Some of the specific data challenges include:

- The data collection methodology on the housing approvals does not clearly distinguish whether the unit is for a single use or multi-storeyed building making it difficult to establish the actual number of houses that those approvals represent.
- Counties are not keeping accurate information on the number of approvals. According to the KNBS, even Nairobi, which is considered the closest to good data collection, have known gaps in data on approvals.
- Different data sources provided significantly different data points making it difficult to corroborate the data. For example, the data on approvals for Nairobi County differed significantly from the data provided by KNBS. In this case, we chose to work with the data obtained from Nairobi County.
- The information on the number of completed buildings is a fraction of the number of the approvals obtained. We relied on approvals where we could get them.
- Some counties did not respond to our request for data. We used our best judgement and market knowledge to estimate the supply data.

In our approach, we have attempted to determine the supply of housing units using the following:

- A. Determining the housing supply based on the electricity connections
- B. Determining the housing supply based on the number of approvals per county.

A. Determining the housing supply based on electricity connections

In determining the housing supply based on the number of new domestic connections, we collected data on the total number of connections in the past five years 2013 – 2017.

At national level, the number of customers connected to electricity increased at approximately 30% per annum from 2.1 million in 2012/13 to 5.8 million in 2016/2017¹⁵. This increase has been mainly driven by implementation of various subsidy programmes including the Last Mile Connectivity Project and the Rural Electrification Programme (REP) targeting informal settlements and low income areas. KPLC management expects the annual connections to be about 200,000 annually without subsidised programmes.

¹⁵ Kenya Power and Lighting Company 2017 Annual Report

The table below provides an overview of the number of electricity connections at national level over the past five years.

Table 25: Number of electricity connections (2012 to 2017)

Electricity connections					
	2012/13	2013/14	2014/15	2015/16	2016/17
Domestic KPLC connection	1,691,482	2,045,288	2,704,792	3,704,032	4,685,877
Rural Electrification Programme	367,858	436,568	601,142	861,875	1,153,988
Total	2,059,340	2,481,856	3,305,934	4,565,907	5,839,865

Source: Kenya Power and Lighting Company 2017 Annual Report

Based on the table above, the number of new connections was 3.8 million between 2013 and 2017. However, this new connections are mostly to existing households not new households. Therefore, new connections are not a good proxy for housing supply in the past five years.

B. Determining the housing supply based on the number of approvals per county

To determine the housing supply in the country, KPMG sort to get primary data from the counties where each county CEC was asked to provide information on the number of approvals for housing for the past five years.

The following table provides a summary of the data collected from the counties on the number of approvals for 2013 – 2017. We did not receive responses from 16 counties being Baringo, Elgeyo-Marakwet, Embu, Garissa, Homa Bay, Isiolo, Kilifi, Kisii, Kisumu, Lamu, Machakos, Mandera, Marsabit, Narok, Tharaka-Nithi and West Pokot. The approvals obtained are as presented in the table below:

Table 26: Number of approvals per county (2013 – 2017)

	2013	2014	2015	2016	2017	Total
Bomet	20	22	26	22	34	124
Bungoma	-	-	-	-	1	1
Busia	-	64	108	49	60	281
Kajiado	-	-	998	790	715	2,503
Kakamega	-	257	865	783	585	2,490
Kericho	23	53	201	205	135	617
Kiambu	-	-	-	262	313	575
Kirinyaga	-	173	179	165	182	699
Kitui	-	104	108	96	52	360
Kwale	-	-	-	110	93	203
Laikipia	-	35	148	141	54	378
Makueni	121	182	266	95	128	792
Meru	-	312	501	508	324	1,645
Migori	107	30	75	48	-	260
Mombasa	-	-	1,365	1,257	1,046	3,668
Murang'a	162	191	125	99	90	667
Nairobi	2,170	2,072	2,025	1,711	619	8,597
Nakuru	2,150	1,750	2,560	2,200	1,668	10,328
Nandi	56	56	53	87	80	332
Nyamira	32	66	52	95	78	323
Nyandarau	108	163	108	172	195	746
Nyeri	223	335	357	406	406	1,727
Samburu	-	-	-	-	14	14
Siaya	61	95	195	320	397	1,068
Taita-Taveta	24	35	39	53	59	210
Tana River	13	17	-	-	-	30
Trans-Nzoia	163	595	393	451	24	1,626
Turkana	135	270	364	258	500	1,527
Uasin Gishu	754	855	714	614	556	3,493
Vihiga	65	56	53	76	52	302

West Pokot	12	6	9	28	19	74
Total	6,399	7,794	11,887	11,101	8,479	45,660

Source: KPMG survey of County Executives

We applied our professional judgement and market knowledge to estimate the number of approvals for the missing counties for 2017. Furthermore, we estimated that each approval represents 4 housing units on average in 2017. Finally, we projected the supply of housing units to increase by 2.5% annually in the period 2017 to 2037.

We estimated that the supply of housing was about 49,926 in 2017. This is projected to increase to 81,809 in 2037. The following table provides a summary of the projected housing supply in the period 2017 – 2037.

Table 27: Projected housing supply (2017 – 2037)

County	2017	2022	2027	2032	2037
Baringo	246	278	315	356	403
Bomet	139	158	178	202	228
Bungoma	205	232	262	297	336
Busia	246	278	315	356	403
Elgeyo-Marakwet	246	278	315	356	403
Embu	246	278	315	356	403
Garissa	41	46	52	59	67
Homa Bay	246	278	315	356	403
Isiolo	62	70	79	89	101
Kajiado	2,932	3,317	3,753	4,246	4,804
Kakamega	2,399	2,714	3,070	3,474	3,930
Kericho	554	626	709	802	907
Kiambu	1,283	1,452	1,643	1,859	2,103
Kilifi	221	250	283	321	363
Kirinyaga	746	844	955	1,081	1,223
Kisii	480	543	614	695	786
Kisumu	4,289	4,852	5,490	6,211	7,027
Kitui	213	241	273	309	349
Kwale	381	431	488	552	625
Laikipia	221	250	283	321	363
Lamu	221	250	283	321	363
Machakos	221	250	283	321	363
Makueni	525	594	672	760	860
Mandera	213	241	273	309	349
Marsabit	213	241	273	309	349
Meru	1,328	1,503	1,700	1,924	2,177
Migori	1,328	1,503	1,700	1,924	2,177
Mombasa	4,289	4,852	5,490	6,211	7,027
Murang'A	369	417	472	534	605
Nairobi	8,200	9,278	10,497	11,876	13,437

County	2017	2022	2027	2032	2037
Nakuru	6,839	7,737	8,754	9,905	11,206
Nandi	328	371	420	475	537
Narok	328	371	420	475	537
Nyamira	320	362	409	463	524
Nyandarua	800	905	1,023	1,158	1,310
Nyeri	1,665	1,883	2,131	2,411	2,728
Samburu	57	65	73	83	94
Siaya	1,628	1,842	2,084	2,357	2,667
Taita-Taveta	242	274	310	350	396
Tana River	242	274	310	350	396
Tharaka-Nithi	242	274	310	350	396
Trans-Nzoia	98	111	126	143	161
Turkana	2,050	2,319	2,624	2,969	3,359
Uasin Gishu	2,280	2,579	2,918	3,302	3,735
Vihiga	213	241	273	309	349
Wajir	213	241	273	309	349
West Pokot	78	88	100	113	128
Total	49,926	56,486	63,909	72,307	81,809

Source: KPMG analysis and projections

Step 4: Determine the proportion of urban households to rural households in each county in 5, 10 and 20 years

The project scope is limited to determining housing demand in urban areas, hence we have based our calculations on the current urbanisation rate.

To arrive at the proportion of urban households for each county for the next 5, 10, 15 and 20 years. We made the assumption that the growth of the urban population growth rate will remain constant after 2017 based on CAGR calculated from World Bank's data. We used the below data set and formulae.

Data set

- 2009 census data for urban rural population
- World Bank's urban population growth rate for 2009 to 2017

Calculations

- To extrapolate urbanisation growth rate for years 2017 – 2037, we calculated CAGR for the period 2009 – 2017 and used it as the constant to grow World Bank's growth rate until 2037.

Table 28: Urban population growth rate (2009 - 2017)

2009	2010	2011	2012	2013	2014	2015	2016	2017
4.41	4.39	4.38	4.36	4.34	4.30	4.27	4.24	4.19

Source: World Bank

CAGR (Compound Annual Growth Rate) = (End Value/Start Value) ^ (1/Years)-1

CAGR (2009 – 2017) = (4.19%/4.41)% ^ (2017-2009) – 1

CAGR = -0.006232717

b) Based on the above calculated GARG (constant), we extrapolated the 2017 population growth rate for the years 2022, 2027, 2032 and 2037.

Growth rate will be = (2017 rate)*(1+ CAGR) ^ (number of years)

2022 growth rate = (4.19%)*(1+CAGR) ^ (2022-2017) = 4.064889814

2027 growth rate = (4.19%)*(1+CAGR) ^ (2027-2017) = 3.939782537

2032 growth rate = (4.19%)*(1+CAGR) ^ (2032-2017) = 3.818525753

2037 growth rate = (4.19%)*(1+CAGR) ^ (2037-2017) = 3.701000954

Table 29: Urban population growth rate for 2009 – 2037

2009	2010	2011	2012	2013	2014	2015	2016	2017	2022	2027	2032	2037
4.41	4.39	4.38	4.36	4.34	4.30	4.27	4.24	4.19	4.06	3.94	3.82	3.70

Source: KPMG analysis

c) Using the above rates, we calculated the proportion of urban households for all the 47 counties, using 2009 urban population census.

Working with Baringo County as an example, the urban population according to the 2009 census was 11.40%. To calculate the urban population, we used the extrapolated World Bank population growth in the above step to determine the population for Baringo County for 2017, 2022, 2027, 2032 and 2037.

Below are the calculations used to come up with urban population rates

Rate = (census base rate 2009)*(1+ 2017 growth rate) ^ (number of years)

2017 = (11.40%)*(1+4.19%) ^ (2017-2009) = 16%

2022 = (11.40%)*(1+4.06%) ^ (2022-2009) = 20%

2027 = (11.40%)*(1+3.94%) ^ (2027-2009) = 24%

2032 = (11.40%)*(1+3.84%) ^ (2032-2009) = 29%

2037 = (11.40%)*(1+3.7%) ^ (2037-2009) = 35%

In general, counties will become more urbanised in the next 20 years as shown in the table below.

Table 30: Proportion of urban households to total households (2017 – 2037)

County	2017	2022	2027	2032	2037
Baringo	16%	20%	24%	29%	35%
Bomet	16%	19%	24%	28%	34%
Bungoma	22%	26%	32%	39%	47%
Busia	16%	19%	23%	28%	34%
Elgeyo-Marakwet	20%	24%	29%	36%	43%

County	2017	2022	2027	2032	2037
Embu	22%	27%	33%	40%	48%
Garissa	32%	39%	47%	57%	68%
Homa Bay	20%	24%	30%	36%	43%
Isiolo	61%	75%	91%	100%	100%
Kajiado	58%	70%	86%	100%	100%
Kakamega	20%	24%	29%	35%	42%
Kericho	54%	66%	80%	97%	100%
Kiambu	87%	100%	100%	100%	100%
Kilifi	35%	43%	53%	64%	77%
Kirinyaga	22%	27%	32%	39%	47%
Kisii	28%	34%	41%	50%	60%
Kisumu	73%	89%	100%	100%	100%
Kitui	19%	23%	28%	34%	41%
Kwale	25%	30%	37%	45%	54%
Laikipia	28%	34%	41%	50%	60%
Lamu	27%	33%	41%	49%	59%
Machakos	72%	88%	100%	100%	100%
Makueni	16%	20%	24%	29%	35%
Mandera	24%	30%	36%	44%	53%
Marsabit	31%	38%	46%	55%	67%
Meru	11%	13%	16%	19%	23%
Migori	47%	58%	70%	85%	100%
Mombasa	100%	100%	100%	100%	100%
Murang'a	20%	24%	29%	36%	43%
Nairobi	100%	100%	100%	100%	100%
Nakuru	63%	77%	94%	100%	100%
Nandi	19%	23%	28%	34%	41%
Narok	9%	11%	14%	17%	20%
Nyamira	18%	22%	27%	33%	39%
Nyandarua	27%	33%	40%	48%	58%
Nyeri	34%	41%	50%	60%	73%
Samburu	23%	29%	35%	42%	51%
Siaya	15%	18%	22%	27%	32%
Taita-Taveta	24%	29%	36%	43%	52%
Tana River	21%	26%	31%	38%	45%
Tharaka-Nithi	31%	38%	46%	55%	67%
Trans-Nzoia	27%	34%	41%	49%	59%
Turkana	17%	20%	25%	30%	36%
Uasin Gishu	54%	66%	80%	97%	100%
Vihiga	44%	54%	65%	79%	95%
Wajir	19%	23%	29%	35%	42%
West Pokot	11%	14%	17%	20%	25%

Source: KPMG survey

Step 5: Based on KPMG survey results, determine the distribution of urban households per income band in each county

To determine this, we needed two sets of data

1. Projected households for urban population for 2017 to 2037
2. Distribution of households per income band

The projected households for urban population was arrived at by multiplying the total household population with urban population rates in step 4 above, while the distribution of households per income band was arrived at from the household survey issued out by KPMG.

Calculations

a) We got the projected urban population for 2017 to 2037 as seen below

Table 31: Projected urban population (2017-2037)

County	2017	2022	2027	2032	2037
Baringo	25.41	39.00	59.50	90.25	136.09
Bomet	29.29	42.20	60.44	86.05	121.81
Bungoma	70.98	98.05	134.63	183.76	249.38
Busia	28.08	37.91	50.86	67.84	89.98
Elgeyo-Marakwet	20.26	29.50	42.71	61.47	87.97
Embu	37.71	53.96	76.76	108.54	152.60
Garissa	24.95	32.08	41.01	52.10	65.82
Homa Bay	45.11	58.54	75.50	96.82	123.44
Isiolo	21.02	27.27	35.15	41.00	43.47
Kajiado	151.71	240.99	380.47	576.44	748.40
Kakamega	77.99	102.28	133.32	172.75	222.58
Kericho	117.81	175.52	259.92	382.65	482.70
Kiambu	541.70	740.72	882.89	1,052.34	1,254.32
Kilifi	123.96	215.19	371.27	636.80	1,085.98
Kirinyaga	44.57	65.19	94.76	136.94	196.77
Kisii	82.76	114.48	157.40	215.15	292.39
Kisumu	212.91	305.96	404.62	475.26	558.23
Kitui	45.88	61.96	83.18	111.01	147.30
Kwale	45.40	71.57	112.12	174.61	270.38
Laikipia	38.93	57.74	85.11	124.73	181.73
Lamu	8.56	12.99	19.60	29.39	43.83
Machakos	244.59	348.97	459.96	536.38	625.49
Makueni	38.43	55.12	78.59	111.39	156.97
Mandera	27.34	35.15	44.93	57.08	72.11
Marsabit	19.35	25.16	32.51	41.76	53.35
Meru	43.68	61.94	87.31	122.33	170.43
Migori	113.82	167.30	244.42	354.99	503.59
Mombasa	419.77	554.75	733.13	968.88	1,280.44
Murang'a	65.99	95.40	137.09	195.82	278.13
Nairobi	1,596.52	2,159.03	2,919.72	3,948.42	5,339.57
Nakuru	383.71	600.14	932.94	1,268.31	1,621.37
Nandi	40.02	59.41	87.67	128.60	187.56

County	2017	2022	2027	2032	2037
Narok	21.46	31.97	47.35	69.71	102.04
Nyamira	33.83	51.73	78.60	118.72	178.31
Nyandarua	53.52	80.16	119.34	176.62	259.91
Nyeri	95.08	143.64	215.69	321.98	477.90
Samburu	14.80	21.70	31.62	45.80	65.97
Siaya	37.67	53.61	75.85	106.67	149.16
Taita-Taveta	25.74	40.75	64.13	100.34	156.08
Tana River	11.97	16.50	22.60	30.77	41.65
Tharaka-Nithi	33.88	47.35	65.79	90.85	124.75
Trans-Nzoia	59.44	84.54	119.49	167.90	234.57
Turkana	44.90	90.04	179.44	355.50	700.27
Uasin Gishu	151.81	228.28	341.17	506.89	641.99
Vihiga	64.58	88.25	119.86	161.84	217.27
Wajir	13.38	17.21	21.99	27.94	35.29
West Pokot	13.98	20.27	29.22	41.88	59.67

Source: KPMG survey

b) Distribution of households per income band

Counties	0 - 4999	5,000 - 9,999	10,000 - 14,999	15,000 - 19,999	20,000 - 24,999	25,000 - 29,999	30,000 - 49,999	50,000 - 99,999
Baringo	23.33%	20.00%	10.00%	20.00%	0.00%	3.33%	13.33%	10.00%
Bomet	0.00%	0.00%	13.79%	13.79%	20.69%	3.45%	20.69%	27.59%
Bungoma	2.27%	6.82%	9.09%	9.09%	18.18%	13.64%	22.73%	18.18%
Busia	44.44%	22.22%	11.11%	3.70%	3.70%	0.00%	7.41%	7.41%
Elgeyo-Marakwet	15.15%	18.18%	15.15%	9.09%	24.24%	0.00%	9.09%	9.09%
Embu	0.00%	3.13%	18.75%	12.50%	9.38%	9.38%	18.75%	28.13%
Garissa	2.78%	8.33%	19.44%	19.44%	22.22%	2.78%	11.11%	13.89%
Homa Bay	9.68%	19.35%	3.23%	29.03%	16.13%	0.00%	9.68%	12.90%
Isiolo	3.03%	12.12%	15.15%	12.12%	6.06%	9.09%	27.27%	15.15%
Kajiado	0.00%	12.90%	12.90%	12.90%	25.81%	0.00%	25.81%	9.68%
Kakamega	2.33%	0.00%	13.95%	13.95%	11.63%	2.33%	23.26%	32.56%
Kericho	0.00%	3.70%	18.52%	14.81%	3.70%	7.41%	29.63%	22.22%
Kiambu	6.06%	16.67%	7.58%	21.21%	13.64%	1.52%	18.18%	15.15%
Kilifi	2.86%	17.14%	2.86%	8.57%	2.86%	5.71%	20.00%	40.00%
Kirinyaga	0.00%	21.05%	21.05%	7.89%	7.89%	7.89%	18.42%	15.79%
Kisii	0.00%	6.67%	6.67%	6.67%	20.00%	0.00%	33.33%	26.67%
Kisumu	4.35%	10.87%	6.52%	13.04%	23.91%	4.35%	28.26%	8.70%
Kitui	3.85%	3.85%	7.69%	26.92%	23.08%	7.69%	19.23%	7.69%
Kwale	0.00%	3.57%	10.71%	7.14%	7.14%	10.71%	25.00%	35.71%
Laikipia	3.13%	21.88%	15.63%	9.38%	15.63%	3.13%	25.00%	6.25%
Lamu	0.00%	0.00%	10.00%	20.00%	20.00%	0.00%	10.00%	40.00%
Machakos	0.00%	9.09%	9.09%	6.06%	21.21%	6.06%	36.36%	12.12%
Makueni	0.00%	3.85%	7.69%	0.00%	15.38%	7.69%	23.08%	42.31%
Mandera	19.51%	12.20%	4.88%	17.07%	9.76%	12.20%	14.63%	9.76%
Marsabit	3.23%	0.00%	16.13%	12.90%	3.23%	9.68%	25.81%	29.03%

Counties	0 - 4999	5,000 - 9,999	10,000 - 14,999	15,000 - 19,999	20,000 - 24,999	25,000 - 29,999	30,000 - 49,999	50,000 - 99,999
Meru	0.00%	11.36%	18.18%	15.91%	6.82%	0.00%	29.55%	18.18%
Migori	3.45%	17.24%	13.79%	3.45%	10.34%	0.00%	27.59%	24.14%
Mombasa	0.00%	2.56%	5.13%	2.56%	20.51%	5.13%	41.03%	23.08%
Murang'a	8.33%	19.44%	13.89%	19.44%	8.33%	0.00%	16.67%	13.89%
Nairobi	2.48%	5.59%	7.45%	9.32%	13.04%	5.59%	29.19%	27.33%
Nakuru	12.50%	15.63%	15.63%	10.94%	6.25%	7.81%	21.88%	9.38%
Nandi	3.70%	3.70%	3.70%	14.81%	37.04%	7.41%	7.41%	22.22%
Narok	0.00%	8.82%	8.82%	14.71%	26.47%	2.94%	20.59%	17.65%
Nyamira	4.17%	0.00%	12.50%	12.50%	29.17%	0.00%	8.33%	33.33%
Nyandarua	2.33%	20.93%	11.63%	6.98%	9.30%	2.33%	20.93%	25.58%
Nyeri	22.86%	14.29%	17.14%	11.43%	17.14%	0.00%	14.29%	2.86%
Samburu	7.14%	7.14%	21.43%	3.57%	14.29%	3.57%	25.00%	17.86%
Siaya	0.00%	0.00%	8.33%	8.33%	25.00%	12.50%	25.00%	20.83%
Taita-Taveta	6.45%	19.35%	9.68%	3.23%	16.13%	12.90%	25.81%	6.45%
Tana River	0.00%	0.00%	8.33%	4.17%	4.17%	16.67%	37.50%	29.17%
Tharaka-Nithi	0.00%	3.23%	16.13%	0.00%	25.81%	6.45%	25.81%	22.58%
Trans Nzoia	14.71%	26.47%	14.71%	14.71%	8.82%	0.00%	11.76%	8.82%
Turkana	34.38%	9.38%	0.00%	3.13%	6.25%	15.63%	9.38%	21.88%
Uasin Gishu	3.23%	12.90%	22.58%	16.13%	19.35%	0.00%	19.35%	6.45%
Vihiga	6.25%	9.38%	25.00%	12.50%	18.75%	6.25%	15.63%	6.25%
Wajir	3.23%	9.68%	12.90%	6.45%	0.00%	12.90%	32.26%	22.58%
West Pokot	12.90%	16.13%	12.90%	16.13%	6.45%	0.00%	16.13%	19.35%

Source: KPMG survey

c) We multiplied the income band in (b) above with urban household projections in (a) above to determine the number of urban households per income band as seen in the example of Garissa county below.

The number of urban households per income band Garissa County

Income Band	2017	2022	2027	2032	2037
Garissa					
0 - 4,999	693	891	1,139	1,447	1,828
5,000 - 9,999	2,079	2,674	3,417	4,342	5,485
10,000 - 14,999	4,852	6,239	7,973	10,130	12,798
15,000 - 19,999	4,852	6,239	7,973	10,130	12,798
20,000 - 24,999	5,545	7,130	9,112	11,578	14,626
25,000 - 29,999	693	891	1,139	1,447	1,828
30,000 - 49,999	2,772	3,565	4,556	5,789	7,313
50,000 - 99,999	3,465	4,456	5,695	7,236	9,141
Total	24,951	32,084	41,006	52,100	65,816

Source: KPMG survey

The table below presents urban households per income band in each county.

Urban households will increase from the estimated 5.5 million in 2017 to 20 million in 2037 as shown in the table below.

Table 32: Proportion of urban households to total households (2017 – 2037)

Income band	Households				
	2017	2022	2027	2032	2037
Baringo					
0 - 4,999	5,929	9,101	13,884	21,057	31,754
5,000 - 9,999	5,082	7,801	11,901	18,049	27,218
10,000 - 14,999	2,541	3,900	5,950	9,025	13,609
15,000 - 19,999	5,082	7,801	11,901	18,049	27,218
25,000 - 29,999	847	1,300	1,983	3,008	4,536
30,000 - 49,999	3,388	5,200	7,934	12,033	18,145
50,000 - 99,999	2,541	3,900	5,950	9,025	13,609
Total	25,411	39,004	59,505	90,246	136,088
Bomet					
10,000 - 14,999	4,040	5,821	8,337	11,869	16,802
15,000 - 19,999	4,040	5,821	8,337	11,869	16,802
20,000 - 24,999	6,060	8,732	12,505	17,804	25,203
25,000 - 29,999	1,010	1,455	2,084	2,967	4,201
30,000 - 49,999	6,060	8,732	12,505	17,804	25,203
50,000 - 99,999	8,080	11,642	16,674	23,739	33,604
Total	29,289	42,203	60,442	86,052	121,815
Bungoma					
0 - 4,999	1,543	2,132	2,927	3,995	5,421
5,000 - 9,999	4,629	6,395	8,780	11,984	16,264
10,000 - 14,999	6,172	8,526	11,707	15,979	21,685
15,000 - 19,999	6,172	8,526	11,707	15,979	21,685
20,000 - 24,999	12,344	17,053	23,413	31,958	43,370
25,000 - 29,999	9,258	12,789	17,560	23,968	32,528
30,000 - 49,999	15,431	21,316	29,267	39,947	54,213
50,000 - 99,999	12,344	17,053	23,413	31,958	43,370
100,000 +	3,086	4,263	5,853	7,989	10,843
Total	70,981	98,052	134,627	183,756	249,380
Busia					
0 - 4,999	12,480	16,848	22,606	30,153	39,990
5,000 - 9,999	6,240	8,424	11,303	15,077	19,995
10,000 - 14,999	3,120	4,212	5,651	7,538	9,998
15,000 - 19,999	1,040	1,404	1,884	2,513	3,333
20,000 - 24,999	1,040	1,404	1,884	2,513	3,333
30,000 - 49,999	2,080	2,808	3,768	5,026	6,665
50,000 - 99,999	2,080	2,808	3,768	5,026	6,665
Total	28,081	37,908	50,863	67,844	89,978

Income band	Households				
	2017	2022	2027	2032	2037
Elgeyo-Marakwet					
0 - 4,999	2,894	4,215	6,102	8,782	12,567
5,000 - 9,999	3,473	5,058	7,322	10,538	15,080
10,000 - 14,999	2,894	4,215	6,102	8,782	12,567
15,000 - 19,999	1,736	2,529	3,661	5,269	7,540
20,000 - 24,999	4,630	6,744	9,763	14,051	20,106
30,000 - 49,999	1,736	2,529	3,661	5,269	7,540
50,000 - 99,999	1,736	2,529	3,661	5,269	7,540
100,000 +	1,158	1,686	2,441	3,513	5,027
Total	20,257	29,505	42,714	61,474	87,966
Embu					
5,000 - 9,999	1,178	1,686	2,399	3,392	4,769
10,000 - 14,999	7,070	10,118	14,392	20,351	28,613
15,000 - 19,999	4,713	6,745	9,595	13,568	19,076
20,000 - 24,999	3,535	5,059	7,196	10,176	14,307
25,000 - 29,999	3,535	5,059	7,196	10,176	14,307
30,000 - 49,999	7,070	10,118	14,392	20,351	28,613
50,000 - 99,999	10,605	15,177	21,588	30,527	42,920
Total	37,707	53,963	76,759	108,541	152,604
Garissa					
0 - 4,999	693	891	1,139	1,447	1,828
5,000 - 9,999	2,079	2,674	3,417	4,342	5,485
10,000 - 14,999	4,852	6,239	7,973	10,130	12,798
15,000 - 19,999	4,852	6,239	7,973	10,130	12,798
20,000 - 24,999	5,545	7,130	9,112	11,578	14,626
25,000 - 29,999	693	891	1,139	1,447	1,828
30,000 - 49,999	2,772	3,565	4,556	5,789	7,313
50,000 - 99,999	3,465	4,456	5,695	7,236	9,141
Total	24,951	32,084	41,006	52,100	65,816
Homa Bay					
0 - 4,999	4,365	5,665	7,307	9,369	11,946
5,000 - 9,999	8,730	11,329	14,614	18,739	23,891
10,000 - 14,999	1,455	1,888	2,436	3,123	3,982
15,000 - 19,999	13,095	16,994	21,921	28,108	35,837
20,000 - 24,999	7,275	9,441	12,178	15,616	19,909
30,000 - 49,999	4,365	5,665	7,307	9,369	11,946
50,000 - 99,999	5,820	7,553	9,742	12,493	15,928
Total	45,105	58,536	75,504	96,818	123,438
Isiolo					
0 - 4,999	637	826	1,065	1,242	1,317
5,000 - 9,999	2,548	3,305	4,261	4,970	5,269

Income band	Households				
	2017	2022	2027	2032	2037
10,000 - 14,999	3,185	4,131	5,326	6,212	6,587
15,000 - 19,999	2,548	3,305	4,261	4,970	5,269
20,000 - 24,999	1,274	1,652	2,131	2,485	2,635
25,000 - 29,999	1,911	2,479	3,196	3,727	3,952
30,000 - 49,999	5,733	7,436	9,587	11,182	11,856
50,000 - 99,999	3,185	4,131	5,326	6,212	6,587
Total	21,019	27,266	35,154	41,001	43,471
Kajiado					
5,000 - 9,999	17,849	28,352	44,762	67,816	88,047
10,000 - 14,999	17,849	28,352	44,762	67,816	88,047
15,000 - 19,999	17,849	28,352	44,762	67,816	88,047
20,000 - 24,999	35,697	56,703	89,523	135,633	176,093
30,000 - 49,999	35,697	56,703	89,523	135,633	176,093
50,000 - 99,999	13,387	21,264	33,571	50,862	66,035
100,000 +	13,387	21,264	33,571	50,862	66,035
Total	151,714	240,989	380,473	576,438	748,397
Kakamega					
0 - 4,999	1,733	2,273	2,963	3,839	4,946
10,000 - 14,999	10,398	13,637	17,775	23,034	29,677
15,000 - 19,999	10,398	13,637	17,775	23,034	29,677
20,000 - 24,999	8,665	11,364	14,813	19,195	24,731
25,000 - 29,999	1,733	2,273	2,963	3,839	4,946
30,000 - 49,999	17,330	22,728	29,626	38,390	49,462
50,000 - 99,999	24,262	31,819	41,476	53,745	69,246
100,000 +	3,466	4,546	5,925	7,678	9,892
Total	77,986	102,275	133,315	172,753	222,577
Kericho					
5,000 - 9,999	4,363	6,501	9,627	14,172	17,878
10,000 - 14,999	21,816	32,504	48,134	70,860	89,389
15,000 - 19,999	17,453	26,003	38,507	56,688	71,511
20,000 - 24,999	4,363	6,501	9,627	14,172	17,878
25,000 - 29,999	8,726	13,001	19,254	28,344	35,756
30,000 - 49,999	34,905	52,006	77,014	113,377	143,023
50,000 - 99,999	26,179	39,004	57,761	85,032	107,267
Total	117,805	175,520	259,923	382,646	482,702
Kiambu					
0 - 4,999	31,865	43,572	51,935	61,902	73,784
5,000 - 9,999	87,628	119,822	142,820	170,232	202,905
10,000 - 14,999	39,831	54,465	64,918	77,378	92,230
15,000 - 19,999	111,527	152,501	181,771	216,659	258,243
20,000 - 24,999	71,696	98,036	116,853	139,281	166,013

Income band	Households				
	2017	2022	2027	2032	2037
25,000 - 29,999	7,966	10,893	12,984	15,476	18,446
30,000 - 49,999	95,595	130,715	155,804	185,707	221,351
50,000 - 99,999	79,662	108,929	129,836	154,756	184,459
100,000 +	15,932	21,786	25,967	30,951	36,892
Total	541,703	740,719	882,887	1,052,342	1,254,321
Kilifi					
0 - 4,999	3,443	5,977	10,313	17,689	30,166
5,000 - 9,999	20,661	35,864	61,878	106,133	180,997
10,000 - 14,999	3,443	5,977	10,313	17,689	30,166
15,000 - 19,999	10,330	17,932	30,939	53,066	90,498
20,000 - 24,999	3,443	5,977	10,313	17,689	30,166
25,000 - 29,999	6,887	11,955	20,626	35,378	60,332
30,000 - 49,999	24,104	41,842	72,191	123,821	211,163
50,000 - 99,999	48,208	83,683	144,383	247,643	422,326
100,000 +	3,443	5,977	10,313	17,689	30,166
Total	123,963	215,186	371,270	636,796	1,085,980
Kirinyaga					
5,000 - 9,999	9,384	13,724	19,950	28,830	41,425
10,000 - 14,999	9,384	13,724	19,950	28,830	41,425
15,000 - 19,999	3,519	5,147	7,481	10,811	15,534
20,000 - 24,999	3,519	5,147	7,481	10,811	15,534
25,000 - 29,999	3,519	5,147	7,481	10,811	15,534
30,000 - 49,999	8,211	12,009	17,457	25,227	36,247
50,000 - 99,999	7,038	10,293	14,963	21,623	31,069
Total	44,573	65,190	94,764	136,944	196,767
Kisii					
5,000 - 9,999	5,172	7,155	9,838	13,447	18,275
10,000 - 14,999	5,172	7,155	9,838	13,447	18,275
15,000 - 19,999	5,172	7,155	9,838	13,447	18,275
20,000 - 24,999	15,517	21,465	29,513	40,340	54,824
30,000 - 49,999	25,861	35,775	49,188	67,233	91,373
50,000 - 99,999	20,689	28,620	39,351	53,787	73,098
100,000 +	5,172	7,155	9,838	13,447	18,275
Total	82,755	114,479	157,403	215,147	292,393
Kisumu					
0 - 4,999	9,257	13,303	17,592	20,663	24,271
5,000 - 9,999	23,142	33,256	43,981	51,659	60,677
10,000 - 14,999	13,885	19,954	26,389	30,995	36,406
15,000 - 19,999	27,771	39,908	52,777	61,990	72,812
20,000 - 24,999	50,913	73,164	96,758	113,649	133,489
25,000 - 29,999	9,257	13,303	17,592	20,663	24,271

Income band	Households				
	2017	2022	2027	2032	2037
30,000 - 49,999	60,170	86,467	114,350	134,312	157,759
50,000 - 99,999	18,514	26,605	35,185	41,327	48,541
Total	212,908	305,959	404,624	475,259	558,225
Kitui					
0 - 4,999	1,765	2,383	3,199	4,270	5,665
5,000 - 9,999	1,765	2,383	3,199	4,270	5,665
10,000 - 14,999	3,529	4,766	6,399	8,539	11,330
15,000 - 19,999	12,352	16,683	22,395	29,887	39,657
20,000 - 24,999	10,587	14,299	19,196	25,617	33,991
25,000 - 29,999	3,529	4,766	6,399	8,539	11,330
30,000 - 49,999	8,823	11,916	15,997	21,348	28,326
50,000 - 99,999	3,529	4,766	6,399	8,539	11,330
Total	45,878	61,964	83,182	111,009	147,296
Kwale					
5,000 - 9,999	1,622	2,556	4,004	6,236	9,656
10,000 - 14,999	4,865	7,668	12,012	18,708	28,969
15,000 - 19,999	3,243	5,112	8,008	12,472	19,313
20,000 - 24,999	3,243	5,112	8,008	12,472	19,313
25,000 - 29,999	4,865	7,668	12,012	18,708	28,969
30,000 - 49,999	11,351	17,891	28,029	43,652	67,595
50,000 - 99,999	16,216	25,559	40,041	62,360	96,564
Total	45,404	71,565	112,115	174,608	270,378
Laikipia					
0 - 4,999	1,217	1,804	2,660	3,898	5,679
5,000 - 9,999	8,516	12,630	18,618	27,284	39,754
10,000 - 14,999	6,083	9,022	13,299	19,488	28,396
15,000 - 19,999	3,650	5,413	7,979	11,693	17,037
20,000 - 24,999	6,083	9,022	13,299	19,488	28,396
25,000 - 29,999	1,217	1,804	2,660	3,898	5,679
30,000 - 49,999	9,733	14,434	21,278	31,181	45,433
50,000 - 99,999	2,433	3,609	5,319	7,795	11,358
Total	38,930	57,738	85,112	124,725	181,731
Lamu					
10,000 - 14,999	815	1,237	1,867	2,799	4,174
15,000 - 19,999	1,630	2,475	3,733	5,599	8,349
20,000 - 24,999	1,630	2,475	3,733	5,599	8,349
30,000 - 49,999	815	1,237	1,867	2,799	4,174
50,000 - 99,999	3,261	4,949	7,467	11,198	16,698
100,000 +	408	619	933	1,400	2,087
Total	8,560	12,992	19,600	29,394	43,831
Machakos					

Income band	Households				
	2017	2022	2027	2032	2037
5,000 - 9,999	19,832	28,294	37,294	43,490	50,715
10,000 - 14,999	19,832	28,294	37,294	43,490	50,715
15,000 - 19,999	13,221	18,863	24,863	28,993	33,810
20,000 - 24,999	46,274	66,020	87,020	101,477	118,335
25,000 - 29,999	13,221	18,863	24,863	28,993	33,810
30,000 - 49,999	79,327	113,178	149,177	173,960	202,861
50,000 - 99,999	26,442	37,726	49,726	57,987	67,620
100,000 +	26,442	37,726	49,726	57,987	67,620
Total	244,592	348,965	459,961	536,376	625,487
Makueni					
5,000 - 9,999	1,372	1,969	2,807	3,978	5,606
10,000 - 14,999	2,745	3,937	5,614	7,956	11,212
20,000 - 24,999	5,490	7,875	11,227	15,913	22,425
25,000 - 29,999	2,745	3,937	5,614	7,956	11,212
30,000 - 49,999	8,235	11,812	16,841	23,869	33,637
50,000 - 99,999	15,097	21,655	30,875	43,760	61,668
100,000 +	2,745	3,937	5,614	7,956	11,212
Total	38,428	55,123	78,591	111,389	156,974
Mandera					
0 - 4,999	5,334	6,859	8,766	11,138	14,071
5,000 - 9,999	3,334	4,287	5,479	6,961	8,794
10,000 - 14,999	1,334	1,715	2,192	2,785	3,518
15,000 - 19,999	4,667	6,002	7,671	9,746	12,312
20,000 - 24,999	2,667	3,430	4,383	5,569	7,035
25,000 - 29,999	3,334	4,287	5,479	6,961	8,794
30,000 - 49,999	4,001	5,144	6,575	8,354	10,553
50,000 - 99,999	2,667	3,430	4,383	5,569	7,035
Total	27,338	35,153	44,928	57,083	72,111
Marsabit					
0 - 4,999	624	812	1,049	1,347	1,721
10,000 - 14,999	3,121	4,058	5,243	6,736	8,604
15,000 - 19,999	2,497	3,246	4,195	5,389	6,883
20,000 - 24,999	624	812	1,049	1,347	1,721
25,000 - 29,999	1,873	2,435	3,146	4,042	5,162
30,000 - 49,999	4,993	6,492	8,390	10,778	13,767
50,000 - 99,999	5,618	7,304	9,438	12,125	15,487
Total	19,349	25,157	32,510	41,764	53,345
Meru					
5,000 - 9,999	4,964	7,039	9,921	13,902	19,368
10,000 - 14,999	7,942	11,262	15,874	22,243	30,988
15,000 - 19,999	6,949	9,854	13,890	19,462	27,115

Income band	Households				
	2017	2022	2027	2032	2037
20,000 - 24,999	2,978	4,223	5,953	8,341	11,621
30,000 - 49,999	12,905	18,301	25,795	36,144	50,356
50,000 - 99,999	7,942	11,262	15,874	22,243	30,988
Total	43,679	61,942	87,307	122,334	170,435
Migori					
0 - 4,999	3,925	5,769	8,428	12,241	17,365
5,000 - 9,999	19,623	28,845	42,141	61,205	86,826
10,000 - 14,999	15,699	23,076	33,713	48,964	69,461
15,000 - 19,999	3,925	5,769	8,428	12,241	17,365
20,000 - 24,999	11,774	17,307	25,285	36,723	52,096
30,000 - 49,999	31,398	46,151	67,426	97,928	138,922
50,000 - 99,999	27,473	40,382	58,998	85,687	121,557
Total	113,816	167,298	244,419	354,987	503,593
Mombasa					
5,000 - 9,999	9,328	12,328	16,292	21,531	28,454
10,000 - 14,999	18,656	24,655	32,584	43,061	56,908
15,000 - 19,999	9,328	12,328	16,292	21,531	28,454
20,000 - 24,999	74,625	98,622	130,335	172,246	227,634
25,000 - 29,999	18,656	24,655	32,584	43,061	56,908
30,000 - 49,999	149,250	197,244	260,670	344,492	455,267
50,000 - 99,999	83,953	110,950	146,627	193,777	256,088
100,000 +	55,969	73,966	97,751	129,184	170,725
Total	419,767	554,748	733,134	968,883	1,280,439
Murang'a					
0 - 4,999	5,499	7,950	11,424	16,319	23,177
5,000 - 9,999	12,832	18,551	26,656	38,077	54,080
10,000 - 14,999	9,165	13,250	19,040	27,198	38,628
15,000 - 19,999	12,832	18,551	26,656	38,077	54,080
20,000 - 24,999	5,499	7,950	11,424	16,319	23,177
30,000 - 49,999	10,999	15,901	22,848	32,637	46,354
50,000 - 99,999	9,165	13,250	19,040	27,198	38,628
Total	65,991	95,403	137,087	195,823	278,125
Nairobi					
0 - 4,999	38,240	51,713	69,933	94,573	127,894
5,000 - 9,999	86,040	116,355	157,350	212,789	287,761
10,000 - 14,999	114,720	155,140	209,800	283,719	383,681
15,000 - 19,999	143,400	193,925	262,250	354,649	479,602
20,000 - 24,999	200,761	271,494	367,150	496,508	671,443
25,000 - 29,999	86,040	116,355	157,350	212,789	287,761
30,000 - 49,999	449,321	607,630	821,717	1,111,232	1,502,752
50,000 - 99,999	420,641	568,846	769,267	1,040,302	1,406,832

Income band	Households				
	2017	2022	2027	2032	2037
100,000 +	57,360	77,570	104,900	141,859	191,841
Total	1,596,524	2,159,027	2,919,717	3,948,421	5,339,567
Nakuru					
0 - 4,999	47,226	73,863	114,824	156,100	199,553
5,000 - 9,999	59,032	92,329	143,530	195,125	249,441
10,000 - 14,999	59,032	92,329	143,530	195,125	249,441
15,000 - 19,999	41,323	64,630	100,471	136,587	174,609
20,000 - 24,999	23,613	36,932	57,412	78,050	99,776
25,000 - 29,999	29,516	46,164	71,765	97,562	124,720
30,000 - 49,999	82,645	129,261	200,941	273,175	349,217
50,000 - 99,999	35,419	55,397	86,118	117,075	149,665
100,000 +	5,903	9,233	14,353	19,512	24,944
Total	383,711	600,138	932,942	1,268,310	1,621,366
Nandi					
0 - 4,999	1,482	2,200	3,247	4,763	6,947
5,000 - 9,999	1,482	2,200	3,247	4,763	6,947
10,000 - 14,999	1,482	2,200	3,247	4,763	6,947
15,000 - 19,999	5,929	8,802	12,988	19,052	27,787
20,000 - 24,999	14,822	22,004	32,469	47,629	69,468
25,000 - 29,999	2,964	4,401	6,494	9,526	13,894
30,000 - 49,999	2,964	4,401	6,494	9,526	13,894
50,000 - 99,999	8,893	13,203	19,482	28,578	41,681
Total	40,019	59,412	87,667	128,599	187,563
Narok					
5,000 - 9,999	1,788	2,664	3,946	5,809	8,504
10,000 - 14,999	1,788	2,664	3,946	5,809	8,504
15,000 - 19,999	2,980	4,440	6,576	9,682	14,173
20,000 - 24,999	5,364	7,992	11,837	17,427	25,511
25,000 - 29,999	596	888	1,315	1,936	2,835
30,000 - 49,999	4,172	6,216	9,206	13,555	19,842
50,000 - 99,999	3,576	5,328	7,891	11,618	17,007
100,000 +	1,192	1,776	2,630	3,873	5,669
Total	21,456	31,970	47,348	69,709	102,045
Nyamira					
0 - 4,999	1,208	1,847	2,807	4,240	6,368
10,000 - 14,999	3,625	5,542	8,421	12,720	19,105
15,000 - 19,999	3,625	5,542	8,421	12,720	19,105
20,000 - 24,999	8,459	12,931	19,649	29,681	44,578
30,000 - 49,999	2,417	3,695	5,614	8,480	12,737
50,000 - 99,999	9,667	14,779	22,456	33,921	50,947
100,000 +	4,834	7,389	11,228	16,961	25,473

Income band	Households				
	2017	2022	2027	2032	2037
Total	33,835	51,726	78,597	118,724	178,313
Nyandarua					
0 - 4,999	1,216	1,822	2,712	4,014	5,907
5,000 - 9,999	10,946	16,396	24,410	36,128	53,164
10,000 - 14,999	6,081	9,109	13,561	20,071	29,535
15,000 - 19,999	3,649	5,465	8,137	12,043	17,721
20,000 - 24,999	4,865	7,287	10,849	16,057	23,628
25,000 - 29,999	1,216	1,822	2,712	4,014	5,907
30,000 - 49,999	10,946	16,396	24,410	36,128	53,164
50,000 - 99,999	13,379	20,040	29,835	44,156	64,978
100,000 +	1,216	1,822	2,712	4,014	5,907
Total	53,516	80,159	119,340	176,624	259,911
Nyeri					
0 - 4,999	21,128	31,920	47,932	71,551	106,199
5,000 - 9,999	13,205	19,950	29,957	44,719	66,375
10,000 - 14,999	15,846	23,940	35,949	53,663	79,649
15,000 - 19,999	10,564	15,960	23,966	35,776	53,100
20,000 - 24,999	15,846	23,940	35,949	53,663	79,649
30,000 - 49,999	13,205	19,950	29,957	44,719	66,375
50,000 - 99,999	2,641	3,990	5,991	8,944	13,275
100,000 +	2,641	3,990	5,991	8,944	13,275
Total	95,076	143,640	215,693	321,980	477,897
Samburu					
0 - 4,999	1,057	1,550	2,259	3,272	4,712
5,000 - 9,999	1,057	1,550	2,259	3,272	4,712
10,000 - 14,999	3,172	4,650	6,776	9,815	14,136
15,000 - 19,999	529	775	1,129	1,636	2,356
20,000 - 24,999	2,115	3,100	4,517	6,543	9,424
25,000 - 29,999	529	775	1,129	1,636	2,356
30,000 - 49,999	3,701	5,425	7,905	11,451	16,493
50,000 - 99,999	2,643	3,875	5,647	8,179	11,780
Total	14,802	21,700	31,621	45,804	65,970
Siaya					
10,000 - 14,999	2,790	3,971	5,618	7,901	11,049
15,000 - 19,999	2,790	3,971	5,618	7,901	11,049
20,000 - 24,999	8,370	11,914	16,855	23,704	33,146
25,000 - 29,999	4,185	5,957	8,427	11,852	16,573
30,000 - 49,999	8,370	11,914	16,855	23,704	33,146
50,000 - 99,999	6,975	9,928	14,046	19,753	27,622
100,000 +	4,185	5,957	8,427	11,852	16,573
Total	37,666	53,612	75,846	106,668	149,158

Income band	Households				
	2017	2022	2027	2032	2037
Taita-Taveta					
0 - 4,999	1,660	2,629	4,138	6,473	10,070
5,000 - 9,999	4,981	7,887	12,413	19,420	30,210
10,000 - 14,999	2,491	3,944	6,207	9,710	15,105
15,000 - 19,999	830	1,315	2,069	3,237	5,035
20,000 - 24,999	4,151	6,573	10,344	16,184	25,175
25,000 - 29,999	3,321	5,258	8,275	12,947	20,140
30,000 - 49,999	6,642	10,517	16,551	25,894	40,279
50,000 - 99,999	1,660	2,629	4,138	6,473	10,070
Total	25,737	40,752	64,134	100,338	156,082
Tana River					
10,000 - 14,999	998	1,375	1,883	2,564	3,471
15,000 - 19,999	499	688	942	1,282	1,735
20,000 - 24,999	499	688	942	1,282	1,735
25,000 - 29,999	1,996	2,750	3,766	5,128	6,941
30,000 - 49,999	4,491	6,188	8,474	11,537	15,618
50,000 - 99,999	3,493	4,813	6,591	8,974	12,148
Total	11,975	16,500	22,598	30,767	41,649
Tharaka-Nithi					
5,000 - 9,999	1,093	1,528	2,122	2,931	4,024
10,000 - 14,999	5,464	7,638	10,611	14,654	20,122
20,000 - 24,999	8,743	12,220	16,977	23,446	32,195
25,000 - 29,999	2,186	3,055	4,244	5,861	8,049
30,000 - 49,999	8,743	12,220	16,977	23,446	32,195
50,000 - 99,999	7,650	10,693	14,855	20,515	28,170
Total	33,880	47,354	65,786	90,853	124,755
Trans Nzoia					
0 - 4,999	8,742	12,432	17,572	24,691	34,496
5,000 - 9,999	15,735	22,377	31,629	44,443	62,092
10,000 - 14,999	8,742	12,432	17,572	24,691	34,496
15,000 - 19,999	8,742	12,432	17,572	24,691	34,496
20,000 - 24,999	5,245	7,459	10,543	14,814	20,697
30,000 - 49,999	6,993	9,945	14,057	19,753	27,596
50,000 - 99,999	5,245	7,459	10,543	14,814	20,697
Total	59,445	84,536	119,488	167,897	234,570
Turkana					
0 - 4,999	15,436	30,951	61,682	122,202	240,719
5,000 - 9,999	4,210	8,441	16,822	33,328	65,651
15,000 - 19,999	1,403	2,814	5,607	11,109	21,884
20,000 - 24,999	2,807	5,627	11,215	22,219	43,767
25,000 - 29,999	7,016	14,068	28,037	55,546	109,418

Income band	Households				
	2017	2022	2027	2032	2037
30,000 - 49,999	4,210	8,441	16,822	33,328	65,651
50,000 - 99,999	9,823	19,696	39,252	77,765	153,185
Total	44,905	90,038	179,438	355,497	700,274
Uasin Gishu					
0 - 4,999	4,897	7,364	11,005	16,351	20,709
5,000 - 9,999	19,589	29,455	44,022	65,405	82,837
10,000 - 14,999	34,280	51,546	77,038	114,459	144,965
15,000 - 19,999	24,486	36,819	55,027	81,756	103,546
20,000 - 24,999	29,383	44,182	66,033	98,108	124,255
30,000 - 49,999	29,383	44,182	66,033	98,108	124,255
50,000 - 99,999	9,794	14,727	22,011	32,703	41,418
Total	151,812	228,276	341,169	506,890	641,986
Vihiga					
0 - 4,999	4,036	5,515	7,491	10,115	13,579
5,000 - 9,999	6,054	8,273	11,237	15,172	20,369
10,000 - 14,999	16,144	22,062	29,965	40,459	54,316
15,000 - 19,999	8,072	11,031	14,982	20,229	27,158
20,000 - 24,999	12,108	16,546	22,473	30,344	40,737
25,000 - 29,999	4,036	5,515	7,491	10,115	13,579
30,000 - 49,999	10,090	13,788	18,728	25,287	33,948
50,000 - 99,999	4,036	5,515	7,491	10,115	13,579
Total	64,577	88,246	119,858	161,836	217,266
Wajir					
0 - 4,999	432	555	709	901	1,139
5,000 - 9,999	1,295	1,665	2,128	2,704	3,416
10,000 - 14,999	1,726	2,220	2,837	3,605	4,554
15,000 - 19,999	863	1,110	1,419	1,802	2,277
25,000 - 29,999	1,726	2,220	2,837	3,605	4,554
30,000 - 49,999	4,316	5,550	7,093	9,012	11,385
50,000 - 99,999	3,021	3,885	4,965	6,309	7,970
Total	13,380	17,205	21,989	27,938	35,294
West Pokot					
0 - 4,999	1,694	2,457	3,542	5,076	7,233
5,000 - 9,999	2,118	3,071	4,428	6,345	9,041
10,000 - 14,999	1,694	2,457	3,542	5,076	7,233
15,000 - 19,999	2,118	3,071	4,428	6,345	9,041
20,000 - 24,999	847	1,229	1,771	2,538	3,616
30,000 - 49,999	2,118	3,071	4,428	6,345	9,041
50,000 - 99,999	2,541	3,686	5,313	7,614	10,849
100,000 +	847	1,229	1,771	2,538	3,616
Total	13,976	20,270	29,222	41,877	59,671

Income band	Households				
	2017	2022	2027	2032	2037
National total	5,464,233	7,761,449	10,851,630	14,933,266	20,289,006

Source: KPMG survey

Step 6: Based on KPMG survey results, apply the ratio of tenants in each income band to the number of urban households distributed among the income bands

After determining the number of urban households across each income band in all 47. The number of households with tenants per income band (2017-2037) for all the counties was arrived at by multiplying the above determined urban house households per income band with the proportion of renters in the household survey issued by KPMG.

Calculations

1. We got the proportion of renters per income band per county from the household survey as seen below.

County	0 - 4999	5,000 - 9,999	10,000 - 14,999	15,000 - 19,999	20,000 - 24,999	25,000 - 29,999	30,000 - 49,999	50,000 - 99,999
Baringo	100.00%	100.00%	33.33%	83.33%	0.00%	100.00%	100.00%	100.00%
Bomet	0.00%	0.00%	75.00%	25.00%	66.67%	100.00%	66.67%	62.50%
Bungoma	0.00%	66.67%	75.00%	66.67%	87.50%	83.33%	100.00%	75.00%
Busia	100.00%	80.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%
Elgeyo-Marakwet	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%
Embu	0.00%	100.00%	100.00%	100.00%	33.33%	100.00%	50.00%	44.44%
Garissa	100.00%	100.00%	100.00%	85.71%	100.00%	100.00%	50.00%	60.00%
Homa Bay	100.00%	83.33%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%
Isiolo	0.00%	100.00%	60.00%	75.00%	50.00%	33.33%	77.78%	60.00%
Kajiado	0.00%	100.00%	100.00%	100.00%	100.00%	0.00%	87.50%	66.67%
Kakamega	100.00%	0.00%	66.67%	83.33%	40.00%	100.00%	50.00%	66.67%
Kericho	0.00%	100.00%	60.00%	50.00%	100.00%	100.00%	50.00%	80.00%
Kiambu	100.00%	100.00%	80.00%	78.57%	77.78%	100.00%	83.33%	80.00%
Kilifi	100.00%	83.33%	100.00%	100.00%	0.00%	100.00%	85.71%	92.31%
Kirinyaga	0.00%	100.00%	87.50%	66.67%	100.00%	100.00%	100.00%	100.00%
Kisii	0.00%	50.00%	100.00%	50.00%	83.33%	0.00%	60.00%	62.50%
Kisumu	100.00%	100.00%	100.00%	100.00%	90.91%	100.00%	76.92%	50.00%
Kitui	100.00%	100.00%	50.00%	83.33%	83.33%	50.00%	100.00%	50.00%
Kwale	0.00%	100.00%	66.67%	100.00%	50.00%	100.00%	85.71%	88.89%
Laikipia	100.00%	85.71%	100.00%	100.00%	80.00%	100.00%	75.00%	100.00%
Lamu	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	100.00%	87.50%
Machakos	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Makueni	0.00%	0.00%	100.00%	0.00%	75.00%	100.00%	100.00%	81.82%
Mandera	25.00%	40.00%	100.00%	85.71%	75.00%	40.00%	66.67%	75.00%
Marsabit	100.00%	0.00%	100.00%	75.00%	0.00%	66.67%	62.50%	77.78%
Meru	0.00%	100.00%	87.50%	85.71%	100.00%	0.00%	92.31%	100.00%

Migori	0.00%	0.00%	75.00%	0.00%	0.00%	0.00%	50.00%	71.43%
Mombasa	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	87.50%	100.00%
Murang'a	100.00%	100.00%	80.00%	71.43%	100.00%	0.00%	100.00%	100.00%
Nairobi	75.00%	100.00%	100.00%	100.00%	80.95%	88.89%	95.74%	97.73%
Nakuru	87.50%	90.00%	100.00%	85.71%	100.00%	100.00%	100.00%	100.00%
Nandi	0.00%	100.00%	100.00%	100.00%	90.00%	100.00%	100.00%	83.33%
Narok	0.00%	100.00%	100.00%	60.00%	77.78%	100.00%	85.71%	100.00%
Nyamira	100.00%	0.00%	66.67%	66.67%	71.43%	0.00%	50.00%	75.00%
Nyandarua	100.00%	88.89%	100.00%	100.00%	75.00%	100.00%	77.78%	63.64%
Nyeri	87.50%	80.00%	100.00%	100.00%	100.00%	0.00%	60.00%	100.00%
Samburu	50.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Siaya	0.00%	0.00%	100.00%	100.00%	50.00%	100.00%	83.33%	80.00%
Taita-Taveta	50.00%	83.33%	66.67%	100.00%	80.00%	75.00%	50.00%	100.00%
Tana River	0.00%	0.00%	50.00%	100.00%	100.00%	66.67%	77.78%	83.33%
Tharaka-Nithi	0.00%	100.00%	80.00%	0.00%	50.00%	100.00%	87.50%	100.00%
Trans Nzoia	80.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%
Turkana	18.18%	100.00%	0.00%	0.00%	100.00%	80.00%	100.00%	57.14%
Uasin Gishu	100.00%	75.00%	100.00%	100.00%	83.33%	0.00%	100.00%	50.00%
Vihiga	50.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Wajir	0.00%	66.67%	50.00%	0.00%	0.00%	75.00%	55.56%	71.43%
West Pokot	100.00%	75.00%	66.67%	100.00%	100.00%	0.00%	80.00%	100.00%

Source: KPMG survey

2. We multiplied the above ratios with the urban population income band per county calculated in step 5 to get the number of rented property per income as seen in the below example for Garissa County

The number of households with rented property per income band Garissa County

Income Band	2017	2022	2027	2032	2037
Garissa					
0 - 4,999	693	891	1,139	1,447	1,828
5,000 - 9,999	2,079	2,674	3,417	4,342	5,485
10,000 - 14,999	4,852	6,239	7,973	10,130	12,798
15,000 - 19,999	4,159	5,347	6,834	8,683	10,969
20,000 - 24,999	5,545	7,130	9,112	11,578	14,626
25,000 - 29,999	693	891	1,139	1,447	1,828
30,000 - 49,999	1,386	1,782	2,278	2,894	3,656
50,000 - 99,999	2,079	2,674	3,417	4,342	5,485
Total	21,486	27,628	35,311	44,864	56,675

Source: KPMG survey

The table below presents the urban tenant households per income band in each county.

Table 33: Tenants in urban households distributed among income bands (2017 – 2037)

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
Baringo					
0 - 4,999	5,082	7,801	11,901	18,049	27,218
5,000 - 9,999	5,082	7,801	11,901	18,049	27,218
10,000 - 14,999	847	1,300	1,983	3,008	4,536
15,000 - 19,999	4,235	6,501	9,917	15,041	22,681
25,000 - 29,999	847	1,300	1,983	3,008	4,536
30,000 - 49,999	3,388	5,200	7,934	12,033	18,145
50,000 - 99,999	2,541	3,900	5,950	9,025	13,609
Total	22,023	33,803	51,571	78,213	117,943
Bomet					
10,000 - 14,999	3,030	4,366	6,253	8,902	12,602
15,000 - 19,999	1,010	1,455	2,084	2,967	4,201
20,000 - 24,999	4,040	5,821	8,337	11,869	16,802
25,000 - 29,999	1,010	1,455	2,084	2,967	4,201
30,000 - 49,999	4,040	5,821	8,337	11,869	16,802
50,000 - 99,999	5,050	7,276	10,421	14,837	21,003
Total	18,180	26,195	37,516	53,412	75,609
Bungoma					
5,000 - 9,999	3,086	4,263	5,853	7,989	10,843
10,000 - 14,999	4,629	6,395	8,780	11,984	16,264
15,000 - 19,999	4,629	6,395	8,780	11,984	16,264
20,000 - 24,999	10,801	14,921	20,487	27,963	37,949
25,000 - 29,999	7,715	10,658	14,633	19,974	27,107
30,000 - 49,999	15,431	21,316	29,267	39,947	54,213
50,000 - 99,999	9,258	12,789	17,560	23,968	32,528
100,000 +	3,086	4,263	5,853	7,989	10,843
Total	58,636	81,000	111,214	151,799	206,010
Busia					
0 - 4,999	12,480	16,848	22,606	30,153	39,990
5,000 - 9,999	5,200	7,020	9,419	12,564	16,663
10,000 - 14,999	3,120	4,212	5,651	7,538	9,998
15,000 - 19,999	1,040	1,404	1,884	2,513	3,333
20,000 - 24,999	1,040	1,404	1,884	2,513	3,333
30,000 - 49,999	2,080	2,808	3,768	5,026	6,665
50,000 - 99,999	2,080	2,808	3,768	5,026	6,665
Total	27,041	36,504	48,979	65,332	86,645
Elgeyo-Marakwet					
0 - 4,999	2,894	4,215	6,102	8,782	12,567
5,000 - 9,999	3,473	5,058	7,322	10,538	15,080

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
10,000 - 14,999	2,894	4,215	6,102	8,782	12,567
15,000 - 19,999	1,736	2,529	3,661	5,269	7,540
20,000 - 24,999	4,630	6,744	9,763	14,051	20,106
30,000 - 49,999	1,736	2,529	3,661	5,269	7,540
50,000 - 99,999	1,736	2,529	3,661	5,269	7,540
100,000 +	579	843	1,220	1,756	2,513
Total	19,678	28,662	41,494	59,717	85,452
Embu					
5,000 - 9,999	1,178	1,686	2,399	3,392	4,769
10,000 - 14,999	7,070	10,118	14,392	20,351	28,613
15,000 - 19,999	4,713	6,745	9,595	13,568	19,076
20,000 - 24,999	1,178	1,686	2,399	3,392	4,769
25,000 - 29,999	3,535	5,059	7,196	10,176	14,307
30,000 - 49,999	3,535	5,059	7,196	10,176	14,307
50,000 - 99,999	4,713	6,745	9,595	13,568	19,076
Total	25,924	37,100	52,772	74,622	104,915
Garissa					
0 - 4,999	693	891	1,139	1,447	1,828
5,000 - 9,999	2,079	2,674	3,417	4,342	5,485
10,000 - 14,999	4,852	6,239	7,973	10,130	12,798
15,000 - 19,999	4,159	5,347	6,834	8,683	10,969
20,000 - 24,999	5,545	7,130	9,112	11,578	14,626
25,000 - 29,999	693	891	1,139	1,447	1,828
30,000 - 49,999	1,386	1,782	2,278	2,894	3,656
50,000 - 99,999	2,079	2,674	3,417	4,342	5,485
Total	21,486	27,628	35,311	44,864	56,675
Homa Bay					
0 - 4,999	4,365	5,665	7,307	9,369	11,946
5,000 - 9,999	7,275	9,441	12,178	15,616	19,909
10,000 - 14,999	1,455	1,888	2,436	3,123	3,982
15,000 - 19,999	13,095	16,994	21,921	28,108	35,837
20,000 - 24,999	7,275	9,441	12,178	15,616	19,909
30,000 - 49,999	4,365	5,665	7,307	9,369	11,946
50,000 - 99,999	5,820	7,553	9,742	12,493	15,928
Total	43,650	56,647	73,068	93,695	119,456
Isiolo					
5,000 - 9,999	2,548	3,305	4,261	4,970	5,269
10,000 - 14,999	1,911	2,479	3,196	3,727	3,952
15,000 - 19,999	1,911	2,479	3,196	3,727	3,952
20,000 - 24,999	637	826	1,065	1,242	1,317
25,000 - 29,999	637	826	1,065	1,242	1,317

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
30,000 - 49,999	4,459	5,784	7,457	8,697	9,221
50,000 - 99,999	1,911	2,479	3,196	3,727	3,952
Total	14,013	18,177	23,436	27,334	28,981
Kajiado					
5,000 - 9,999	17,849	28,352	44,762	67,816	88,047
10,000 - 14,999	17,849	28,352	44,762	67,816	88,047
15,000 - 19,999	17,849	28,352	44,762	67,816	88,047
20,000 - 24,999	35,697	56,703	89,523	135,633	176,093
30,000 - 49,999	31,235	49,615	78,333	118,679	154,082
50,000 - 99,999	8,924	14,176	22,381	33,908	44,023
100,000 +	13,387	21,264	33,571	50,862	66,035
Total	142,790	226,813	358,092	542,530	704,374
Kakamega					
0 - 4,999	1,733	2,273	2,963	3,839	4,946
10,000 - 14,999	6,932	9,091	11,850	15,356	19,785
15,000 - 19,999	8,665	11,364	14,813	19,195	24,731
20,000 - 24,999	4,333	5,682	7,406	9,597	12,365
25,000 - 29,999	1,733	2,273	2,963	3,839	4,946
30,000 - 49,999	8,665	11,364	14,813	19,195	24,731
50,000 - 99,999	14,931	19,581	25,524	33,074	42,613
100,000 +	1,733	2,273	2,963	3,839	4,946
Total	48,724	63,900	83,294	107,934	139,063
Kericho					
5,000 - 9,999	4,363	6,501	9,627	14,172	17,878
10,000 - 14,999	13,089	19,502	28,880	42,516	53,634
15,000 - 19,999	8,726	13,001	19,254	28,344	35,756
20,000 - 24,999	4,363	6,501	9,627	14,172	17,878
25,000 - 29,999	8,726	13,001	19,254	28,344	35,756
30,000 - 49,999	17,453	26,003	38,507	56,688	71,511
50,000 - 99,999	21,816	32,504	48,134	70,860	89,389
Total	78,537	117,013	173,282	255,097	321,801
Kiambu					
0 - 4,999	31,865	43,572	51,935	61,902	73,784
5,000 - 9,999	87,628	119,822	142,820	170,232	202,905
10,000 - 14,999	31,865	43,572	51,935	61,902	73,784
15,000 - 19,999	87,628	119,822	142,820	170,232	202,905
20,000 - 24,999	55,764	76,250	90,885	108,329	129,121
25,000 - 29,999	7,966	10,893	12,984	15,476	18,446
30,000 - 49,999	79,662	108,929	129,836	154,756	184,459
50,000 - 99,999	63,730	87,143	103,869	123,805	147,567
100,000 +	15,932	21,786	25,967	30,951	36,892

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
Total	462,041	631,790	753,051	897,586	1,069,862
Kilifi					
0 - 4,999	3,443	5,977	10,313	17,689	30,166
5,000 - 9,999	17,217	29,887	51,565	88,444	150,831
10,000 - 14,999	3,443	5,977	10,313	17,689	30,166
15,000 - 19,999	10,330	17,932	30,939	53,066	90,498
25,000 - 29,999	6,887	11,955	20,626	35,378	60,332
30,000 - 49,999	20,661	35,864	61,878	106,133	180,997
50,000 - 99,999	44,765	77,706	134,070	229,954	392,160
100,000 +	3,443	5,977	10,313	17,689	30,166
Total	110,190	191,276	330,018	566,041	965,316
Kirinyaga					
5,000 - 9,999	9,384	13,724	19,950	28,830	41,425
10,000 - 14,999	8,211	12,009	17,457	25,227	36,247
15,000 - 19,999	2,346	3,431	4,988	7,208	10,356
20,000 - 24,999	3,519	5,147	7,481	10,811	15,534
25,000 - 29,999	3,519	5,147	7,481	10,811	15,534
30,000 - 49,999	8,211	12,009	17,457	25,227	36,247
50,000 - 99,999	7,038	10,293	14,963	21,623	31,069
Total	42,227	61,759	89,776	129,736	186,411
Kisii					
5,000 - 9,999	2,586	3,577	4,919	6,723	9,137
10,000 - 14,999	5,172	7,155	9,838	13,447	18,275
15,000 - 19,999	2,586	3,577	4,919	6,723	9,137
20,000 - 24,999	12,930	17,887	24,594	33,617	45,686
30,000 - 49,999	15,517	21,465	29,513	40,340	54,824
50,000 - 99,999	12,930	17,887	24,594	33,617	45,686
100,000 +	2,586	3,577	4,919	6,723	9,137
Total	54,308	75,127	103,296	141,190	191,883
Kisumu					
0 - 4,999	9,257	13,303	17,592	20,663	24,271
5,000 - 9,999	23,142	33,256	43,981	51,659	60,677
10,000 - 14,999	13,885	19,954	26,389	30,995	36,406
15,000 - 19,999	27,771	39,908	52,777	61,990	72,812
20,000 - 24,999	46,284	66,513	87,962	103,317	121,353
25,000 - 29,999	9,257	13,303	17,592	20,663	24,271
30,000 - 49,999	46,284	66,513	87,962	103,317	121,353
50,000 - 99,999	9,257	13,303	17,592	20,663	24,271
Total	185,138	266,051	351,847	413,269	485,413
Kitui					
0 - 4,999	1,765	2,383	3,199	4,270	5,665

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
5,000 - 9,999	1,765	2,383	3,199	4,270	5,665
10,000 - 14,999	1,765	2,383	3,199	4,270	5,665
15,000 - 19,999	10,587	14,299	19,196	25,617	33,991
20,000 - 24,999	8,823	11,916	15,997	21,348	28,326
25,000 - 29,999	1,765	2,383	3,199	4,270	5,665
30,000 - 49,999	8,823	11,916	15,997	21,348	28,326
50,000 - 99,999	1,765	2,383	3,199	4,270	5,665
Total	37,056	50,048	67,186	89,661	118,970
Kwale					
5,000 - 9,999	1,622	2,556	4,004	6,236	9,656
10,000 - 14,999	3,243	5,112	8,008	12,472	19,313
15,000 - 19,999	3,243	5,112	8,008	12,472	19,313
20,000 - 24,999	1,622	2,556	4,004	6,236	9,656
25,000 - 29,999	4,865	7,668	12,012	18,708	28,969
30,000 - 49,999	9,729	15,335	24,025	37,416	57,938
50,000 - 99,999	14,594	23,003	36,037	56,124	86,907
Total	38,918	61,342	96,099	149,664	231,753
Laikipia					
0 - 4,999	1,217	1,804	2,660	3,898	5,679
5,000 - 9,999	7,299	10,826	15,958	23,386	34,075
10,000 - 14,999	6,083	9,022	13,299	19,488	28,396
15,000 - 19,999	3,650	5,413	7,979	11,693	17,037
20,000 - 24,999	4,866	7,217	10,639	15,591	22,716
25,000 - 29,999	1,217	1,804	2,660	3,898	5,679
30,000 - 49,999	7,299	10,826	15,958	23,386	34,075
50,000 - 99,999	2,433	3,609	5,319	7,795	11,358
Total	34,064	50,520	74,473	109,135	159,015
Lamu					
10,000 - 14,999	815	1,237	1,867	2,799	4,174
15,000 - 19,999	1,630	2,475	3,733	5,599	8,349
20,000 - 24,999	1,630	2,475	3,733	5,599	8,349
30,000 - 49,999	815	1,237	1,867	2,799	4,174
50,000 - 99,999	2,853	4,331	6,533	9,798	14,610
Total	7,744	11,755	17,733	26,595	39,657
Machakos					
5,000 - 9,999	19,832	28,294	37,294	43,490	50,715
10,000 - 14,999	19,832	28,294	37,294	43,490	50,715
15,000 - 19,999	13,221	18,863	24,863	28,993	33,810
20,000 - 24,999	46,274	66,020	87,020	101,477	118,335
25,000 - 29,999	13,221	18,863	24,863	28,993	33,810
30,000 - 49,999	79,327	113,178	149,177	173,960	202,861

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
50,000 - 99,999	26,442	37,726	49,726	57,987	67,620
100,000 +	26,442	37,726	49,726	57,987	67,620
Total	244,592	348,965	459,961	536,376	625,487
Makueni					
10,000 - 14,999	2,745	3,937	5,614	7,956	11,212
20,000 - 24,999	4,117	5,906	8,420	11,935	16,819
25,000 - 29,999	2,745	3,937	5,614	7,956	11,212
30,000 - 49,999	8,235	11,812	16,841	23,869	33,637
50,000 - 99,999	12,352	17,718	25,261	35,804	50,456
100,000 +	2,745	3,937	5,614	7,956	11,212
Total	32,938	47,248	67,363	95,477	134,549
Mandera					
0 - 4,999	1,334	1,715	2,192	2,785	3,518
5,000 - 9,999	1,334	1,715	2,192	2,785	3,518
10,000 - 14,999	1,334	1,715	2,192	2,785	3,518
15,000 - 19,999	4,001	5,144	6,575	8,354	10,553
20,000 - 24,999	2,000	2,572	3,287	4,177	5,276
25,000 - 29,999	1,334	1,715	2,192	2,785	3,518
30,000 - 49,999	2,667	3,430	4,383	5,569	7,035
50,000 - 99,999	2,000	2,572	3,287	4,177	5,276
Total	16,003	20,577	26,299	33,414	42,212
Marsabit					
0 - 4,999	624	812	1,049	1,347	1,721
10,000 - 14,999	3,121	4,058	5,243	6,736	8,604
15,000 - 19,999	1,873	2,435	3,146	4,042	5,162
25,000 - 29,999	1,248	1,623	2,097	2,694	3,442
30,000 - 49,999	3,121	4,058	5,243	6,736	8,604
50,000 - 99,999	4,369	5,681	7,341	9,431	12,046
Total	14,356	18,665	24,120	30,986	39,579
Meru					
5,000 - 9,999	4,964	7,039	9,921	13,902	19,368
10,000 - 14,999	6,949	9,854	13,890	19,462	27,115
15,000 - 19,999	5,956	8,447	11,906	16,682	23,241
20,000 - 24,999	2,978	4,223	5,953	8,341	11,621
30,000 - 49,999	11,913	16,893	23,811	33,364	46,482
50,000 - 99,999	7,942	11,262	15,874	22,243	30,988
Total	40,701	57,719	81,354	113,993	158,814
Migori					
10,000 - 14,999	11,774	17,307	25,285	36,723	52,096
30,000 - 49,999	15,699	23,076	33,713	48,964	69,461
50,000 - 99,999	19,623	28,845	42,141	61,205	86,826

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
Total	47,096	69,227	101,139	146,891	208,383
Mombasa					
5,000 - 9,999	9,328	12,328	16,292	21,531	28,454
10,000 - 14,999	18,656	24,655	32,584	43,061	56,908
15,000 - 19,999	9,328	12,328	16,292	21,531	28,454
20,000 - 24,999	74,625	98,622	130,335	172,246	227,634
25,000 - 29,999	18,656	24,655	32,584	43,061	56,908
30,000 - 49,999	130,594	172,588	228,086	301,430	398,359
50,000 - 99,999	83,953	110,950	146,627	193,777	256,088
100,000 +	27,984	36,983	48,876	64,592	85,363
Total	373,126	493,109	651,675	861,229	1,138,168
Murang'a					
0 - 4,999	5,499	7,950	11,424	16,319	23,177
5,000 - 9,999	12,832	18,551	26,656	38,077	54,080
10,000 - 14,999	7,332	10,600	15,232	21,758	30,903
15,000 - 19,999	9,165	13,250	19,040	27,198	38,628
20,000 - 24,999	5,499	7,950	11,424	16,319	23,177
30,000 - 49,999	10,999	15,901	22,848	32,637	46,354
50,000 - 99,999	9,165	13,250	19,040	27,198	38,628
Total	60,492	87,453	125,663	179,504	254,948
Nairobi					
0 - 4,999	28,680	38,785	52,450	70,930	95,920
5,000 - 9,999	86,040	116,355	157,350	212,789	287,761
10,000 - 14,999	114,720	155,140	209,800	283,719	383,681
15,000 - 19,999	143,400	193,925	262,250	354,649	479,602
20,000 - 24,999	162,520	219,781	297,217	401,935	543,549
25,000 - 29,999	76,480	103,426	139,867	189,146	255,788
30,000 - 49,999	430,201	581,774	786,750	1,063,946	1,438,806
50,000 - 99,999	411,081	555,917	751,783	1,016,659	1,374,859
100,000 +	57,360	77,570	104,900	141,859	191,841
Total	1,510,484	2,042,673	2,762,367	3,735,632	5,051,806
Nakuru					
0 - 4,999	41,323	64,630	100,471	136,587	174,609
5,000 - 9,999	53,129	83,096	129,177	175,612	224,497
10,000 - 14,999	59,032	92,329	143,530	195,125	249,441
15,000 - 19,999	35,419	55,397	86,118	117,075	149,665
20,000 - 24,999	23,613	36,932	57,412	78,050	99,776
25,000 - 29,999	29,516	46,164	71,765	97,562	124,720
30,000 - 49,999	82,645	129,261	200,941	273,175	349,217
50,000 - 99,999	35,419	55,397	86,118	117,075	149,665
100,000 +	5,903	9,233	14,353	19,512	24,944

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
Total	366,001	572,440	889,883	1,209,773	1,546,534
Nandi					
5,000 - 9,999	1,482	2,200	3,247	4,763	6,947
10,000 - 14,999	1,482	2,200	3,247	4,763	6,947
15,000 - 19,999	5,929	8,802	12,988	19,052	27,787
20,000 - 24,999	13,340	19,804	29,222	42,866	62,521
25,000 - 29,999	2,964	4,401	6,494	9,526	13,894
30,000 - 49,999	2,964	4,401	6,494	9,526	13,894
50,000 - 99,999	7,411	11,002	16,235	23,815	34,734
Total	35,572	52,810	77,926	114,310	166,723
Narok					
5,000 - 9,999	1,788	2,664	3,946	5,809	8,504
10,000 - 14,999	1,788	2,664	3,946	5,809	8,504
15,000 - 19,999	1,788	2,664	3,946	5,809	8,504
20,000 - 24,999	4,172	6,216	9,206	13,555	19,842
25,000 - 29,999	596	888	1,315	1,936	2,835
30,000 - 49,999	3,576	5,328	7,891	11,618	17,007
50,000 - 99,999	3,576	5,328	7,891	11,618	17,007
100,000 +	1,192	1,776	2,630	3,873	5,669
Total	18,476	27,530	40,772	60,027	87,872
Nyamira					
0 - 4,999	1,208	1,847	2,807	4,240	6,368
10,000 - 14,999	2,417	3,695	5,614	8,480	12,737
15,000 - 19,999	2,417	3,695	5,614	8,480	12,737
20,000 - 24,999	6,042	9,237	14,035	21,201	31,842
30,000 - 49,999	1,208	1,847	2,807	4,240	6,368
50,000 - 99,999	7,250	11,084	16,842	25,441	38,210
100,000 +	1,208	1,847	2,807	4,240	6,368
Total	21,751	33,252	50,526	76,323	114,630
Nyandarua					
0 - 4,999	1,216	1,822	2,712	4,014	5,907
5,000 - 9,999	9,730	14,574	21,698	32,113	47,257
10,000 - 14,999	6,081	9,109	13,561	20,071	29,535
15,000 - 19,999	3,649	5,465	8,137	12,043	17,721
20,000 - 24,999	3,649	5,465	8,137	12,043	17,721
25,000 - 29,999	1,216	1,822	2,712	4,014	5,907
30,000 - 49,999	8,514	12,753	18,986	28,099	41,350
50,000 - 99,999	8,514	12,753	18,986	28,099	41,350
100,000 +	1,216	1,822	2,712	4,014	5,907
Total	43,785	65,585	97,642	144,511	212,655
Nyeri					

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
0 - 4,999	18,487	27,930	41,940	62,607	92,924
5,000 - 9,999	10,564	15,960	23,966	35,776	53,100
10,000 - 14,999	15,846	23,940	35,949	53,663	79,649
15,000 - 19,999	10,564	15,960	23,966	35,776	53,100
20,000 - 24,999	15,846	23,940	35,949	53,663	79,649
30,000 - 49,999	7,923	11,970	17,974	26,832	39,825
50,000 - 99,999	2,641	3,990	5,991	8,944	13,275
100,000 +	2,641	3,990	5,991	8,944	13,275
Total	84,512	127,680	191,727	286,205	424,797
Samburu					
0 - 4,999	529	775	1,129	1,636	2,356
5,000 - 9,999	1,057	1,550	2,259	3,272	4,712
10,000 - 14,999	3,172	4,650	6,776	9,815	14,136
15,000 - 19,999	529	775	1,129	1,636	2,356
20,000 - 24,999	2,115	3,100	4,517	6,543	9,424
25,000 - 29,999	529	775	1,129	1,636	2,356
30,000 - 49,999	3,701	5,425	7,905	11,451	16,493
50,000 - 99,999	2,643	3,875	5,647	8,179	11,780
Total	14,274	20,925	30,491	44,168	63,614
Siaya					
10,000 - 14,999	2,790	3,971	5,618	7,901	11,049
15,000 - 19,999	2,790	3,971	5,618	7,901	11,049
20,000 - 24,999	4,185	5,957	8,427	11,852	16,573
25,000 - 29,999	4,185	5,957	8,427	11,852	16,573
30,000 - 49,999	6,975	9,928	14,046	19,753	27,622
50,000 - 99,999	5,580	7,943	11,236	15,803	22,098
100,000 +	1,395	1,986	2,809	3,951	5,524
Total	27,901	39,713	56,182	79,013	110,488
Taita-Taveta					
0 - 4,999	830	1,315	2,069	3,237	5,035
5,000 - 9,999	4,151	6,573	10,344	16,184	25,175
10,000 - 14,999	1,660	2,629	4,138	6,473	10,070
15,000 - 19,999	830	1,315	2,069	3,237	5,035
20,000 - 24,999	3,321	5,258	8,275	12,947	20,140
25,000 - 29,999	2,491	3,944	6,207	9,710	15,105
30,000 - 49,999	3,321	5,258	8,275	12,947	20,140
50,000 - 99,999	1,660	2,629	4,138	6,473	10,070
Total	18,265	28,921	45,515	71,208	110,768
Tana River					
10,000 - 14,999	499	688	942	1,282	1,735
15,000 - 19,999	499	688	942	1,282	1,735

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
20,000 - 24,999	499	688	942	1,282	1,735
25,000 - 29,999	1,497	2,063	2,825	3,846	5,206
30,000 - 49,999	3,493	4,813	6,591	8,974	12,148
50,000 - 99,999	2,994	4,125	5,649	7,692	10,412
Total	9,480	13,063	17,890	24,357	32,972
Tharaka-Nithi					
5,000 - 9,999	1,093	1,528	2,122	2,931	4,024
10,000 - 14,999	4,372	6,110	8,488	11,723	16,097
20,000 - 24,999	4,372	6,110	8,488	11,723	16,097
25,000 - 29,999	2,186	3,055	4,244	5,861	8,049
30,000 - 49,999	7,650	10,693	14,855	20,515	28,170
50,000 - 99,999	7,650	10,693	14,855	20,515	28,170
Total	27,322	38,189	53,053	73,269	100,609
Trans Nzoia					
0 - 4,999	6,993	9,945	14,057	19,753	27,596
5,000 - 9,999	15,735	22,377	31,629	44,443	62,092
10,000 - 14,999	8,742	12,432	17,572	24,691	34,496
15,000 - 19,999	8,742	12,432	17,572	24,691	34,496
20,000 - 24,999	5,245	7,459	10,543	14,814	20,697
30,000 - 49,999	6,993	9,945	14,057	19,753	27,596
50,000 - 99,999	5,245	7,459	10,543	14,814	20,697
Total	57,696	82,049	115,974	162,959	227,671
Turkana					
0 - 4,999	2,807	5,627	11,215	22,219	43,767
5,000 - 9,999	4,210	8,441	16,822	33,328	65,651
20,000 - 24,999	2,807	5,627	11,215	22,219	43,767
25,000 - 29,999	5,613	11,255	22,430	44,437	87,534
30,000 - 49,999	4,210	8,441	16,822	33,328	65,651
50,000 - 99,999	5,613	11,255	22,430	44,437	87,534
Total	25,259	50,646	100,934	199,967	393,904
Uasin Gishu					
0 - 4,999	4,897	7,364	11,005	16,351	20,709
5,000 - 9,999	14,691	22,091	33,016	49,054	62,128
10,000 - 14,999	34,280	51,546	77,038	114,459	144,965
15,000 - 19,999	24,486	36,819	55,027	81,756	103,546
20,000 - 24,999	24,486	36,819	55,027	81,756	103,546
30,000 - 49,999	29,383	44,182	66,033	98,108	124,255
50,000 - 99,999	4,897	7,364	11,005	16,351	20,709
Total	137,120	206,184	308,153	457,836	579,858
Vihiga					
0 - 4,999	2,018	2,758	3,746	5,057	6,790

Income band (Ksh)	Households				
	2017	2022	2027	2032	2037
5,000 - 9,999	6,054	8,273	11,237	15,172	20,369
10,000 - 14,999	16,144	22,062	29,965	40,459	54,316
15,000 - 19,999	8,072	11,031	14,982	20,229	27,158
20,000 - 24,999	12,108	16,546	22,473	30,344	40,737
25,000 - 29,999	4,036	5,515	7,491	10,115	13,579
30,000 - 49,999	10,090	13,788	18,728	25,287	33,948
50,000 - 99,999	4,036	5,515	7,491	10,115	13,579
Total	62,559	85,489	116,113	156,778	210,476
Wajir					
5,000 - 9,999	863	1,110	1,419	1,802	2,277
10,000 - 14,999	863	1,110	1,419	1,802	2,277
25,000 - 29,999	1,295	1,665	2,128	2,704	3,416
30,000 - 49,999	2,590	3,330	4,256	5,407	6,831
50,000 - 99,999	2,158	2,775	3,547	4,506	5,693
Total	7,769	9,990	12,768	16,222	20,493
West Pokot					
0 - 4,999	1,694	2,457	3,542	5,076	7,233
5,000 - 9,999	1,694	2,457	3,542	5,076	7,233
10,000 - 14,999	1,271	1,843	2,657	3,807	5,425
15,000 - 19,999	2,118	3,071	4,428	6,345	9,041
20,000 - 24,999	847	1,229	1,771	2,538	3,616
30,000 - 49,999	1,694	2,457	3,542	5,076	7,233
50,000 - 99,999	2,541	3,686	5,313	7,614	10,849
100,000 +	424	614	886	1,269	1,808
Total	12,282	17,813	25,680	36,801	52,439
National total	4,802,180	6,811,026	9,504,675	13,024,655	17,605,654

Source: KPMG survey

Step 7: Based on the 30% housing budget ceiling and the proposed house prices, analyse the income bands that can afford each proposed housing type

In measuring affordability for the Affordable Housing Programme, we took into consideration the Government's proposed house price ranging from Ksh. 600,000 to Ksh. 3 million as set out below.

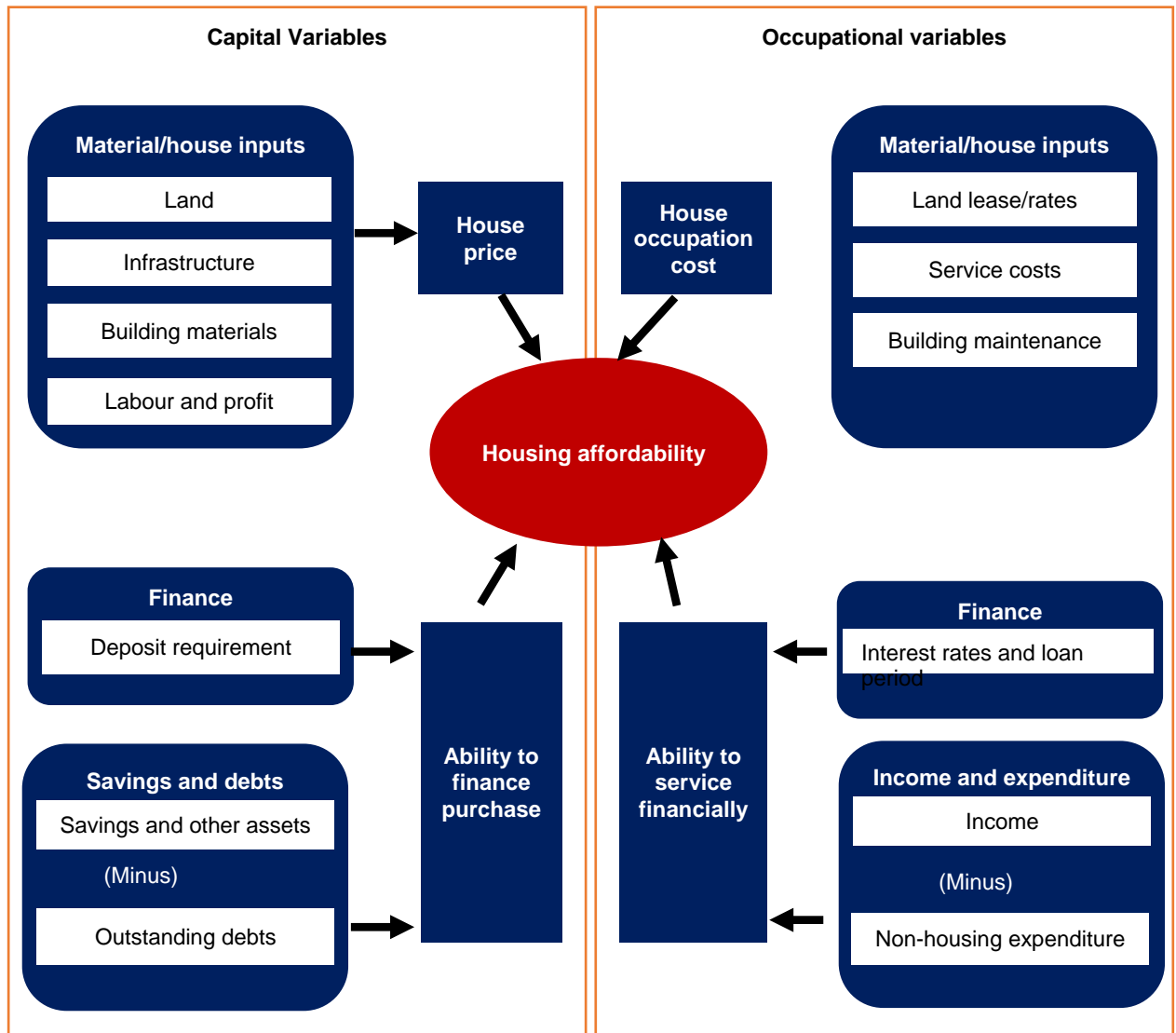
Figure 38: The proposed housing pricing for the Affordable Housing Programme

	1 room Ksh	2 room Ksh	Bedsitter Ksh	1 bedroom Ksh	2 bedroom Ksh	3 bedroom Ksh
Social housing	600,000	1,000,000	n/a	n/a	n/a	n/a
Affordable housing	n/a	n/a	800,000	1,000,000	2,000,000	3,000,000

Source: SDHUD

The ability to afford a house is determined by two factors: capital cost and occupational cost. Capital cost is determined by house price. Occupational cost is determined by land lease rates, service costs, building maintenance and ability to financially service the mortgage.

Figure 39: Basic components of housing affordability



Source: KPMG analysis

Ability to raise a deposit and the legal fees required to purchase a house

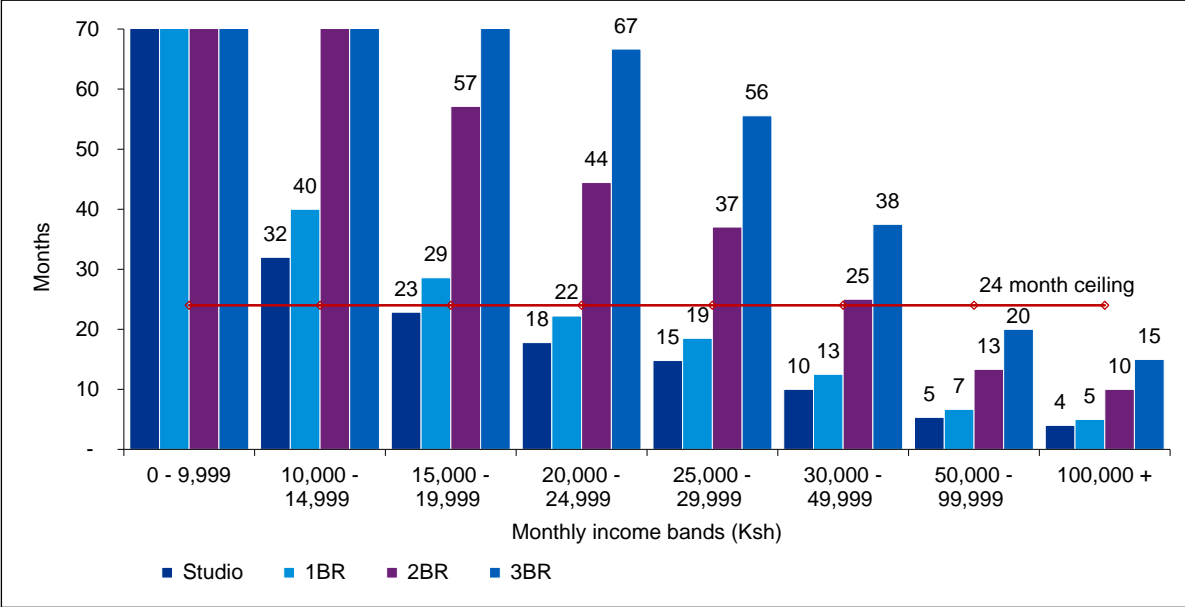
In determining the affordability of the proposed housing types, we analysed the time it will take for a household to save for the non-mortgage costs i.e. deposit and legal fees, assuming a 6.3% interest rate on savings based on the current KCB interest earning account.

Based on how long it will take households in each income band to save towards a 10% deposit and 5% legal fees, we note that households earning less than Ksh 15,000 per month will not be able to save for the deposit and legal fees in the proposed 24 month period.

Households earning more than Ksh 15,000 per month but less than Ksh 20,000 per month will only be able to save for studio apartment in 23 months. This income group will not be able to meet the deposit requirements for any other housing type. Households earning more than Ksh 20,000 per month but less than Ksh 50,000 per month will only be able to save for sufficient deposit for a studio and a one bedroom apartment in the proposed 24 month qualifying period.

Households earning more than Ksh 50,000 per month will be in a position to save for all the four proposed housing units.

Figure 40: Time required to save for 10% deposit and 5% legal fees



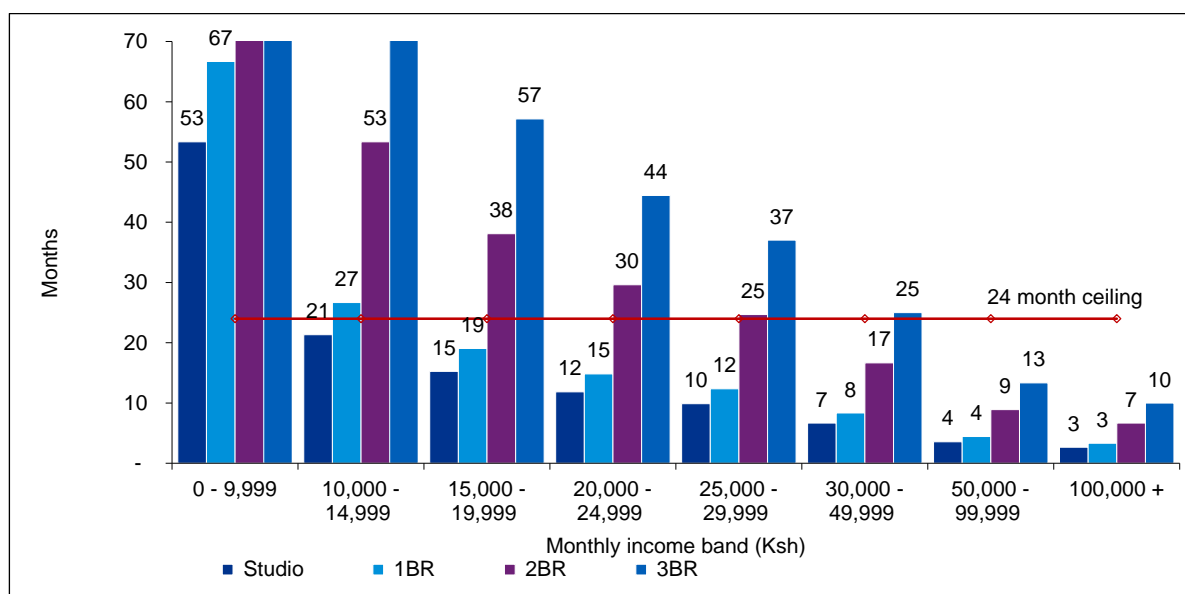
Source: KPMG analysis

Note that we have limited the highest level on the Y-axis to 70 for ease of reading.

Waiving the 5% legal fee requirement, especially for households earning less than Ksh 50,000 per month, improves the types of housing they can be eligible for.

Households earning less than Ksh 10,000 per month are not able to save for any of the proposed housing types given proposed prices despite the waiver of the 5% legal fee requirement. Households earning more than Ksh 10,000 but less than 15,000 are able to save sufficient deposit for only a studio apartment. Households earning more than Ksh 15,000 per month but less than Ksh 30,000 per month are able to save for a studio and one-bedroom but not a two-bedroom apartment or a three-bedroom apartment. Households earning more than Ksh 30,000 per month but less than Ksh 50,000 per month are able to save for the 10% deposit for a studio apartment, one-bedroom apartment and two-bedroom apartment. Households earning more than Ksh 50,000 per month will be able to save for the 10% deposit for all the house types available.

Figure 41: Time required to save for 10% deposit (assuming 5% legal fees is waived)



Source: KPMG analysis

Ability to finance a mortgage on the remainder of the house price

Assuming that the households have raised the requisite deposit and legal fees, we analysed the household's ability to finance the mortgage repayments on 90% of the proposed house price while adhering to the 30% housing budget rule.

We made the following key assumptions in calculating affordability across the income bands:

- The midpoint across all the income bands as the household income on which we have based our calculations.
- A current market mortgage interest rate of 13.5% as the cost of financing a house purchased by the end user.
- GoK will provide subsidies to financial institutions to lower mortgage interest rates to gauge the affordability across the income groups. To show the impact on affordability we have analysed affordability at mortgage interest rates of 8% and 4%.
- We have assumed that 30% of the household's gross income will be spent on housing. This is the percentage provided in the Housing Policy 2016.

Key observations

- At current market mortgage rates of 13.5%, none of the households in the proposed income groups can service a mortgage on a three-bedroom house at a price of Ksh 3 million, i.e. a mortgage of Ksh 2.7 million, being 90% of the proposed house price.
- A household needs to earn a minimum of Ksh 105,000 per month in order to comfortably service a mortgage of Ksh 2.7 million. By lowering the interest rate to 8%, households earning more than Ksh 69,500 per month are able to service a mortgage on a three-bedroom house. Lowering the interest rates further to 4.0% reduces the minimum household income to Ksh 47,600 per month.
- At current rates, only households that earn more than Ksh 70,000 per month can service a mortgage for a two-bedroom house. This is a mortgage for Ksh 1.8 million,

being 90% of the proposed house price of Ksh 2 million. The minimum household income reduces to Ksh 46,400 per month and Ksh 31,700 per month respectively if the interest rate is reduced to 8% and 4% respectively.

- At current rates, only households that earn more than Ksh 35,000 per month can service a Ksh 900,000 mortgage for a one bedroom house, being 90% of the proposed house price of Ksh 1 million. Lowering interest rates to 8% makes a one-bedroom apartment affordable to all households earning more than Ksh 23,200 per month. At 4% interest households earning at least Ksh 15,900 per month are able to service a one-bedroom house mortgage.
- At current rates, only households that earn more than Ksh 28,000 per month can service a mortgage for a studio apartment. This is a mortgage for Ksh 720,000 for a studio apartment, being 90% of the proposed house price of Ksh 800,000. At 8% interest rates, households earning more than Ksh 18,600 are able to service mortgage on a studio apartment. If rates were further reduced to 4% households earning more than Ksh 12,700 per month are able to afford a studio apartment.
- The greater the household income, the greater the breadth of choices. For example, a household earning greater than Ksh 100,000 per month has more housing units that are affordable at 30% or less of their household income. It is unlikely that households in this income range will choose a unit costing less than Ksh 20,000 per month, but the option exists nonetheless. Comparatively, households towards the lower end of the household income has fewer choices.
- At household income levels below Ksh 30,000 per month the cost of living may not allow for a housing budget of 30% of a household's income. This is because the cost of living is not elastic below a certain income level. We assume this level to be Ksh 30,000 per month.

Based on this analysis, the table below shows the maximum house price that each income group can afford.

Table 34: Analysis of the maximum affordable house price across the income bands

Monthly income groups (Ksh)	Median income (Ksh)	Housing budget at 30% (Ksh)	Maximum affordable house price (Ksh)		
			13.5% interest rate	8.0% interest rate	4.0% interest rate
0 - 9,999	5,000	1,500	129,000	194,327	284,150
10,000 - 14,999	12,500	3,750	321,750	485,848	710,418
15,000 - 19,999	17,500	5,250	450,500	680,194	994,597
20,000 - 24,999	22,500	6,750	579,100	874,541	1,278,776
25,000 - 29,999	27,000	8,100	694,900	1,049,473	1,534,565
30,000 - 49,999	40,000	12,000	1,029,400	1,554,755	2,273,401
50,000 - 99,999	75,000	22,500	1,930,300	2,915,182	4,262,652
100,000 +	100,000	30,000	2,573,700	3,886,936	5,683,574

Source: KPMG Analysis

Assumptions: 25 year mortgage on 90% of the house price and housing budget is 30% of the household's income.

The foregoing analysis is valid when the median income is representative of the income group. A second analysis was done that aimed to identify the minimum monthly household

income required for a household to afford the proposed houses in the Affordable Housing Programme.

Table 35: Analysis of the minimum monthly income to afford the proposed houses

Proposed GoK house type	House price (Ksh)	Minimum monthly income (Ksh)		
		13.5% interest rate	8.0% interest rate	4.0% interest rate
Three bedroom	3,000,000	105,000	69,500	47,600
Two bedroom	2,000,000	70,000	46,400	31,700
One bedroom	1,000,000	35,000	23,200	15,900
Bedsitter	800,000	28,000	18,600	12,700

Source: KPMG Analysis

Assumptions: 25 year mortgage on 90% of the house price and housing budget is 30% of the household's income.

The table below shows the affordability matrix for the available houses across the all income bands.

Table 36: Affordability matrix

Income bands (Ksh)	Housing budget (Ksh)	GoK's house price (Ksh)	Affordability of a 25 year mortgage repayment			
			13.5%	8%	4%	0%
100,000	30,000	3Mn	✗	✓	✓	✓
50,000 – 99,999	22,500		✗	✓	✓	✓
	22,500	2M	✓	✓	✓	✓
30,000 – 49,999	12,000		✗	✗	✓	✓
30,000 – 49,999	12,000	1M	✓	✓	✓	✓
25,000 – 29,999	8,100		✗	✓	✓	✓
20,000 – 24,999	6,750		✗	✗	✓	✓
15,000 – 19,999	5,250		✗	✗	✓	✓
10,000 – 14,999	3,750	800K	✗	✗	✗	✓
0 – 9999	1,50		✗	✗	✗	✗

Source: KPMG analysis

Step 8: For each housing type, extract the number of urban tenants in the income bands that can afford to finance the purchase of the proposed houses, based on a 30% housing budget ceiling, using three mortgage rate scenarios

Projected demand for a studio apartment costing Ksh 800,000

The minimum monthly household income required to service a mortgage on a Ksh. 800,000 house at current mortgage interest rates of 13.5% is Ksh. 28,000. We estimate the potential demand for a studio apartment based on this affordability analysis above is 8 million by 2037.

Table 37: Potential housing demand for studio apartment at current market mortgage rates

County	2017	2022	2027	2032	2037
Baringo	6,234	9,569	14,598	22,140	33,386
Bomet	9,453	13,621	19,508	27,774	39,316
Bungoma	27,465	37,941	52,093	71,103	96,496
Busia	4,160	5,616	7,535	10,051	13,330
Elgeyo-Marakwet	3,473	5,058	7,322	10,538	15,080
Embu	9,521	13,625	19,381	27,405	38,531
Garissa	3,715	4,777	6,105	7,757	9,799
Homa Bay	10,185	13,218	17,049	21,862	27,873
Isiolo	6,599	8,560	11,036	12,872	13,647
Kajiado	40,160	63,791	100,713	152,587	198,105
Kakamega	24,219	31,763	41,403	53,650	69,124
Kericho	42,409	63,186	93,570	137,749	173,768
Kiambu	146,259	199,993	238,378	284,130	338,664
Kilifi	67,903	117,872	203,371	348,818	594,868
Kirinyaga	16,515	24,154	35,112	50,740	72,906
Kisii	28,447	39,352	54,107	73,957	100,510
Kisumu	58,873	84,603	111,885	131,417	154,358
Kitui	11,222	15,157	20,347	27,154	36,030
Kwale	26,074	41,098	64,385	100,272	155,271
Laikipia	10,170	15,084	22,235	32,584	47,477
Lamu	3,668	5,568	8,400	12,597	18,785
Machakos	110,527	157,692	207,849	242,380	282,648
Makueni	21,574	30,947	44,122	62,536	88,128
Mandera	5,147	6,619	8,459	10,748	13,578
Marsabit	7,939	10,322	13,339	17,136	21,888
Meru	19,854	28,155	39,685	55,607	77,470
Migori	35,322	51,920	75,854	110,169	156,288
Mombasa	221,261	292,411	386,439	510,703	674,927
Murang'a	20,164	29,151	41,888	59,835	84,983
Nairobi	868,805	1,174,911	1,588,868	2,148,673	2,905,715
Nakuru	128,687	201,271	312,885	425,359	543,765
Nandi	11,442	16,987	25,066	36,769	53,627
Narok	7,366	10,976	16,256	23,933	35,035
Nyamira	8,459	12,931	19,649	29,681	44,578
Nyandarua	17,465	26,161	38,948	57,643	84,825
Nyeri	10,564	15,960	23,966	35,776	53,100

County	2017	2022	2027	2032	2037
Samburu	6,534	9,579	13,958	20,219	29,121
Siaya	14,062	20,015	28,315	39,821	55,684
Taita-Taveta	5,878	9,307	14,647	22,915	35,645
Tana River	7,025	9,680	13,257	18,049	24,433
Tharaka-Nithi	16,087	22,485	31,237	43,140	59,237
Trans Nzoia	12,239	17,404	24,600	34,567	48,294
Turkana	11,843	23,746	47,324	93,757	184,686
Uasin Gishu	34,280	51,546	77,038	114,459	144,965
Vihiga	15,579	21,289	28,915	39,042	52,414
Wajir	5,214	6,704	8,568	10,887	13,753
West Pokot	4,235	6,143	8,855	12,690	18,082
National total	2,184,278	3,077,917	4,288,521	5,893,651	8,034,193

Source: KPMG survey and KPMG analysis

However, if GoK provides an 8% mortgage interest rate then the potential demand for the minimum household income to service a mortgage on a Ksh. 800,000 house will reduce to Ksh. 18,600. Subsequently demand will increase to 12 million studio apartments by 2037, as shown in the table below.

Table 38: Potential housing demand for studio apartment at 8% interest rates

County	2017	2022	2027	2032	2037
Baringo	8,300	12,740	19,437	29,479	44,452
Bomet	14,503	20,898	29,929	42,610	60,319
Bungoma	44,872	61,985	85,107	116,164	157,650
Busia	5,574	7,525	10,097	13,468	17,862
Elgeyo-Marakwet	8,728	12,712	18,403	26,486	37,900
Embu	14,658	20,977	29,839	42,193	59,322
Garissa	11,200	14,402	18,406	23,386	29,543
Homa Bay	22,173	28,775	37,116	47,593	60,679
Isiolo	8,331	10,807	13,933	16,251	17,230
Kajiado	82,280	130,697	206,345	312,624	405,884
Kakamega	32,780	42,989	56,036	72,613	93,555
Kericho	55,498	82,688	122,450	180,265	227,402
Kiambu	238,657	326,337	388,971	463,628	552,613
Kilifi	76,029	131,978	227,708	390,562	666,056
Kirinyaga	23,131	33,830	49,177	71,066	102,111
Kisii	42,308	58,527	80,472	109,993	149,485
Kisumu	121,077	173,992	230,101	270,270	317,451
Kitui	24,985	33,745	45,300	60,454	80,215
Kwale	31,977	50,402	78,960	122,972	190,421
Laikipia	17,129	25,404	37,448	54,878	79,960
Lamu	5,885	8,933	13,477	20,211	30,138
Machakos	170,023	242,576	319,732	372,850	434,794
Makueni	27,449	39,373	56,136	79,564	112,124
Mandera	9,441	12,140	15,516	19,713	24,903

County	2017	2022	2027	2032	2037
Marsabit	9,412	12,237	15,814	20,316	25,949
Meru	24,976	35,418	49,922	69,951	97,455
Migori	35,322	51,920	75,854	110,169	156,288
Mombasa	311,186	411,252	543,495	718,262	949,229
Murang'a	28,962	41,870	60,163	85,941	122,061
Nairobi	1,131,889	1,530,687	2,069,993	2,799,314	3,785,596
Nakuru	183,941	287,690	447,227	607,993	777,239
Nandi	28,813	42,775	63,119	92,589	135,042
Narok	12,563	18,720	27,724	40,818	59,752
Nyamira	15,370	23,498	35,705	53,934	81,003
Nyandarua	23,206	34,759	51,749	76,589	112,705
Nyeri	30,212	45,644	68,539	102,314	151,858
Samburu	9,177	13,454	19,605	28,398	40,901
Siaya	21,930	31,214	44,159	62,104	86,842
Taita-Taveta	11,092	17,563	27,640	43,242	67,266
Tana River	8,662	11,935	16,346	22,254	30,126
Tharaka-Nithi	21,858	30,551	42,442	58,615	80,487
Trans Nzoia	20,630	29,337	41,467	58,267	81,405
Turkana	204,050	299,648	435,887	636,933	939,513
Uasin Gishu	58,766	88,365	132,065	196,216	248,511
Vihiga	33,176	45,335	61,575	83,141	111,617
Wajir	6,043	7,770	9,931	12,617	15,939
West Pokot	5,844	8,476	12,219	17,512	24,952
National total	3,334,065	4,704,551	6,542,737	8,956,779	12,133,804

Source: KPMG survey and KPMG analysis

Projected demand for a one bedroom apartment costing Ksh 1,000,000

Based on the analysis on affordability, we estimated that the minimum household income to service a mortgage on a Ksh. 1 million house is Ksh. 35,000 at current interest rates of 13.5%. We estimate the potential demand for a one bedroom apartment to be 6.7 million units by 2027, as shown below.

Table 39: Potential housing demand for one bedroom apartment at current market mortgage rates

County	2017	2022	2027	2032	2037
Baringo	5,082	7,801	11,901	18,049	27,217
Bomet	8,080	11,642	16,673	23,738	33,604
Bungoma	20,831	28,776	39,510	53,928	73,187
Busia	3,640	4,914	6,593	8,795	11,664
Elgeyo-Marakwet	3,038	4,426	6,407	9,221	13,195
Embu	7,365	10,540	14,992	21,199	29,805
Garissa	3,119	4,011	5,126	6,512	8,227
Homa Bay	9,094	11,801	15,222	19,520	24,887
Isiolo	5,255	6,816	8,788	10,250	10,868
Kajiado	32,350	51,387	81,129	122,916	159,583

County	2017	2022	2027	2032	2037
Kakamega	21,429	28,104	36,633	47,470	61,161
Kericho	34,905	52,006	77,014	113,376	143,022
Kiambu	123,475	168,839	201,245	239,870	285,909
Kilifi	60,260	104,604	180,478	309,552	527,905
Kirinyaga	13,196	19,299	28,055	40,542	58,253
Kisii	24,568	33,986	46,729	63,871	86,804
Kisumu	43,970	63,186	83,563	98,150	115,284
Kitui	8,382	11,320	15,197	20,280	26,910
Kwale	21,891	34,504	54,055	84,185	130,360
Laikipia	7,908	11,728	17,288	25,335	36,914
Lamu	3,465	5,259	7,933	11,898	17,741
Machakos	85,937	122,608	161,606	188,454	219,763
Makueni	18,528	26,577	37,892	53,705	75,684
Mandera	4,001	5,144	6,575	8,353	10,553
Marsabit	6,710	8,724	11,273	14,483	18,499
Meru	16,876	23,932	33,732	47,265	65,849
Migori	31,397	46,151	67,425	97,927	138,921
Mombasa	181,897	240,389	317,689	419,845	554,852
Murang'a	17,414	25,176	36,175	51,675	73,394
Nairobi	733,727	992,240	1,341,836	1,814,605	2,453,945
Nakuru	97,403	152,341	236,821	321,952	411,573
Nandi	9,634	14,303	21,105	30,959	45,154
Narok	6,258	9,324	13,810	20,332	29,763
Nyamira	8,157	12,470	18,947	28,621	42,986
Nyandarua	14,899	22,317	33,225	49,173	72,361
Nyeri	8,583	12,967	19,472	29,067	43,143
Samburu	5,419	7,944	11,575	16,767	24,150
Siaya	10,812	15,389	21,770	30,617	42,814
Taita-Taveta	4,151	6,573	10,344	16,183	25,174
Tana River	5,613	7,734	10,593	14,422	19,523
Tharaka-Nithi	13,388	18,712	25,996	35,901	49,298
Trans Nzoia	10,490	14,918	21,086	29,629	41,394
Turkana	8,770	17,585	35,046	69,433	136,772
Uasin Gishu	26,934	40,500	60,529	89,931	113,899
Vihiga	11,604	15,857	21,537	29,080	39,040
Wajir	4,100	5,273	6,739	8,562	10,816
West Pokot	3,812	5,528	7,970	11,421	16,274
National total	1,807,813	2,545,623	3,545,299	4,877,021	6,658,090

Source: KPMG survey and KPMG analysis

However, if GoK provides an 8% mortgage interest rate then the potential demand for a one bedroom will increase to 9.4 million units by 2037, as shown in the table below.

Table 40: Potential housing demand for one bedroom apartment at 8% interest rates

County	2017	2022	2027	2032	2037
Baringo	6,776	10,401	15,868	24,066	36,290
Bomet	11,554	16,648	23,842	33,945	48,052
Bungoma	36,291	50,133	68,833	93,952	127,504
Busia	4,534	6,121	8,213	10,955	14,529
Elgeyo-Marakwet	5,139	7,485	10,836	15,595	22,316
Embu	12,208	17,470	24,850	35,140	49,405
Garissa	6,154	7,913	10,114	12,850	16,233
Homa Bay	12,803	16,615	21,432	27,482	35,038
Isiolo	7,236	9,386	12,101	14,114	14,964
Kajiado	53,006	84,197	132,930	201,397	261,476
Kakamega	26,888	35,262	45,964	59,562	76,740
Kericho	49,565	73,848	109,359	160,993	203,090
Kiambu	171,426	234,406	279,396	333,022	396,939
Kilifi	72,312	125,525	216,574	371,464	633,489
Kirinyaga	20,034	29,300	42,593	61,551	88,440
Kisii	33,100	45,789	62,958	86,054	116,951
Kisumu	81,455	117,054	154,801	181,825	213,566
Kitui	15,527	20,971	28,152	37,569	49,850
Kwale	29,772	46,926	73,515	114,492	177,290
Laikipia	12,700	18,836	27,766	40,690	59,287
Lamu	4,255	6,459	9,743	14,612	21,789
Machakos	135,644	193,526	255,081	297,458	346,877
Makueni	24,813	35,593	50,746	71,924	101,358
Mandera	6,721	8,642	11,045	14,033	17,728
Marsabit	8,738	11,361	14,682	18,861	24,091
Meru	20,926	29,675	41,827	58,608	81,652
Migori	35,322	51,920	75,854	110,169	156,288
Mombasa	260,059	343,685	454,201	600,255	793,274
Murang'a	22,143	32,012	45,999	65,707	93,323
Nairobi	976,249	1,320,211	1,785,360	2,414,396	3,265,060
Nakuru	156,079	244,113	379,485	515,900	659,509
Nandi	18,140	26,931	39,739	58,293	85,021
Narok	9,249	13,782	20,411	30,051	43,990
Nyamira	10,633	16,255	24,700	37,311	56,037
Nyandarua	19,557	29,294	43,612	64,547	94,984
Nyeri	16,267	24,575	36,903	55,088	81,763
Samburu	7,633	11,191	16,307	23,621	34,021
Siaya	18,247	25,971	36,742	51,673	72,257
Taita-Taveta	8,667	13,724	21,598	33,790	52,562
Tana River	8,163	11,248	15,404	20,972	28,390
Tharaka-Nithi	19,060	26,640	37,009	51,111	70,183
Trans Nzoia	14,126	20,089	28,395	39,898	55,742
Turkana	16,446	32,976	65,718	130,198	256,470
Uasin Gishu	43,092	64,796	96,841	143,881	182,228

County	2017	2022	2027	2032	2037
Vihiga	22,520	30,774	41,798	56,436	75,766
Wajir	6,043	7,770	9,931	12,617	15,939
West Pokot	4,540	6,585	9,492	13,604	19,384
National total	2,561,811	3,614,083	5,038,720	6,921,730	9,427,136

Source: KPMG survey and KPMG analysis

Projected demand for a one bedroom apartment costing Ksh 2,000,000

Based on the analysis on affordability above and a 13.5% mortgage interest rate, we estimate the potential demand for a two bedroom apartment to be 1.4 million units, as shown below.

Table 41: Potential housing demand for two bedroom apartment at current market mortgage rates

County	2017	2022	2027	2032	2037
Baringo	1,016	1,560	2,380	3,610	5,444
Bomet	2,020	2,911	4,168	5,935	8,401
Bungoma	3,703	5,116	7,024	9,587	13,011
Busia	832	1,123	1,507	2,010	2,666
Elgeyo-Marakwet	695	1,012	1,465	2,108	3,016
Embu	1,885	2,698	3,838	5,427	7,630
Garissa	832	1,069	1,367	1,737	2,194
Homa Bay	2,328	3,021	3,897	4,997	6,371
Isiolo	764	992	1,278	1,491	1,581
Kajiado	3,570	5,670	8,952	13,564	17,610
Kakamega	5,972	7,833	10,210	13,230	17,046
Kericho	8,726	13,002	19,254	28,345	35,756
Kiambu	25,492	34,858	41,548	49,523	59,028
Kilifi	17,906	31,083	53,629	91,984	156,867
Kirinyaga	2,815	4,117	5,985	8,649	12,428
Kisii	5,172	7,155	9,838	13,447	18,275
Kisumu	3,703	5,321	7,037	8,266	9,708
Kitui	706	953	1,280	1,708	2,266
Kwale	5,838	9,201	14,415	22,450	34,764
Laikipia	973	1,443	2,128	3,118	4,543
Lamu	1,141	1,732	2,613	3,919	5,844
Machakos	10,577	15,091	19,891	23,195	27,049
Makueni	4,941	7,087	10,105	14,322	20,183
Mandera	800	1,029	1,315	1,671	2,111
Marsabit	1,748	2,272	2,936	3,772	4,818
Meru	3,177	4,505	6,350	8,897	12,396
Migori	7,850	11,538	16,857	24,482	34,731
Mombasa	33,582	44,381	58,652	77,512	102,437
Murang'a	3,666	5,300	7,616	10,879	15,452
Nairobi	164,436	222,371	300,719	406,672	549,954
Nakuru	14,168	22,159	34,448	46,831	59,867

County	2017	2022	2027	2032	2037
Nandi	2,964	4,401	6,494	9,526	13,894
Narok	1,430	2,131	3,157	4,647	6,803
Nyamira	2,900	4,434	6,737	10,177	15,284
Nyandarua	3,406	5,101	7,594	11,240	16,540
Nyeri	1,056	1,596	2,397	3,578	5,310
Samburu	1,057	1,550	2,259	3,272	4,712
Siaya	2,232	3,177	4,495	6,321	8,839
Taita-Taveta	664	1,052	1,655	2,589	4,028
Tana River	1,198	1,650	2,260	3,077	4,165
Tharaka-Nithi	3,060	4,277	5,942	8,206	11,268
Trans Nzoia	2,098	2,984	4,217	5,926	8,279
Turkana	2,245	4,502	8,972	17,775	35,014
Uasin Gishu	1,959	2,946	4,402	6,541	8,284
Vihiga	1,614	2,206	2,997	4,046	5,432
Wajir	863	1,110	1,419	1,803	2,277
West Pokot	1,016	1,474	2,125	3,046	4,340
National total	370,801	522,197	729,824	1,015,106	1,407,918

Source: KPMG survey and KPMG analysis

However, if GoK provides an 8% mortgage interest rate the minimum monthly household income decreases from Ksh. 70,000 to Ksh. 46,400. This results in demand of 4.3 million two-bedroom units by 2037.

Table 42: Potential housing demand for two bedroom apartment at 8% interest rates

County	2017	2022	2027	2032	2037
Baringo	3,151	4,836	7,378	11,190	16,874
Bomet	5,777	8,324	11,921	16,973	24,026
Bungoma	12,035	16,625	22,827	31,157	42,284
Busia	2,454	3,313	4,446	5,930	7,864
Elgeyo-Marakwet	2,049	2,984	4,320	6,217	8,897
Embu	5,350	7,656	10,890	15,399	21,650
Garissa	2,329	2,994	3,827	4,863	6,143
Homa Bay	6,606	8,572	11,057	14,179	18,077
Isiolo	2,713	3,520	4,538	5,292	5,611
Kajiado	14,545	23,105	36,477	55,265	71,752
Kakamega	16,490	21,626	28,189	36,528	47,064
Kericho	24,957	37,183	55,064	81,062	102,258
Kiambu	78,066	106,746	127,234	151,655	180,762
Kilifi	48,483	84,160	145,205	249,054	424,732
Kirinyaga	8,515	12,454	18,104	26,162	37,591
Kisii	15,723	21,750	29,905	40,876	55,552
Kisumu	17,586	25,272	33,422	39,256	46,109
Kitui	3,352	4,528	6,078	8,111	10,763
Kwale	16,345	25,763	40,361	62,857	97,334
Laikipia	3,747	5,557	8,191	12,004	17,490

County	2017	2022	2027	2032	2037
Lamu	3,000	4,553	6,869	10,302	15,362
Machakos	40,718	58,093	76,571	89,292	104,127
Makueni	13,834	19,844	28,292	40,099	56,509
Mandera	2,480	3,189	4,076	5,179	6,543
Marsabit	4,931	6,411	8,285	10,643	13,594
Meru	10,085	14,302	20,159	28,247	39,353
Migori	22,449	32,997	48,208	70,016	99,327
Mombasa	107,455	142,008	187,673	248,022	327,776
Murang'a	11,145	16,112	23,152	33,071	46,970
Nairobi	488,500	660,613	893,366	1,208,126	1,633,785
Nakuru	50,292	78,659	122,279	166,235	212,509
Nandi	7,944	11,794	17,403	25,529	37,234
Narok	4,219	6,287	9,311	13,709	20,068
Nyamira	7,468	11,416	17,347	26,204	39,356
Nyandarua	10,046	15,048	22,403	33,156	48,791
Nyeri	4,067	6,144	9,226	13,773	20,442
Samburu	3,309	4,851	7,069	10,240	14,748
Siaya	6,835	9,729	13,764	19,357	27,068
Taita-Taveta	2,258	3,575	5,627	8,803	13,694
Tana River	3,622	4,991	6,836	9,307	12,598
Tharaka-Nithi	9,027	12,617	17,528	24,207	33,240
Trans Nzoia	6,504	9,249	13,073	18,369	25,664
Turkana	6,371	12,774	25,457	50,435	99,349
Uasin Gishu	10,185	15,315	22,889	34,007	43,070
Vihiga	5,852	7,997	10,861	14,665	19,688
Wajir	2,624	3,374	4,313	5,479	6,922
West Pokot	2,846	4,128	5,950	8,528	12,151
National total	1,138,338	1,603,041	2,237,423	3,099,030	4,272,773

Source: KPMG survey and KPMG analysis

Projected demand for a three bedroom apartment costing Ksh 3,000,000

Based on the analysis on affordability, the minimum income required for a household to service a mortgage on a three bedroom house selling for Ksh 3 million at current interest rates is Ksh. 105,000 per month. The target group of households earning less than Ksh 100,000 per month will not be able to afford a three bedroom apartment at this price and interest rates.

There will be no demand from households earning less than Ksh. 100,000 for a Ksh. 3 million house at current mortgage interest rates if the assumptions of 30% housing budget are to be adhered to.

However, if GoK provides an 8% mortgage interest rate, the minimum household income reduces to Ksh. 69,500 per month. Subsequently potential demand for a three bedroom will be 1.4 million units as shown in the table below.

Table 43: Potential housing demand for three bedroom apartment at 8% interest rates

County	2017	2022	2027	2032	2037
Baringo	991	1,521	2,321	3,520	5,308
Bomet	1,969	2,838	4,064	5,786	8,191
Bungoma	3,611	4,988	6,849	9,348	12,686
Busia	811	1,095	1,469	1,960	2,599
Elgeyo-Marakwet	677	986	1,428	2,055	2,941
Embu	1,838	2,631	3,742	5,291	7,440
Garissa	811	1,043	1,333	1,693	2,139
Homa Bay	2,270	2,946	3,800	4,872	6,212
Isiolo	745	967	1,246	1,454	1,541
Kajiado	3,481	5,529	8,729	13,224	17,169
Kakamega	5,823	7,637	9,954	12,899	16,619
Kericho	8,508	12,677	18,773	27,636	34,863
Kiambu	24,855	33,987	40,510	48,285	57,552
Kilifi	17,459	30,306	52,288	89,684	152,945
Kirinyaga	2,745	4,014	5,836	8,433	12,117
Kisii	5,043	6,976	9,592	13,111	17,818
Kisumu	3,610	5,188	6,861	8,059	9,466
Kitui	688	929	1,248	1,665	2,209
Kwale	5,692	8,971	14,055	21,889	33,895
Laikipia	949	1,407	2,075	3,040	4,430
Lamu	1,113	1,689	2,548	3,821	5,698
Machakos	10,313	14,713	19,393	22,615	26,372
Makueni	4,817	6,910	9,852	13,964	19,678
Mandera	780	1,003	1,282	1,629	2,058
Marsabit	1,704	2,215	2,863	3,678	4,698
Meru	3,097	4,392	6,191	8,675	12,086
Migori	7,653	11,250	16,435	23,870	33,863
Mombasa	32,742	43,271	57,186	75,574	99,876
Murang'a	3,575	5,168	7,426	10,607	15,065
Nairobi	160,325	216,812	293,201	396,505	536,206
Nakuru	13,814	21,605	33,587	45,660	58,370
Nandi	2,890	4,291	6,332	9,288	13,546
Narok	1,395	2,078	3,078	4,531	6,633
Nyamira	2,828	4,323	6,569	9,922	14,902
Nyandarua	3,320	4,974	7,405	10,959	16,127
Nyeri	1,030	1,556	2,337	3,488	5,177
Samburu	1,031	1,511	2,202	3,190	4,594
Siaya	2,176	3,098	4,382	6,163	8,618
Taita-Taveta	648	1,025	1,614	2,525	3,927
Tana River	1,168	1,609	2,203	3,000	4,061

County	2017	2022	2027	2032	2037
Tharaka-Nithi	2,984	4,170	5,793	8,001	10,987
Trans Nzoia	2,046	2,909	4,112	5,778	8,072
Turkana	2,189	4,389	8,748	17,331	34,139
Uasin Gishu	1,910	2,872	4,292	6,377	8,077
Vihiga	1,574	2,151	2,922	3,945	5,296
Wajir	842	1,082	1,383	1,757	2,220
West Pokot	991	1,437	2,072	2,970	4,231
National total	361,531	509,142	711,578	989,729	1,372,720

Source: KPMG survey and KPMG analysis

7.2 Key findings and KPMG recommendations

The housing units provided under the Affordable Housing Programme should be adequate for the buyers. For housing to be adequate, it must, at a minimum, meet the following criteria:

- **Security of tenure:** housing is adequate if it offers its occupants a degree of tenure security which guarantees legal protection against forced evictions, harassment and other threats.
- **Availability of services, materials, facilities and infrastructure:** housing is adequate if its occupants have safe drinking water, adequate sanitation, and energy for cooking, heating, lighting, food storage and refuse disposal.
- **Affordability:** housing is adequate if its cost does not threaten or compromise the occupants' enjoyment of other human rights. KPMG recommends that the cost of the housing to be provided not exceed 30% of the household's gross income upto a ceiling of Ksh 30,000.
- **Habitability:** housing is adequate if it guarantees physical safety or provides adequate space, as well as protection against the cold, damp, heat, rain, wind, other threats to health and structural hazards. This includes sufficient living area, wherein not more than three occupants share the same room. KPMG recommends that at a minimum the parents should have a separate sleeping room. Furthermore, the household should have a provision to separate their children's rooms by gender at the age of 10 years.
- **Accessibility:** housing is not adequate if the specific needs of disadvantaged and marginalised groups are not taken into account. KPMG recommends that the allocation be intentionally diversified for different tribes, races, and cultures to live together in any one project.
- **Location:** housing is not adequate if it is far removed from employment opportunities, health-care services, schools, childcare centres and other social facilities, or if located in polluted or dangerous areas. KPMG recommends that accessibility to project sites be prioritised and delivered ahead of occupation.
- **Cultural adequacy:** housing is not adequate if it does not respect and take into account the expression of cultural identity. KPMG recommends that cultural diversity be taken into consideration in the architectural designs and that provisions be made to accommodate the different cultures.
- **Legal fee:** Waive the 5% legal fee requirement for households earning less than Ksh 50,000.
- **Floor size:** Define the minimum floor size for each of the house types to avoid developers constructing unacceptably small sized houses.

8 Monitoring and Evaluation Framework

It is imperative the GoK through its appointed agency closely monitors and evaluates the performance of the Affordable Housing Programme. GoK may also need to consider instilling a regulator to ensure the appointed agency and the Affordable Housing Programme are compliant with the laws of Kenya.

The role of the regulator could include the following:

- Promotion of the development and awareness of the affordable housing programme;
- Provision of advice and support in the development of policy for the housing sector
- Promotion of an enabling environment for the growth and development of the housing sector;
- Assistance where requested, in the process of the designation of restructuring zones

Monitoring involves collecting, analysing, and reporting data on inputs, activities, outputs, outcomes and impacts as well as external factors, in a way that supports effective management. Monitoring aims to provide decision makers and other stakeholders with regular feedback on progress in implementation and results and early indicators of challenges requiring intervention¹⁶.

Evaluation is a time-bound and periodic exercise that seeks to provide credible and useful information to answer specific questions to guide decision making by staff, managers and policy makers. Evaluations may assess relevance, efficiency, effectiveness, impact and sustainability.

The M&E framework proposed is focused on outcomes that KPMG considers to be the most material and measurable. The framework includes details for each KPI, possible approaches to measuring performance, including data sources, suggested frequency of monitoring and the baseline against which progress should be measured.

KPMG has suggested the following as key performance indicators (KPIs) that should be monitored on an ongoing basis when the Affordable Housing Programme is operational.

Table 44: Affordable Housing Programme Performance Indicators

KPIs	Data source	Frequency of measurement
Number of applications for housing received from targeted population	Affordable Housing Programme Management Team	Annually
Number and/or percentage of low-income families housed in affordable, well maintained units	Affordable Housing Programme Management Team	Annually
Monetary value of housing subsidies allocated to low income households	Programme budget / financial records	Annually
Number of legislative policies passed to enable access to finance in the housing sector	National government records	Annually

¹⁶ Policy framework for the Government-wide monitoring and evaluation system

KPIs	Data source	Frequency of measurement
Increase in volume of mortgage loans granted by commercial banks to households in the affordable housing market	Annual reports of Commercial banks and the Central Bank of Kenya	Annually
Number and/or percentage of residents rating their feeling of safety in and around their homes as satisfactory.	Tenant satisfaction survey	Annually
Number of homeowners/ tenants satisfied with application process and other processes in obtaining affordable housing; satisfaction with conditions and maintenance of housing units; number of complaints received and satisfactorily resolved	Tenant satisfaction survey	Annually
Average number of months between submission of application by interested households and approval and allocation of housing	Affordable Housing Programme Management Team	Annually
Different types of houses built annually i.e. temporary houses, semi-permanent houses and permanent houses.	Affordable Housing Programme Management Team	Annually
Developers ability to implement phase milestones as agreed with Government	Affordable housing programme management team	As agreed with developer
Participation of county local labour in the construction of the houses	Affordable housing programme management team	Annually
Participation of county local suppliers in the construction of the houses	Affordable housing programme management team	Annually
Actual construction costs and delivery times against pre-construction budgets and programme timescales	Affordable housing programme management team	Annually

Source: The Urban Institute and KPMG Analysis

9 Legal analysis

9.1 Introduction to legal scope

This section of the report details legal considerations on key interventions proposed to encourage private sector engagement in development of affordable housing from a legal and regulatory perspective. The following documents have been reviewed based on versions availed on 23 August 2018:

- The Development Framework Guidelines;
- The proposed offtake agreement for housing units constructed through the National Housing Development Fund (NHDF);
- The proposed Early Works Agreement for performance of early works on selected sites in collaboration with suitable government agencies;
- The proposed Framework Agreement for developers and contractors;
- The proposed Commitment Agreement; and
- The proposed letter of support.

The development of these documents is still ongoing at the time of submitting this report. The recommendations are for SDHUD's consideration in finalising these documents. As part of the ongoing development of these documents we note the need for ensuring consistency with the financial structure that is approved for implementation.

9.2 Review of development framework guidelines

Development Framework Guidelines of July, 2018 (the Guidelines) is a document that gives a guide on the implementation of the affordable housing project. The guidelines outline the expected and/or proposed source of funds for the project and the parties that are required for implementation of the project.

We have reviewed the guidelines and wish to comments as follows:

Escrow Agreement (clause 2.1.1) – The escrow agreement should not only govern the commitment fee but all the funds that are deployed with respect to the development. The management of the escrow account can be left to the developer, but it is important for the contracting authority to have sight of the funds as well as the application of the same to ensure that the development is constructed in accordance to the plan. Apart from that, the purchase price with respect to the units should also be deposited in the escrow account for purposes of accountability.

Approvals procured by GOK (clause 2.3.3) – It should be clearly indicated who shall cater for the necessary/applicable approval fees. It is our considered opinion that this could be one of the incentives offered by the government in facilitating the development of affordable houses by not only fast-tracking the government approval fees but waiving the same or discounting the fees with respect to affordable housing.

Facilities management (clause 2.3.8) – We note that the guidelines provide that the facilities management will initially be done by the SPV to be established and later on be handed over to a management company. We have also noted the establishment of a sinking fund that will cater for the expenses of running of the management company. The same should clearly set out what portion if any of the service fee will be applied towards the urban management of the development. This will include the provision of services like garbage collection, cleaning of the common areas and street lighting. It will also be important for the fund to establish what portion if any will be applied towards the management of the infrastructure within the development e.g. the maintenance and repair of roads. This will ensure that disputes in relation to maintenance of infrastructure in the long term are reduced as they are cost intensive. Apart from this, the same can be structured as a business to be sold off to a third party entity to run the same at a profit.

We are also of the opinion that the agreement should provide clearly that the management of the development will only be handed over upon the sale and registration of all the leases with respect to the units in the development. The minimum qualification of a managing agent should also be provided to ensure that the same is a professional entity with the ability to run the facilities management.

Land Owner Engagement Process (clause 4.1.1) – For the publicly owned land, it is important to include a step on the necessary approvals from the public entity involved in accordance to the requisite legislative provisions. For example, approval from the National Land Commission and approval of the county assembly for county land.

There should also be a provision for signing of legal agreements as the last step.

Site identification and compliance checks (clause 4.1.2) – We suggest that the following documents should be added to the Land Ownership documents:

1. An official search confirming the ownership of the property; and
2. A copy of the Deed Plan or Registry Index Map depending on the regime under which the title was issued.

Risk Identification and Allocation (clause 4.2.1) – One of the risks that may hamper the delivery of the project is with respect to the resettlement of any occupiers of the property and the financial as well as political impact of the same. This should be factored into the risk matrix.

Statutory Authorities approvals

We appreciate that the intention to have one stop shop would introduce efficiency in completion of the project. We note that it is possible to have one stop shop for all the county approvals for the reason that the county has one centre of authority that makes it easy to consolidate issuance of permits. We note that some approvals such as the National Construction Authority approval are provided for under statutes and in the event that such an approval will be granted under the proposed one stop shop, the proposal may necessitate amendments of the statute. We therefore suggest that the approvals that should be granted under the one stop shop should be the approvals required from the county Governments as it is practical for the county Government to issue all the approvals under one roof. In the alternative, the necessary amendments should be made to the law to allow for the one-stop shop. This can be incorporated in the digital platform of e-citizen that has already been established and operationalized.

Primary function of the Housing Portal (clause 8.1) – We suggest that the second function be amended to read to register individual “qualified” for affordable housing and not “looking” for affordable housing as our understanding is that affordable housing program targets individuals with low income and not any individual looking for an affordable house.

Step – in rights

We would propose for the guidelines to provide that the government shall reserve the right to step-in, either by itself or by appointment of a third party, if there is non-performance or breach of the obligations by the developer. This will ensure that the ultimate goal of delivery of the affordable houses is met.

9.3 Related legal documents

9.3.1 Offtake agreement

We understand that this is a proposed draft Agreement that the Government through NHC and the developers who will be awarded tenders for the construction of affordable housing will enter into to guarantee disposal of the complete units.

Definitions

Bankruptcy event should be amended to read insolvency event as the bankruptcy legislation was repealed.

Scope

Clause 2.1.1 – It is mandatory for the Developer to enter into the Project Agreements as they are the foundational agreements that would necessitate the off-take agreement. Accordingly, the same should not be made voluntary.

Clause 2.1.2 – Please note that the clause is incomplete as drafted. It should be amended to read: “*The Developer will undertake*”:

Clause 2.3 – there should be an automatic extension of the period within which the off-taker undertakes to perform their obligations. This will ensure that the government is protected in the event that there is changes in legislation etc.

Conditions precedent and effective date

Clause 3.1.5 – the agreement should provide for an alternative appointment of the independent appraiser in the event that the parties cannot mutually agree on the appointment. This is to prevent having a dead-lock.

Clause 3.2 – the obligation by the developer to fulfil the conditions precedent should not be pegged on the Developer’s “capacity” to fulfil the same but rather their obligations as encapsulated in the various project agreements. Anything beyond the control of the developer would be captured under the force majeure clause. Accordingly, this clause should be amended to delete the conditionality.

Clause 3.5 – the Completion Certificate should be defined to avoid confusion with the completion certificate issued by other entities.

Clause 6.2 – The clause is vague as drafted, we suggest that the clause should be amended to read:

“During this period, it is agreed that upon possession by the purchasers of Housing Units from the offtaker the purchasers shall have the opportunity to notify the Developer, through the offtaker of any latent defects which the developer will be obliged to rectify.”

We would also propose that the defects liability should be extended to structural liability which should be for 12 years.

Clause 7.1 – The offtaker is not purchasing all the units but rather, only those units that remain unsold upon the lapse of the 5 year period. This should be provided clearly in clause 7.1 or the clause should be linked to clause 7.2 to prevent any ambiguities.

It is also necessary to provide that the developer shall use their best endeavors to ensure that the units have been sold within the 5 year period. Accordingly, a good sales and marketing strategy should be one of the key component of any successful bidder.

Clause 10.1.6 – We would propose that the provision of political events as a force majeure event be qualified by the provision of the letter of comfort as waters down considerably the effect of the agreement due to the fact that government is always affected by political events.

Clause 11.1.5 – Change of control should be included specifically as an event of default.

Clause 11.7.1 – The interest accruing on the purchase price is at the default rate. The ‘Interest Rate’ as provided in that clause is ambiguous and hasn’t been provided for under the definitions. We propose that the reference to an interest rate be deleted.

Clause 12.2 – We note that the clause only protects the Developer for losses suffered and not the offtaker. We suggest that the clause be amended to read:

“Notwithstanding clause 12.1 but subject to clause 11.8, each party shall be responsible for and shall indemnify the other party against claims in respect of, loss of or damage to persons or property incurred by the party who has suffered a loss and its employees and agents resulting from the act, omission or negligence of the other party in the performance of or otherwise in connection with this agreement.”

Clause 14.2 – We note that the clause refers to the Offtake Agreement as a letter. We recommend that all reference to letter should be amended to Agreement.

Clause 14.3 – The clause is unclear as originally drafted. We therefore suggest that the clause be drafted as follows for clarity:

“If the dispute has not been settled pursuant to mediation as contemplated in Clause 14.2 (mediation) within thirty (30) days from the dispute date, such dispute shall be referred to arbitration which shall be conducted in accordance with the UNCITRAL Arbitration Rules;”

Clause 14.3 – The clause refers to the Offtaker Agreement as a letter. We suggest that reference to letter should be amended to Agreement.

Clause 15.1 – As provided above, we propose that a change in control of the developer should be included in the definition of an assignment.

9.3.2 Development framework agreement

Description of the parties:

The National Housing Corporation should be described as:

“A state corporation established under the Housing Act Cap 117 Law of Kenya for the purposes hereof of Post Office Box Number (Hereinafter called “NHC” which expression shall where the context so admits include its successors in title and assigns) of the one part;

Framework operating principles (Clause 4)

We note that NHC will not be the registered proprietor of the parcels of land that will be used for implementation of the affordable housing programme. We are therefore of the opinion that the clause should redrafted to read:

“The Government whose contracting authority is NHC will contribute land whose title is in its name, the County Government’s name or the name of a parastatal.”

It should also be clear how the land shall be contributed i.e. whether it will be through a lease or transfer to the Developer. The mechanism of the same shall then be fleshed out in the JV Agreement.

We further note that under Clause 4.8, the obligation of NHC is to provide *serviced land*. Our understanding is that the government shall only provide off-site infrastructure. Any infrastructure within the land as well as connection to the off-site infrastructure shall be the obligation of the developer. It is our opinion that this should be clearly spelt out at this stage. The structure of the development should also be provided i.e. the establishment of the SPV.

Clause 8.2 – The clause should provide that the approval of the party should be in writing.

Clause 11.2 – The Clause should provide on the effect of termination on the commitment fee paid by the developer i.e. whether the same is refundable entirely or just a portion of the same and the timelines within which the commitment fee is refundable.

Clause 13.5 – We note that an arbitrator with the title “Chartered Arbitrator” does not exist. We there recommend that the term “Chartered Arbitrator” be deleted and replaced with the term “Arbitrator”. A timeline should also be included within which the parties should agree failure to which the chairperson can appoint the arbitrator.

Clause 16 – It is not advisable to have an agreement with conflicting provision. We note that both parties warrant that the making of the Agreement will not conflict with any other agreements entered into by the parties under clause 7.1.7 while clause 16 allows the parties to give priority to the Agreement in the event of a conflict. We propose that clause 16 be deleted to ensure that clause 7 is adhered to by the parties in totality.

Clause 22 – We suggest that the clause be amended to read as follows to avoid ambiguity: “No party hereto shall assign or otherwise transfer any rights or obligations under this agreement without obtaining prior written consent of the other party.

Execution by National Housing Corporation

We suggest that the Government makes a decision on whether the accounting officers will be the authorized signatories of NHC for the purpose of the project.

9.3.3 Commitment agreement

We note that commitment Agreement was necessitated by the need to have a contract that governs the relationship between the NHC and the developers at the early works stages of the affordable housing project. Our comments on the same are as follows:

Description of parties

We suggest that the National Housing Corporation should be described as follows:

“A state corporation established under the Housing Act Cap 117 Law of Kenya for the purposes hereof of Post Office Box Number (Hereinafter called “NHC” which expression shall where the context so admits include its successors in title and assigns) of the one part;

Clause 4.2 – We suggest that the clause be amended to read:

“the Contractor/ Developer shall put up a non-refundable Commitment Fee” to avoid any impression that the commitment fee may be refunded in the event that Contractor/ Developer decides to rescind the agreement.

Clause 4.6 on NHC’s Role – We understand that NHC will be authorized to act on behalf of the Government in the Affordable Housing Project. We therefore suggest that the clause be reworded as follows:

“NHC’s Role under this Agreement shall include but not limited to:

4.6.1 Representing and acting on behalf of the Government of the Republic of Kenya;

4.6.2 Procuring provision of serviced land to undertake the Project;”

We also note the provision to select the sub-contractors. We propose that there be an obligation by the developer to contract the sub-contractor selected by NHC.

Clause 12.5 – We note that an arbitrator with the title “Chartered” does not exist. We therefore recommend that the term “Chartered Arbitrator” be deleted and replaced with the term “Arbitrator”.

Hardship and Review (clause 14)

It is our understanding that any change in the agreement must be agreed on by the parties and such change must be reduced in writing and signed by both parties. We therefore propose that the last sentence of the clause should be amended to read as follows:

“No amendment shall be effective unless agreed by both parties and signed in the same manner as this Agreement.”

Clause 22 on Notices – We note that the clause provides that the notices should be sent out to the addresses set out in the heading of the agreement while the addresses are provided under clause 22. We recommend that the clause be amended to read:

All communication between the parties may be sent by e-mail, hand delivery or registered post to the addresses as set out in clause 22.5 below or at such alternative address as may be specified in writing from time to time by any party. Each notice shall commence to run from the date of receipt by the addressee.

9.3.4 Letter of support

Subject

We are of the opinion that the subject should be amended as follows for clarity:

GOVERNMENT OF KENYA LETTER OF SUPPORT RELATING TO THE DEVELOPMENT, SALE AND PURCHASE OF [NUMBER OF UNITS] HOUSING UNITS SITUATED ON PROPERTY LAND REFERENCE NUMBER..... (“the Project”).

Sale of units (paragraph 2 (f)) – Please note that we have not looked at the Project Agreement as we understand this is still being developed and has not been availed.

Clause 7.1.1. (iv) – This clause should be limited to actions by the Government of Kenya and not left open to interpretation.

Clause 7.2.1 – Notice should not be served upon perception but rather the occurrence of the actual political event. The clause should also specifically provide on who determines whether the political event has occurred or not.

Liability Exclusion (paragraph 7.2.3 (c)) – We understand that the Government’s contribution in the Joint Venture Agreements that will be entered into with different contractors/ Developers will be land. We note that paragraph 7.2.3 (c) provides that failure to procure land is one of the grounds for liability exclusion. We suggest that the paragraph be deleted to avoid conflicting provisions in the documentations relating to the Affordable Housing Project.

Waivers of sovereign immunity (Clause 11) – We propose a deletion of this Clause as it unnecessarily provides extra protection to the developer to the detriment of the government.

Survival (paragraph 20) – The paragraph is not clear as drafted. We suggest the same be amended to read:

“GOK acknowledges and agrees that termination of the PA shall be without prejudice to the Company’s rights and GOK’s obligations under this letter except where the Company has defaulted under the PA.”

Appendix

Appendix 1 – Housing sector survey questionnaire

The Government of Kenya has defined the "Big Four" transformation agenda for the nation which identifies four priority initiatives to be implemented over the next five years. Core among them being the delivery of 500,000 affordable housing units. The State Department for Housing, Urban Development and Public Works has been charged with the mandate of structuring and delivering the Affordable Housing Programme covering major urban areas across the country and will incorporate innovative, cost effective and efficient delivery models.

The State Department of Housing, Urban Development and Public Works has therefore commissioned KPMG to conduct a survey in preparation of the programme master plan for the delivery of the affordable housing programme.

Your participation in the survey will contribute to the study data collection, analysis, conclusion and recommendations.

Your responses will be **COMPLETELY CONFIDENTIAL**. Your completion of the questionnaire will be regarded as your consent to participate in this survey.

Serial Number:	
County Name:	
Specific Area / Location:	
Name of enumerator:	Signature:
Name of supervisor:	Signature:
Date of enumeration:	
Start Time:	
Stop Time:	

QUESTIONS

1. Gender (Tick any that apply)

Male

Female

2. Age group (Tick any that apply)

15 - 20

21 - 25

26 - 30

31 - 35

36 - 40

41 - 45

46 - 50

Above 50

3. What is your marital status?

Married

Single

Single parent

Divorced

Separated

Widow (female)

Widower (male)

4. What is your employment status? (Tick any that apply)

Self-employed

Employed Salaried

Unemployed

Employed casual

Retired

Employed contractual

5. What is the approximate monthly income of your household in Kenya Shillings? (This will be an aggregate of yours and your spouse's incomes including income from business, salaries, etc.)

6. Who do you live with? (Tick any that apply)

Alone

Husband/Wife

Children

Extended family

Parents

Shared accommodation

Others (specify)

7. How many people live in your current house?

8. How long have you stayed in the current house?

Less than 1 year

1 - 2 years

2 - 4 years

4 - 6 years

6+ years

9. Do you own or rent the house you currently live in?

Own

Rent

10. If you rent, who is your landlord?

Housing association, housing co-operative, SACCOS

- National Government
- County Government
- Private landlord or letting agency
- National Housing Corporation
- Other (specify)

11. If living in a rented home, how much rent per month do you pay (in KES)?

12. How many habitable rooms does your current house have? (Tick any that apply)

- | | | |
|----------------------------|----------------------------|--------------------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> More than 5 |

13. If you own the house, how did you acquire it?

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> Self-build | <input type="checkbox"/> Purchase from another party |
| <input type="checkbox"/> Inherited | <input type="checkbox"/> Gifted |

a. If you purchased it, how much did you purchase it for? (all in cost)

b. What was your payment method?

- | | |
|--|--|
| <input type="checkbox"/> Tenant Purchase Scheme | <input type="checkbox"/> Personal savings |
| <input type="checkbox"/> Mortgage financing | <input type="checkbox"/> Regular bank loan |
| <input type="checkbox"/> Investors and financiers agreements | <input type="checkbox"/> Loans from family |
| <input type="checkbox"/> SACCOS | <input type="checkbox"/> Other |

14. Would you prefer to rent or to purchase a house?

- | | |
|-------------------------------|-----------------------------------|
| <input type="checkbox"/> Rent | <input type="checkbox"/> Purchase |
|-------------------------------|-----------------------------------|

20. Rank from one to four the following considerations in the order of importance if you were currently shopping for a home to rent or to own?

Criteria	0 = Not Important At All	1 = Of Little Importance	2 = Of Average Importance	3 = Very Important	4 = Essential
Home size					
Home location					
Home price					
Neighborhood					
Any other (specify)					

21. What number of habitable rooms would be appropriate for your household?

- 1 2 3
 4 5 More than 5

22. Which housing type do you prefer to own? (Tick any that apply)

- Flats/Apartments Bungalow Mansionettes
 Others (Specify)

23. Of the housing type chosen above, how many bedrooms would you prefer?

24. What is most important to you in choosing where to live? Please rank your answers in order of priority, with **(0)** being not important at all and **(4)** being essential. (X in the appropriate box for each line).

Criteria	0 = Not Important At All	1 = Of Little Importance	2 = Of Average Importance	3 = Very Important	4 = Essential
Access to public transport					

Criteria	0 = Not Important At All	1 = Of Little Importance	2 = Of Average Importance	3 = Very Important	4 = Essential
Proximity to place of work					
Have a garden/backyard					
Security					
Proximity to family					
Proximity to shops					
Availability of Internet					
Open space					
Access and movement					
Safety and security					
Creating communities					
Building technology					
Any other (Please specify)					

25. Do you have any other feedback / comment on the housing programme that you'd wish to add?

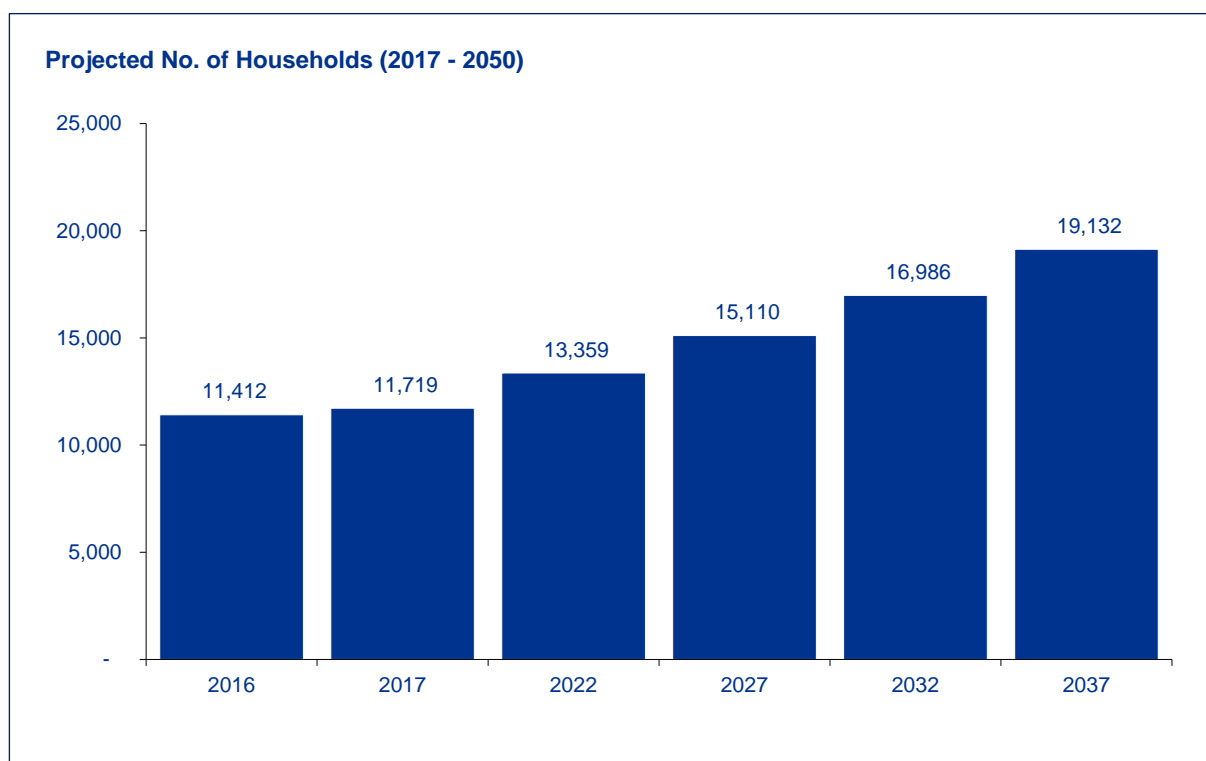
Appendix 2 – Projection based on population growth

We projected the demand for housing based on the second methodology that is based a population growth and holds the household size income. Based on this methodology, the following results would be achieved.

The number of total households in Kenya in 5, 10 and 20 years and the emerging household need in the same periods

The figure below provides an overview of the number of projected households per year to 2037.

Figure 42: Projected number of households (000's) based on the population



Source: KPMG Analysis

The table here below provides an overview of the projected number of households in Kenya from 2017 to 2037 at county level.

Table 45: Projected number of households in Kenya 2017 - 2037

	2017	2022	2027	2032	2037
Baringo	157	185	214	246	282
Bomet	184	214	255	292	336

	2017	2022	2027	2032	2037
Bungoma	327	356	387	422	460
Busia	180	196	214	233	254
Elgeyo-Marakwet	102	120	139	160	184
Embu	166	174	182	190	199
Garissa	79	87	95	104	114
Homa Bay	229	253	278	303	331
Isiolo	34	36	38	39	41
Kajiado	258	304	352	404	464
Kakamega	399	434	473	515	562
Kericho	216	253	300	344	396
Kiambu	611	670	731	794	862
Kilifi	337	393	452	516	588
Kirinyaga	202	221	241	262	284
Kisii	297	329	361	394	429
Kisumu	290	321	352	384	419

	2017	2022	2027	2032	2037
Kitui	238	250	262	273	286
Kwale	180	210	241	275	314
Laikipia	140	164	190	218	251
Lamu	31	36	42	47	54
Machakos	331	348	364	380	397
Makueni	235	247	259	270	282
Mandera	113	124	136	149	163
Marsabit	63	66	69	72	75
Meru	397	417	436	456	476
Migori	238	263	289	315	344
Mombasa	410	479	551	628	716
Murang'a	329	361	393	427	464
Nairobi	1,579	1,992	2,440	2,942	3,546
Nakuru	598	702	814	935	1,074
Nandi	209	245	285	327	375

	2017	2022	2027	2032	2037
Narok	231	271	314	361	414
Nyamira	183	202	222	242	264
Nyandarua	195	213	233	253	274
Nyeri	276	303	330	358	389
Samburu	63	74	86	99	113
Siaya	251	278	305	333	363
Taita-Taveta	105	123	142	162	184
Tana River	58	68	78	89	101
Tharaka-Nithi	108	113	119	124	130
Trans-Nzoia	217	255	296	340	390
Turkana	254	299	346	398	457
Uasin Gishu	279	328	380	437	502
Vihiga	146	159	174	189	206
Wajir	70	77	84	92	101
West Pokot	123	145	168	193	221

	2017	2022	2027	2032	2037
Total	11,719	13,359	15,110	16,986	19,132

Source: KPMG Analysis

The housing demand for each housing type based on the population methodology is as follows:

Projected demand for a studio apartment costing Ksh. 800,000

Table 46: Potential housing demand for studio apartment at current market mortgage rates

	2017	2022	2027	2032	2037
Baringo	6,160	8,860	12,489	17,339	23,934
Bomet	9,386	13,403	19,355	26,871	37,091
Bungoma	27,266	36,325	48,124	63,396	83,037
Busia	4,149	5,529	7,324	9,649	12,638
Elgeyo-Marakwet	3,467	4,985	7,027	9,756	13,467
Embu	9,318	11,968	15,236	19,240	24,157
Garissa	3,744	5,014	6,685	8,857	11,666
Homa Bay	10,280	13,922	18,570	24,490	32,112
Isiolo	6,587	8,463	10,778	12,388	12,943
Kajiado	39,408	56,666	79,874	107,044	122,933

	2017	2022	2027	2032	2037
Kakamega	24,295	32,369	42,882	56,491	73,993
Kericho	41,823	59,698	86,208	119,683	142,379
Kiambu	143,908	181,016	197,282	214,264	232,708
Kilifi	65,381	93,377	130,625	180,079	246,836
Kirinyaga	16,240	21,785	28,872	37,907	49,485
Kisii	28,347	38,391	51,208	67,531	88,549
Kisumu	58,221	78,849	97,379	106,231	115,888
Kitui	11,111	14,266	18,158	22,924	28,776
Kwale	25,595	36,554	51,136	70,496	96,630
Laikipia	10,118	14,548	20,507	28,470	39,298
Lamu	3,628	5,181	7,248	9,993	13,697
Machakos	108,245	139,025	164,518	171,857	179,523
Makueni	21,105	27,104	34,503	43,567	54,696
Mandera	5,188	6,950	9,266	12,275	16,170
Marsabit	7,922	10,179	12,963	16,375	20,566

	2017	2022	2027	2032	2037
Meru	19,468	25,004	31,833	40,199	50,473
Migori	34,774	47,094	62,816	82,840	106,708
Mombasa	216,091	252,248	290,180	330,918	377,376
Murang'A	19,874	26,661	35,334	46,391	60,561
Nairobi	859,123	1,084,269	1,327,881	1,600,820	1,929,861
Nakuru	126,670	182,141	256,742	313,558	360,099
Nandi	11,381	16,364	23,067	32,023	44,204
Narok	7,321	10,527	14,839	20,601	28,438
Nyamira	8,262	11,190	14,925	19,683	25,809
Nyandarua	17,093	22,930	30,389	39,898	52,084
Nyeri	10,321	13,845	18,349	24,091	31,450
Samburu	6,515	9,368	13,206	18,333	25,307
Siaya	13,933	18,869	25,168	33,191	43,522
Taita-Taveta	5,769	8,257	11,551	15,924	21,828
Tana River	7,084	10,117	14,153	19,511	26,744

	2017	2022	2027	2032	2037
Tharaka-Nithi	15,819	20,316	25,863	32,657	41,001
Trans Nzoia	12,278	17,655	24,886	34,549	47,691
Turkana	11,091	15,945	22,475	31,203	43,071
Uasin Gishu	34,009	48,903	68,932	95,698	113,255
Vihiga	15,498	20,643	27,348	36,027	47,188
Wajir	5,255	7,037	9,382	12,429	16,372
West Pokot	4,232	6,088	8,581	11,913	16,445
National total	2,152,758	2,799,896	3,536,118	4,349,630	5,282,657

Source: KPMG survey

Table 47: Potential housing demand for studio apartment at 8% interest rates

	2017	2022	2027	2032	2037
Baringo	8,202	11,797	16,629	23,086	31,868
Bomet	14,401	20,563	29,694	41,225	56,905
Bungoma	44,546	59,346	78,622	103,572	135,661
Busia	5,560	7,408	9,814	12,929	16,934
Elgeyo-Marakwet	8,714	12,530	17,662	24,520	33,847

	2017	2022	2027	2032	2037
Embu	14,347	18,426	23,458	29,622	37,192
Garissa	11,288	15,117	20,155	26,701	35,172
Homa Bay	22,379	30,308	40,427	53,313	69,906
Isiolo	8,316	10,685	13,607	15,640	16,341
Kajiado	80,740	116,098	163,649	219,315	251,868
Kakamega	32,882	43,809	58,039	76,457	100,146
Kericho	54,732	78,124	112,816	156,623	186,324
Kiambu	234,821	295,371	321,913	349,624	379,720
Kilifi	73,206	104,551	146,257	201,629	276,375
Kirinyaga	22,745	30,512	40,438	53,093	69,309
Kisii	42,160	57,098	76,159	100,436	131,695
Kisumu	119,737	162,160	200,268	218,473	238,333
Kitui	24,737	31,761	40,426	51,037	64,066
Kwale	31,389	44,830	62,712	86,455	118,505
Laikipia	17,040	24,502	34,537	47,948	66,186

	2017	2022	2027	2032	2037
Lamu	5,821	8,313	11,629	16,032	21,975
Machakos	166,512	213,861	253,076	264,365	276,157
Makueni	26,852	34,484	43,898	55,429	69,589
Mandera	9,516	12,747	16,995	22,515	29,657
Marsabit	9,392	12,067	15,368	19,413	24,382
Meru	24,490	31,454	40,045	50,569	63,494
Migori	34,774	47,094	62,816	82,840	106,708
Mombasa	303,914	354,767	408,114	465,409	530,748
Murang'A	28,546	38,293	50,750	66,632	86,984
Nairobi	1,119,275	1,412,597	1,729,977	2,085,565	2,514,243
Nakuru	181,057	260,346	366,978	448,188	514,713
Nandi	28,658	41,207	58,085	80,640	111,313
Narok	12,487	17,954	25,308	35,135	48,500
Nyamira	15,013	20,333	27,121	35,766	46,897
Nyandarua	22,711	30,466	40,377	53,012	69,203

	2017	2022	2027	2032	2037
Nyeri	29,517	39,595	52,477	68,899	89,943
Samburu	9,151	13,158	18,548	25,750	35,544
Siaya	21,729	29,428	39,252	51,764	67,875
Taita-Taveta	10,886	15,582	21,798	30,051	41,191
Tana River	8,734	12,474	17,450	24,056	32,975
Tharaka-Nithi	21,494	27,604	35,140	44,372	55,708
Trans Nzoia	20,696	29,759	41,948	58,237	80,389
Turkana	17,085	24,561	34,620	48,064	66,346
Uasin Gishu	67,044	96,403	135,888	188,654	223,263
Vihiga	33,004	43,960	58,239	76,720	100,490
Wajir	6,090	8,155	10,873	14,405	18,975
West Pokot	5,841	8,401	11,841	16,439	22,692
National total	3,112,230	4,060,057	5,135,895	6,320,620	7,666,306

Source: KPMG survey

Projected demand for a one bedroom apartment costing Ksh 1,000,000

Table 48: Potential housing demand for one bedroom apartment at current market mortgage rates

	2017	2022	2027	2032	2037
Baringo	5,022	7,223	10,182	14,135	19,512
Bomet	8,023	11,456	16,543	22,967	31,702
Bungoma	20,680	27,551	36,499	48,082	62,979
Busia	3,631	4,837	6,409	8,442	11,058
Elgeyo-Marakwet	3,034	4,362	6,149	8,537	11,784
Embu	7,208	9,258	11,786	14,883	18,686
Garissa	3,143	4,210	5,613	7,436	9,795
Homa Bay	9,178	12,430	16,580	21,866	28,671
Isiolo	5,246	6,739	8,583	9,865	10,307
Kajiado	31,745	45,647	64,343	86,229	99,028
Kakamega	21,496	28,640	37,942	49,983	65,469
Kericho	34,423	49,135	70,954	98,506	117,186
Kiambu	121,491	152,818	166,550	180,887	196,458
Kilifi	58,022	82,865	115,921	159,807	219,050
Kirinyaga	12,976	17,407	23,070	30,289	39,540

	2017	2022	2027	2032	2037
Kisii	24,482	33,156	44,225	58,322	76,473
Kisumu	43,483	58,889	72,728	79,340	86,552
Kitui	8,298	10,655	13,561	17,121	21,492
Kwale	21,489	30,690	42,932	59,186	81,127
Laikipia	7,867	11,311	15,944	22,136	30,555
Lamu	3,427	4,893	6,846	9,437	12,936
Machakos	84,162	108,094	127,916	133,621	139,582
Makueni	18,125	23,276	29,631	37,415	46,973
Mandera	4,032	5,401	7,201	9,541	12,567
Marsabit	6,695	8,602	10,956	13,839	17,381
Meru	16,547	21,253	27,058	34,169	42,902
Migori	30,910	41,861	55,836	73,635	94,851
Mombasa	177,647	207,371	238,555	272,045	310,238
Murang'A	17,164	23,025	30,515	40,065	52,302
Nairobi	725,550	915,690	1,121,427	1,351,930	1,629,813

	2017	2022	2027	2032	2037
Nakuru	95,876	137,861	194,327	237,330	272,557
Nandi	9,582	13,779	19,422	26,964	37,220
Narok	6,220	8,943	12,606	17,501	24,158
Nyamira	7,967	10,790	14,392	18,980	24,887
Nyandarua	14,581	19,560	25,924	34,036	44,431
Nyeri	8,386	11,249	14,909	19,574	25,553
Samburu	5,403	7,769	10,951	15,204	20,987
Siaya	10,712	14,508	19,351	25,520	33,463
Taita-Taveta	4,074	5,832	8,158	11,247	15,416
Tana River	5,660	8,084	11,308	15,590	21,369
Tharaka-Nithi	13,165	16,907	21,523	27,178	34,121
Trans Nzoia	10,524	15,133	21,331	29,613	40,878
Turkana	8,214	11,808	16,644	23,107	31,897
Uasin Gishu	26,721	38,423	54,160	75,191	88,984
Vihiga	11,544	15,376	20,370	26,834	35,148

	2017	2022	2027	2032	2037
Wajir	4,133	5,534	7,378	9,775	12,876
West Pokot	3,809	5,479	7,723	10,722	14,800
National total	1,781,766	2,315,782	2,922,931	3,598,080	4,375,713

Source: KPMG Analysis

Table 49: Potential housing demand for one bedroom apartment at 8% interest rates

	2017	2022	2027	2032	2037
Baringo	6,696	9,631	13,576	18,847	26,016
Bomet	11,472	16,381	23,655	32,841	45,333
Bungoma	36,028	47,998	63,588	83,768	109,720
Busia	4,522	6,026	7,983	10,517	13,775
Elgeyo-Marakwet	5,131	7,378	10,399	14,438	19,929
Embu	11,948	15,345	19,536	24,670	30,974
Garissa	6,202	8,306	11,074	14,671	19,326
Homa Bay	12,922	17,501	23,344	30,785	40,366
Isiolo	7,223	9,280	11,818	13,583	14,193
Kajiado	52,014	74,792	105,425	141,286	162,257

	2017	2022	2027	2032	2037
Kakamega	26,972	35,935	47,607	62,715	82,146
Kericho	48,880	69,771	100,755	139,878	166,404
Kiambu	168,671	212,163	231,229	251,133	272,751
Kilifi	69,626	99,439	139,105	191,770	262,861
Kirinyaga	19,700	26,427	35,024	45,985	60,030
Kisii	32,984	44,671	59,584	78,578	103,033
Kisumu	80,553	109,094	134,731	146,978	160,339
Kitui	15,373	19,738	25,123	31,718	39,814
Kwale	29,225	41,738	58,387	80,493	110,333
Laikipia	12,635	18,167	25,608	35,552	49,074
Lamu	4,208	6,010	8,408	11,591	15,888
Machakos	132,842	170,617	201,903	210,909	220,317
Makueni	24,274	31,172	39,683	50,107	62,907
Mandera	6,774	9,074	12,098	16,028	21,112
Marsabit	8,719	11,203	14,268	18,023	22,636

	2017	2022	2027	2032	2037
Meru	20,519	26,353	33,552	42,369	53,198
Migori	34,774	47,094	62,816	82,840	106,708
Mombasa	253,982	296,480	341,062	388,944	443,549
Murang'A	21,825	29,277	38,802	50,944	66,504
Nairobi	965,370	1,218,358	1,492,097	1,798,791	2,168,523
Nakuru	153,632	220,911	311,391	380,300	436,748
Nandi	18,043	25,944	36,570	50,770	70,081
Narok	9,193	13,218	18,632	25,867	35,706
Nyamira	237,051	312,977	403,202	500,566	613,458
Nyandarua	19,140	25,676	34,028	44,677	58,322
Nyeri	15,892	21,319	28,254	37,096	48,427
Samburu	7,612	10,945	15,428	21,418	29,565
Siaya	18,079	24,485	32,659	43,070	56,475
Taita-Taveta	8,507	12,176	17,033	23,482	32,187
Tana River	8,231	11,756	16,445	22,671	31,075

	2017	2022	2027	2032	2037
Tharaka-Nithi	18,742	24,070	30,642	38,691	48,576
Trans Nzoia	14,172	20,378	28,724	39,878	55,046
Turkana	241,484	318,045	405,362	502,746	613,222
Uasin Gishu	42,752	61,473	86,651	120,298	142,367
Vihiga	22,403	29,840	39,533	52,078	68,213
Wajir	6,090	8,155	10,873	14,405	18,975
West Pokot	4,537	6,526	9,199	12,771	17,628
National total	2,977,626	3,883,315	4,916,867	6,051,534	7,346,089

Source: KPMG Analysis

Projected demand for a two bedroom apartment costing Ksh 2,000,000

Table 50: Potential housing demand for two bedroom apartment at current market mortgage rates

	2017	2022	2027	2032	2037
Baringo	1,507	2,167	3,054	4,241	5,854
Bomet	3,008	4,296	6,204	8,612	11,888
Bungoma	5,515	7,347	9,733	12,822	16,794
Busia	1,245	1,659	2,197	2,895	3,791
Elgeyo-Marakwet	1,040	1,496	2,108	2,927	4,040
Embu	2,768	3,555	4,526	5,715	7,176
Garissa	1,257	1,684	2,245	2,974	3,918
Homa Bay	3,524	4,773	6,367	8,396	11,010
Isiolo	1,144	1,470	1,873	2,152	2,249
Kajiado	5,254	7,555	10,650	14,272	16,391
Kakamega	8,986	11,973	15,861	20,895	27,369
Kericho	12,908	18,425	26,608	36,940	43,945
Kiambu	37,623	47,324	51,577	56,016	60,838

	2017	2022	2027	2032	2037
Kilifi	25,861	36,934	51,667	71,228	97,633
Kirinyaga	4,152	5,570	7,382	9,692	12,653
Kisii	7,731	10,470	13,966	18,417	24,149
Kisumu	5,493	7,439	9,187	10,022	10,933
Kitui	1,048	1,346	1,713	2,163	2,715
Kwale	8,595	12,276	17,173	23,674	32,451
Laikipia	1,452	2,088	2,944	4,087	5,641
Lamu	1,693	2,418	3,383	4,663	6,392
Machakos	15,538	19,956	23,615	24,669	25,769
Makueni	7,250	9,310	11,852	14,966	18,789
Mandera	1,210	1,620	2,160	2,862	3,770
Marsabit	2,616	3,361	4,280	5,407	6,791
Meru	4,672	6,001	7,640	9,648	12,113
Migori	11,591	15,698	20,939	27,613	35,569
Mombasa	49,194	57,426	66,061	75,335	85,912
Murang'A	5,420	7,271	9,636	12,652	16,516
Nairobi	243,897	307,813	376,972	454,457	547,869
Nakuru	20,918	30,079	42,398	51,781	59,467
Nandi	4,423	6,359	8,964	12,445	17,178
Narok	2,132	3,066	4,322	6,000	8,283
Nyamira	4,249	5,755	7,676	10,122	13,273
Nyandarua	4,999	6,706	8,888	11,669	15,234
Nyeri	1,548	2,077	2,752	3,614	4,717
Samburu	1,581	2,274	3,205	4,450	6,142
Siaya	3,317	4,493	5,993	7,903	10,363
Taita-Taveta	978	1,400	1,958	2,699	3,700
Tana River	1,811	2,587	3,619	4,989	6,838
Tharaka-Nithi	4,514	5,797	7,379	9,318	11,699
Trans Nzoia	3,157	4,540	6,399	8,884	12,263
Turkana	3,154	4,534	6,391	8,873	12,248
Uasin Gishu	2,915	4,192	5,908	8,203	9,707
Vihiga	2,409	3,209	4,251	5,600	7,335
Wajir	1,305	1,748	2,330	3,087	4,066
West Pokot	1,524	2,192	3,089	4,289	5,920
National total	548,130	711,726	899,095	1,114,337	1,369,358

Source: KPMG Analysis

Table 51: Potential housing demand for two bedroom apartment at 8% interest rates

	2017	2022	2027	2032	2037
Baringo	3,113	4,478	6,312	8,764	12,097
Bomet	5,736	8,191	11,828	16,421	22,667
Bungoma	11,948	15,917	21,088	27,780	36,386
Busia	2,448	3,262	4,321	5,692	7,456
Elgeyo-Marakwet	2,046	2,941	4,146	5,756	7,946

	2017	2022	2027	2032	2037
Embu	5,236	6,725	8,561	10,811	13,573
Garissa	2,347	3,143	4,191	5,552	7,313
Homa Bay	6,667	9,029	12,044	15,883	20,826
Isiolo	2,708	3,480	4,431	5,093	5,322
Kajiado	14,273	20,524	28,930	38,770	44,525
Kakamega	16,542	22,038	29,197	38,462	50,379
Kericho	24,612	35,131	50,731	70,430	83,786
Kiambu	76,811	96,617	105,299	114,364	124,208
Kilifi	46,682	66,670	93,265	128,575	176,239
Kirinyaga	8,374	11,233	14,887	19,546	25,516
Kisii	15,668	21,219	28,303	37,325	48,941
Kisumu	17,392	23,554	29,089	31,733	34,617
Kitui	3,319	4,261	5,424	6,848	8,596
Kwale	16,045	22,915	32,055	44,191	60,574
Laikipia	3,727	5,360	7,555	10,488	14,477
Lamu	2,967	4,237	5,927	8,172	11,201
Machakos	39,877	51,217	60,608	63,312	66,136
Makueni	13,533	17,379	22,124	27,936	35,072
Mandera	2,500	3,349	4,465	5,915	7,791
Marsabit	4,920	6,322	8,051	10,170	12,773
Meru	9,889	12,701	16,171	20,420	25,639
Migori	22,100	29,930	39,922	52,648	67,817
Mombasa	104,944	122,504	140,925	160,709	183,272
Murang'A	10,985	14,736	19,529	25,641	33,472
Nairobi	483,056	609,647	746,622	900,087	1,085,095
Nakuru	49,504	71,183	100,338	122,542	140,731
Nandi	7,902	11,362	16,015	22,234	30,692
Narok	4,194	6,030	8,500	11,801	16,289
Nyamira	7,294	9,879	13,177	17,377	22,785
Nyandarua	9,832	13,189	17,479	22,949	29,959
Nyeri	3,973	5,330	7,064	9,274	12,107
Samburu	3,300	4,745	6,688	9,285	12,817
Siaya	6,773	9,172	12,235	16,135	21,156
Taita-Taveta	2,216	3,172	4,438	6,118	8,386
Tana River	3,653	5,217	7,297	10,060	13,790
Tharaka-Nithi	8,877	11,400	14,512	18,325	23,007
Trans Nzoia	6,525	9,382	13,225	18,360	25,343
Turkana	5,966	8,577	12,090	16,785	23,169
Uasin Gishu	10,104	14,529	20,480	28,433	33,649
Vihiga	5,822	7,754	10,273	13,533	17,726
Wajir	2,645	3,542	4,722	6,256	8,240
West Pokot	2,844	4,091	5,766	8,005	11,050
National total	1,121,887	1,457,262	1,840,300	2,274,963	2,784,608

Projected demand for a three bedroom apartment costing Ksh 3,000,000

Table 52: Potential housing demand for three bedroom apartment at 8% interest rates

	2017	2022	2027	2032	2037
Baringo	1,532	2,203	3,105	4,311	5,951
Bomet	3,059	4,367	6,307	8,756	12,086
Bungoma	5,607	7,469	9,895	13,036	17,074
Busia	1,265	1,686	2,234	2,943	3,854
Elgeyo-Marakwet	1,057	1,521	2,143	2,976	4,108
Embu	2,814	3,614	4,601	5,810	7,295
Garissa	1,278	1,712	2,282	3,024	3,983
Homa Bay	3,583	4,853	6,473	8,536	11,193
Isiolo	1,164	1,495	1,904	2,188	2,286
Kajiado	5,342	7,681	10,827	14,510	16,664
Kakamega	9,136	12,172	16,126	21,243	27,825
Kericho	13,124	18,733	27,051	37,555	44,677
Kiambu	38,250	48,113	52,436	56,950	61,852
Kilifi	26,292	37,550	52,528	72,415	99,260
Kirinyaga	4,222	5,663	7,505	9,854	12,864
Kisii	7,860	10,645	14,198	18,724	24,552
Kisumu	5,584	7,563	9,340	10,189	11,115
Kitui	1,066	1,368	1,742	2,199	2,760
Kwale	8,739	12,480	17,459	24,069	32,991
Laikipia	1,477	2,123	2,993	4,155	5,735
Lamu	1,721	2,458	3,439	4,741	6,498
Machakos	15,797	20,288	24,009	25,080	26,198
Makueni	7,371	9,466	12,050	15,215	19,102
Mandera	1,230	1,647	2,196	2,910	3,833
Marsabit	2,659	3,417	4,352	5,497	6,904
Meru	4,750	6,101	7,767	9,808	12,315
Migori	11,784	15,960	21,287	28,073	36,162
Mombasa	50,014	58,383	67,162	76,591	87,344
Murang'A	5,511	7,392	9,797	12,863	16,792
Nairobi	247,962	312,944	383,255	462,032	557,000
Nakuru	21,267	30,580	43,105	52,644	60,458
Nandi	4,496	6,465	9,113	12,652	17,464
Narok	2,168	3,117	4,394	6,100	8,421
Nyamira	4,320	5,850	7,804	10,291	13,494
Nyandarua	5,083	6,818	9,036	11,864	15,487
Nyeri	1,574	2,111	2,798	3,674	4,796
Samburu	1,608	2,312	3,259	4,524	6,245
Siaya	3,373	4,568	6,093	8,035	10,535
Taita-Taveta	994	1,423	1,991	2,744	3,761
Tana River	1,841	2,630	3,679	5,072	6,952
Tharaka-Nithi	4,589	5,893	7,502	9,473	11,894
Trans Nzoia	3,210	4,615	6,506	9,032	12,468

	2017	2022	2027	2032	2037
Turkana	3,207	4,610	6,498	9,021	12,452
Uasin Gishu	2,964	4,261	6,007	8,339	9,869
Vihiga	2,449	3,262	4,322	5,693	7,457
Wajir	1,327	1,777	2,369	3,138	4,134
West Pokot	1,549	2,228	3,141	4,360	6,019
Grand Total	557,265	723,588	914,081	1,132,910	1,392,182

Source: KPMG Analysis

Table 53: Projected housing demand (2017-2037) based on future population growth and constant household size *

		2017	2022	2027	2032	2037
Studio	13.5%	2,152,758	2,799,896	3,536,118	4,349,630	5,282,657
	8.0%	3,112,230	4,060,057	5,135,895	6,320,620	7,666,306
1 Bedroom	13.5%	1,781,766	2,315,782	2,922,931	3,598,080	4,375,713
	8.0%	2,977,626	3,883,315	4,916,867	6,051,534	7,346,089
2 Bedroom	13.5%	548,130	711,726	899,095	1,114,337	1,369,358
	8.0%	1,121,887	1,457,262	1,840,300	2,274,963	2,784,608
3 Bedroom	13.5%	n/a	n/a	n/a	n/a	n/a
	8.0%	557,265	723,588	914,081	1,132,910	1,392,182
Total	13.5%	4,482,654	5,827,404	7,358,145	9,062,046	11,027,728
	8%	7,769,007	10,124,222	12,807,143	15,780,027	19,189,185

Source: KPMG Analysis

* **Note:** These projections were made using the method where population was forecasted for each county but the county household sizes were held constant

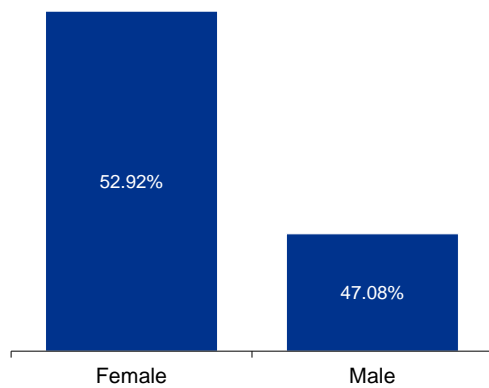
Appendix 3 – Housing survey

A3.1 Demographics of survey respondents

Gender

The proportion of female respondents stood at 53% compared to the male respondents at 47%. This proportional distribution of the respondents presents the analysis with a balanced perspective within both genders.

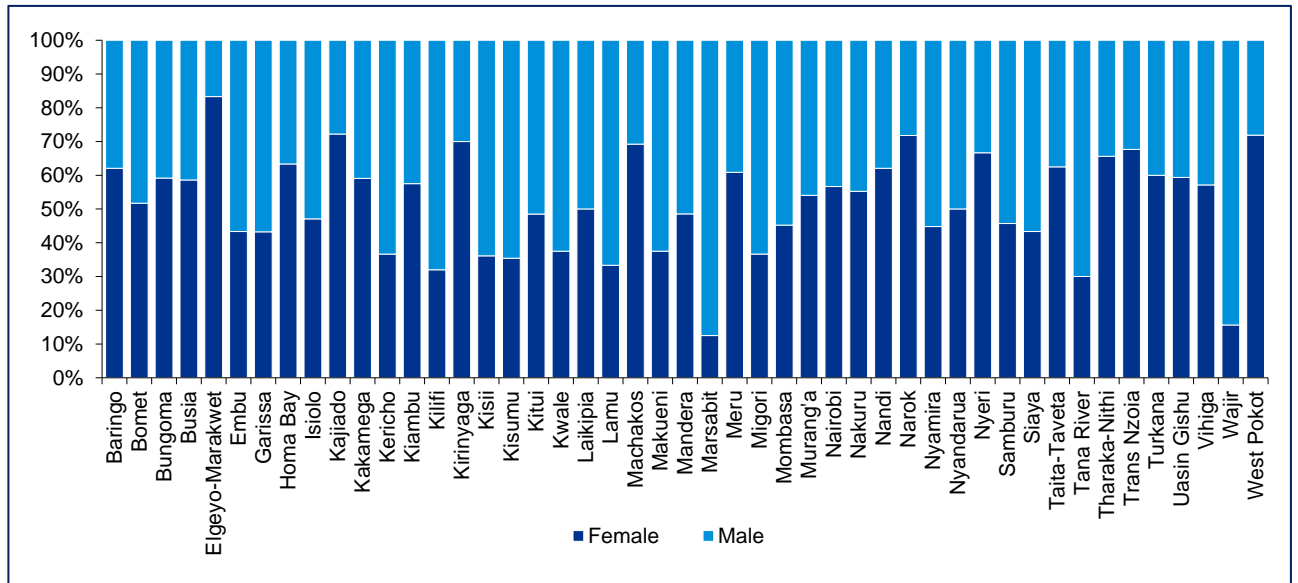
Figure 43: Gender split of respondents



Source: KPMG/SDHUD household survey

The figure below provides gender split of the respondents across the country. Marsabit and Wajir had the highest number of female respondents with Elgeyo Marakwet and West Pokot having the highest number of male respondents.

Figure 44: Gender split of the respondents per county

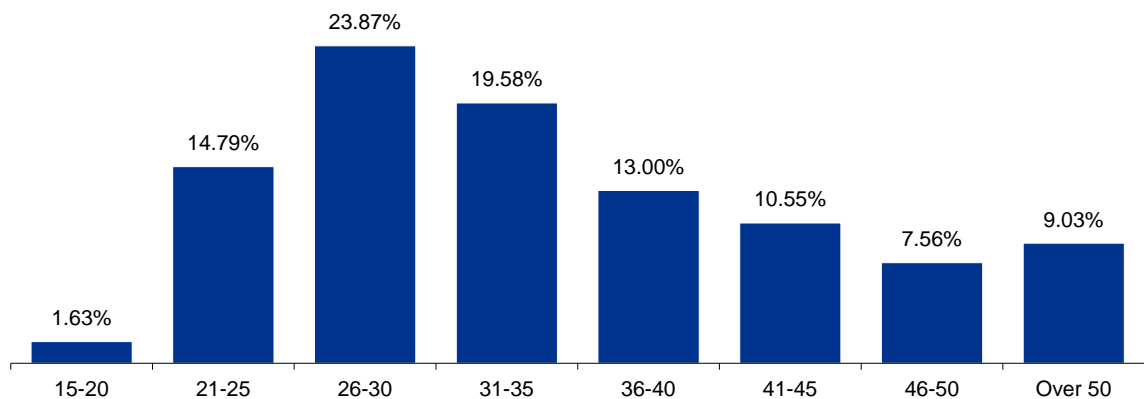


Source: KPMG/SDHUD household survey

Proportion of households by age of respondent

The majority of the respondents were under 35 years of age, accounting for 60% of the survey. This age distribution is important as it provides a balanced age distribution of the population targeted thereby providing relevant responses to the survey. Garissa had the lowest age on average with over 37% of its population below 25%. Laikipia has the largest population over 50, accounting for 28% of its population.

Figure 45: Proportion of respondents by age group



Source: KPMG/SDHUD household survey

Table 54: Age group per county

County	15-20	21-25	26-30	31-35	36-40	41-45	46-50	Over 50
Baringo	10%	21%	24%	24%	10%	3%	3%	3%
Bomet	0%	7%	38%	11%	11%	14%	7%	14%
Bungoma	0%	14%	41%	23%	14%	2%	4%	2%
Busia	6%	13%	10%	31%	9%	13%	6%	11%
Elgeyo-Marakwet	5%	23%	28%	16%	8%	16%	3%	0%
Embu	4%	4%	13%	10%	20%	20%	7%	24%
Garissa	3%	34%	33%	22%	3%	0%	3%	3%
Homa Bay	0%	14%	39%	18%	4%	13%	9%	4%
Isiolo	0%	13%	26%	28%	6%	16%	6%	6%
Kajiado	3%	25%	26%	24%	11%	5%	3%	3%
Kakamega	0%	8%	17%	12%	17%	14%	16%	16%
Kericho	0%	7%	20%	20%	10%	23%	13%	7%
Kiambu	1%	19%	23%	19%	18%	11%	3%	6%
Kilifi	0%	15%	12%	23%	23%	8%	15%	4%
Kirinyaga	0%	17%	22%	28%	15%	8%	3%	7%

County	15-20	21-25	26-30	31-35	36-40	41-45	46-50	Over 50
Kisii	0%	0%	9%	25%	19%	14%	11%	22%
Kisumu	0%	3%	19%	16%	25%	16%	10%	11%
Kitui	0%	18%	9%	15%	21%	21%	3%	12%
Kwale	0%	9%	13%	19%	6%	19%	19%	15%
Laikipia	0%	11%	41%	10%	14%	0%	11%	13%
Lamu	0%	6%	12%	11%	28%	11%	5%	28%
Machakos	0%	13%	21%	25%	16%	8%	15%	2%
Makueni	0%	16%	41%	19%	6%	3%	6%	9%
Mandera	3%	11%	35%	17%	3%	8%	18%	5%
Marsabit	3%	3%	16%	23%	19%	10%	10%	16%
Meru	0%	20%	30%	23%	14%	4%	4%	6%
Migori	7%	6%	13%	17%	17%	10%	20%	10%
Mombasa	3%	9%	31%	19%	17%	10%	7%	5%
Murang'a	6%	29%	26%	16%	6%	5%	3%	8%
Nairobi	2%	16%	25%	20%	17%	7%	4%	9%
Nakuru	5%	11%	19%	15%	18%	17%	6%	11%

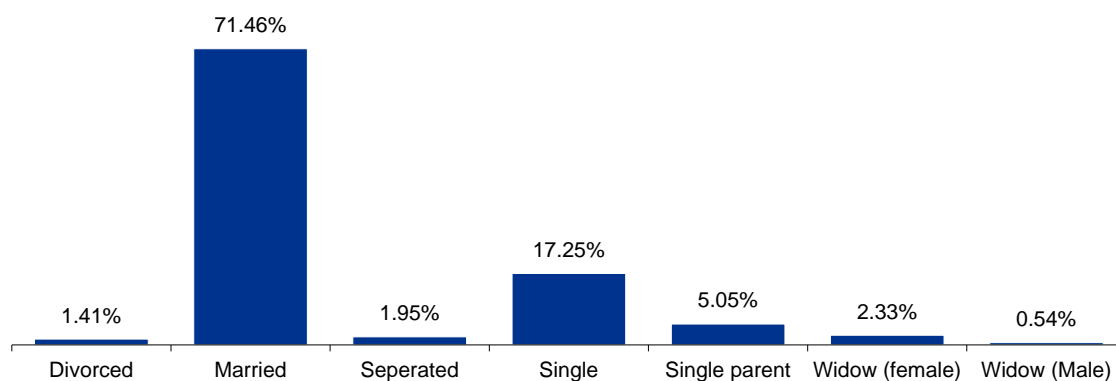
County	15-20	21-25	26-30	31-35	36-40	41-45	46-50	Over 50
Nandi	3%	23%	33%	10%	18%	3%	7%	3%
Narok	0%	10%	23%	35%	8%	5%	10%	8%
Nyamira	0%	21%	14%	41%	3%	7%	0%	14%
Nyandarua	0%	18%	25%	24%	3%	18%	1%	10%
Nyeri	0%	12%	23%	11%	10%	17%	4%	22%
Samburu	0%	9%	14%	26%	14%	15%	14%	9%
Siaya	0%	3%	27%	14%	21%	11%	10%	14%
Taita-Taveta	0%	15%	28%	16%	9%	19%	3%	10%
Tana River	0%	3%	23%	13%	13%	13%	27%	7%
Tharaka-Nithi	2%	15%	21%	16%	16%	19%	6%	3%
Trans Nzoia	0%	26%	18%	24%	10%	10%	12%	0%
Turkana	2%	21%	27%	12%	7%	15%	7%	9%
Uasin Gishu	0%	28%	22%	19%	9%	6%	6%	9%
Vihiga	0%	14%	34%	17%	2%	13%	8%	12%
Wajir	3%	13%	31%	19%	10%	15%	3%	6%
West Pokot	3%	15%	27%	15%	24%	6%	0%	9%

County	15-20	21-25	26-30	31-35	36-40	41-45	46-50	Over 50
Average	2%	13%	22%	19%	14%	11%	8%	10%

Source: KPMG/SDHUD household survey

Marital Status

A majority of our respondents were married, accounting for 71% of the survey data. Turkana had the highest prevalence of divorced respondents at 10% and the largest group of single parents at 19%.



Source: KPMG/SDHUD household survey

Table 55: Marital status

County	Divorced	Married	Separated	Single	Single parent	Widow (female)	Widow (Male)
Baringo	0%	76%	0%	21%	3%	0%	0%
Bomet	0%	79%	0%	14%	3%	3%	0%
Bungoma	0%	67%	6%	24%	0%	2%	0%

County	Divorced	Married	Separated	Single	Single parent	Widow (female)	Widow (Male)
Busia	3%	77%	0%	13%	7%	0%	0%
Elgeyo-Marakwet	0%	78%	0%	22%	0%	0%	0%
Embu	0%	80%	0%	20%	0%	0%	0%
Garissa	3%	68%	0%	22%	5%	0%	3%
Homa Bay	0%	71%	0%	26%	0%	3%	0%
Isiolo	0%	79%	0%	12%	3%	6%	0%
Kajiado	0%	69%	0%	22%	8%	0%	0%
Kakamega	7%	41%	2%	18%	16%	9%	7%
Kericho	0%	73%	0%	20%	0%	7%	0%
Kiambu	4%	62%	9%	18%	5%	0%	1%
Kilifi	4%	62%	4%	23%	4%	4%	0%
Kirinyaga	0%	55%	5%	23%	18%	0%	0%
Kisii	0%	81%	6%	6%	3%	3%	3%
Kisumu	0%	75%	2%	15%	2%	2%	4%
Kitui	3%	64%	3%	21%	9%	0%	0%
Kwale	0%	82%	0%	18%	0%	0%	0%

County	Divorced	Married	Separated	Single	Single parent	Widow (female)	Widow (Male)
Laikipia	0%	78%	0%	19%	3%	0%	0%
Lamu	0%	89%	0%	5%	5%	0%	0%
Machakos	0%	74%	3%	5%	18%	0%	0%
Makueni	0%	74%	0%	19%	0%	6%	0%
Mandera	8%	89%	0%	3%	0%	0%	0%
Marsabit	0%	78%	0%	19%	3%	0%	0%
Meru	2%	76%	4%	9%	9%	0%	0%
Migori	3%	80%	0%	13%	0%	3%	0%
Mombasa	0%	67%	0%	23%	5%	5%	0%
Murang'a	0%	54%	3%	41%	0%	3%	0%
Nairobi	1%	75%	2%	18%	4%	1%	0%
Nakuru	1%	78%	6%	12%	1%	1%	0%
Nandi	0%	67%	0%	33%	0%	0%	0%
Narok	0%	79%	3%	5%	10%	3%	0%
Nyamira	0%	80%	0%	20%	0%	0%	0%
Nyandarua	0%	66%	0%	25%	5%	5%	0%

County	Divorced	Married	Separated	Single	Single parent	Widow (female)	Widow (Male)
Nyeri	3%	56%	5%	18%	18%	0%	0%
Samburu	3%	77%	0%	11%	6%	3%	0%
Siaya	0%	80%	0%	10%	3%	3%	3%
Taita-Taveta	3%	78%	0%	9%	0%	9%	0%
Tana River	0%	70%	3%	20%	7%	0%	0%
Tharaka-Nithi	0%	78%	0%	16%	3%	3%	0%
Trans Nzoia	3%	65%	3%	18%	12%	0%	0%
Turkana	10%	38%	2%	12%	19%	19%	0%
Uasin Gishu	0%	88%	0%	9%	3%	0%	0%
Vihiga	0%	71%	3%	14%	9%	3%	0%
Wajir	3%	63%	0%	31%	0%	0%	3%
West Pokot	0%	79%	0%	15%	0%	6%	0%
Average	1%	71%	2%	17%	5%	2%	1%

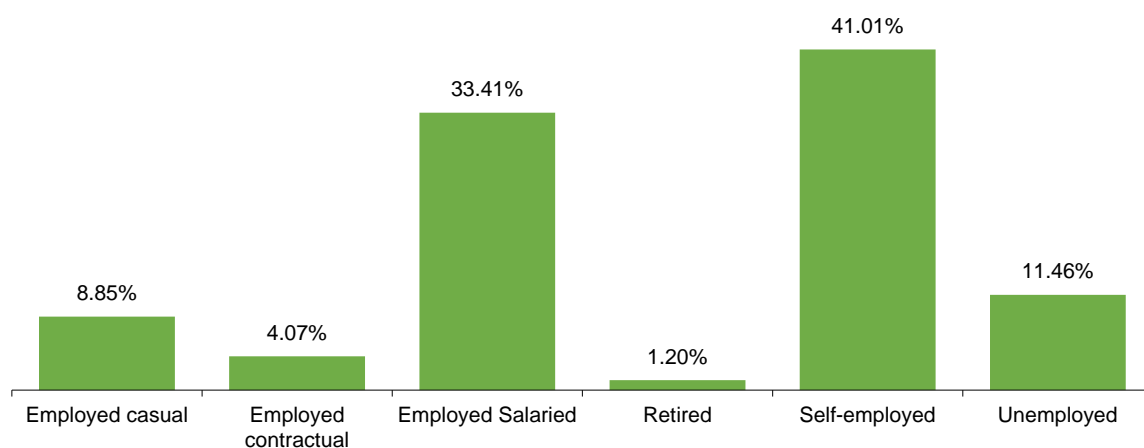
Source: KPMG/SDHUD household survey

Employment Status

On average, 41% of the respondents are self-employed. Uasin Gishu has the highest rate of self-employed people, standing at 66%. West Pokot has the highest rate of unemployment,

standing at 27%. These demographics confirm the fact that majority of Kenyans are in informal employment and therefore any figures provided on the employed population as per KNBS are only representative of the formally employed persons.

Figure 46: Employment status of respondents



Source: KPMG/SDHUD household survey

Table 56: Employment status per county

County	Employed casual	Employed contractual	Employed Salaried	Retired	Self-employed	Unemployed
Baringo	13%	0%	13%	0%	63%	10%
Bomet	38%	34%	28%	0%	0%	0%
Bungoma	4%	4%	33%	0%	47%	12%
Busia	3%	0%	38%	0%	38%	21%
Elgeyo-Marakwet	3%	3%	28%	0%	53%	14%
Embu	0%	3%	83%	0%	7%	7%
Garissa	5%	0%	19%	0%	57%	19%

County	Employed casual	Employed contractual	Employed Salaried	Retired	Self-employed	Unemployed
Homa Bay	13%	6%	13%	0%	48%	19%
Isiolo	9%	0%	23%	3%	60%	6%
Kajiado	3%	0%	17%	0%	61%	19%
Kakamega	11%	7%	34%	14%	27%	7%
Kericho	3%	3%	73%	0%	10%	10%
Kiambu	18%	8%	16%	0%	47%	11%
Kilifi	25%	8%	50%	0%	13%	4%
Kirinyaga	15%	0%	28%	0%	55%	3%
Kisii	0%	0%	89%	0%	3%	8%
Kisumu	10%	4%	29%	0%	50%	6%
Kitui	21%	0%	64%	0%	15%	0%
Kwale	0%	0%	88%	0%	6%	6%
Laikipia	17%	3%	25%	3%	44%	8%
Lamu	0%	0%	56%	0%	39%	6%
Machakos	5%	8%	38%	0%	36%	13%
Makueni	6%	19%	41%	0%	19%	16%

County	Employed casual	Employed contractual	Employed Salaried	Retired	Self-employed	Unemployed
Mandera	33%	0%	6%	0%	33%	28%
Marsabit	0%	6%	47%	0%	34%	13%
Meru	2%	0%	30%	0%	63%	4%
Migori	7%	0%	77%	0%	13%	3%
Mombasa	2%	7%	20%	5%	64%	2%
Murang'a	5%	5%	14%	0%	59%	16%
Nairobi	7%	6%	18%	2%	54%	13%
Nakuru	8%	2%	33%	3%	33%	21%
Nandi	10%	13%	33%	0%	30%	13%
Narok	16%	0%	29%	0%	55%	0%
Nyamira	7%	3%	62%	3%	17%	7%
Nyandarua	7%	4%	33%	0%	53%	2%
Nyeri	5%	3%	8%	3%	67%	15%
Samburu	3%	0%	23%	0%	74%	0%
Siaya	13%	0%	67%	0%	13%	7%
Taita-Taveta	18%	0%	29%	6%	38%	9%

County	Employed casual	Employed contractual	Employed Salaried	Retired	Self-employed	Unemployed
Tana River	10%	3%	59%	3%	17%	7%
Tharaka-Nithi	6%	0%	47%	3%	41%	3%
Trans Nzoia	9%	0%	21%	0%	50%	21%
Turkana	17%	7%	19%	0%	19%	38%
Uasin Gishu	3%	0%	9%	3%	66%	19%
Vihiga	0%	6%	11%	0%	63%	20%
Wajir	9%	3%	69%	0%	9%	9%
West Pokot	0%	6%	24%	0%	42%	27%
Average	9%	4%	33%	1%	41%	11%

Source: KPMG/SDHUD household survey

A3.2 Household characteristics

Household income

According to the survey, 37% of the households in Kenya earn between Ksh 30,000 - Ksh 99,999 per month. Busia has the largest population earning below 5,000, standing at 38% while Lamu has the largest population earning above 100,000, prevailing at 30%.

Table 57: Household income

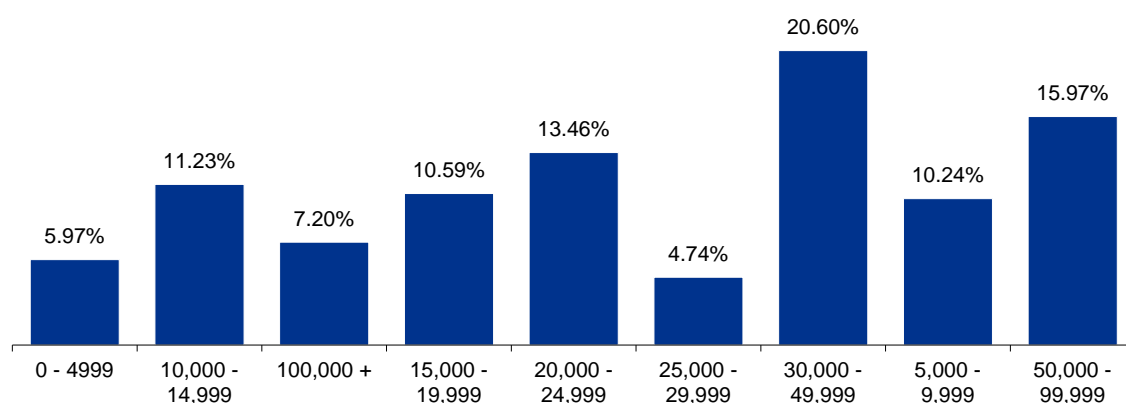


Table 58: Household income per county

County	0 – 4,999	5,000 - 9,999	10,000 - 14,999	15,000 - 19,999	20,000 - 24,999	25,000 - 29,999	30,000 - 49,999	50,000 - 99,999	100,000 +
Baringo	24%	17%	10%	21%	0%	0%	14%	10%	3%
Bomet	0%	0%	7%	7%	15%	4%	22%	30%	15%
Bungoma	2%	8%	10%	8%	16%	12%	22%	16%	4%
Busia	38%	27%	8%	4%	4%	0%	12%	8%	0%
Elgeyo-Marakwet	14%	19%	14%	8%	22%	0%	8%	8%	6%
Embu	0%	5%	24%	10%	10%	10%	19%	24%	0%
Garissa	3%	8%	19%	19%	22%	3%	11%	14%	0%

County	0 – 4,999	5,000 - 9,999	10,000 - 14,999	15,000 - 19,999	20,000 - 24,999	25,000 - 29,999	30,000 - 49,999	50,000 - 99,999	100,000 +
Homa Bay	10%	19%	3%	29%	16%	0%	10%	13%	0%
Isiolo	3%	12%	15%	12%	6%	9%	27%	15%	0%
Kajiado	0%	11%	11%	14%	23%	0%	23%	9%	9%
Kakamega	3%	0%	16%	13%	13%	5%	18%	24%	8%
Kericho	0%	0%	19%	15%	4%	4%	26%	22%	11%
Kiambu	6%	16%	7%	20%	13%	1%	17%	16%	4%
Kilifi	4%	25%	4%	4%	4%	8%	8%	13%	29%
Kirinyaga	0%	21%	21%	8%	8%	8%	18%	15%	3%
Kisii	0%	0%	7%	3%	17%	0%	31%	28%	14%
Kisumu	4%	11%	7%	13%	24%	4%	28%	9%	0%
Kitui	4%	4%	7%	26%	22%	7%	19%	7%	4%
Kwale	0%	4%	13%	9%	4%	9%	17%	30%	13%
Laikipia	3%	19%	14%	8%	14%	3%	25%	6%	8%
Lamu	0%	0%	30%	10%	20%	0%	10%	0%	30%
Machakos	0%	8%	8%	5%	21%	5%	31%	8%	15%
Makueni	0%	4%	8%	0%	17%	8%	17%	25%	21%

County	0 – 4,999	5,000 - 9,999	10,000 - 14,999	15,000 - 19,999	20,000 - 24,999	25,000 - 29,999	30,000 - 49,999	50,000 - 99,999	100,000 +
Mandera	24%	15%	6%	15%	12%	9%	12%	6%	0%
Marsabit	4%	0%	11%	14%	7%	11%	25%	25%	4%
Meru	0%	11%	18%	16%	7%	0%	24%	18%	7%
Migori	4%	8%	8%	4%	12%	0%	31%	23%	12%
Mombasa	0%	0%	2%	2%	14%	5%	33%	17%	26%
Murang'a	8%	19%	14%	19%	8%	0%	17%	11%	3%
Nairobi	2%	5%	6%	8%	12%	4%	27%	25%	11%
Nakuru	12%	15%	15%	11%	6%	8%	23%	5%	6%
Nandi	4%	4%	4%	15%	37%	7%	7%	22%	0%
Narok	0%	8%	8%	13%	24%	3%	18%	16%	11%
Nyamira	4%	0%	7%	11%	25%	0%	7%	29%	18%
Nyandarua	2%	20%	11%	7%	9%	2%	20%	25%	2%
Nyeri	22%	14%	17%	11%	17%	0%	14%	3%	3%
Samburu	7%	7%	20%	3%	13%	3%	23%	17%	7%
Siaya	0%	0%	8%	0%	21%	13%	17%	21%	21%
Taita-Taveta	6%	19%	10%	3%	16%	13%	26%	3%	3%

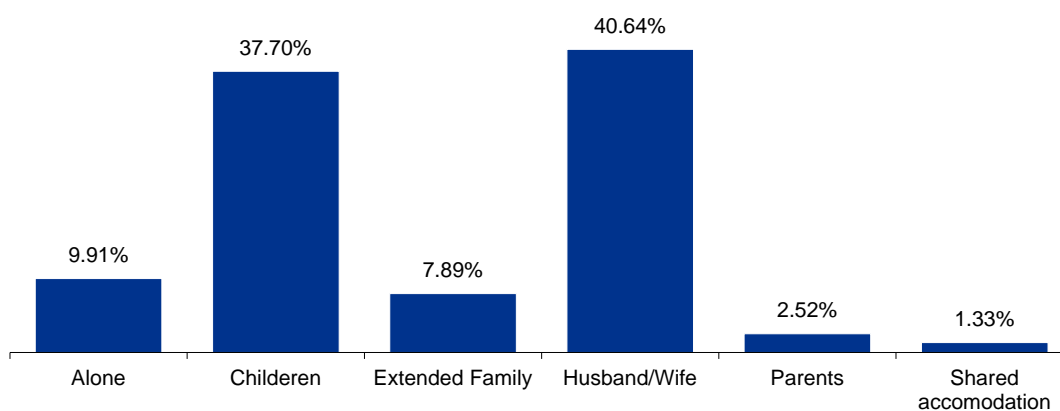
County	0 – 4,999	5,000 - 9,999	10,000 - 14,999	15,000 - 19,999	20,000 - 24,999	25,000 - 29,999	30,000 - 49,999	50,000 - 99,999	100,000 +
Tana River	0%	0%	9%	5%	5%	18%	41%	18%	5%
Tharaka-Nithi	0%	3%	16%	0%	19%	6%	25%	22%	9%
Trans Nzoia	15%	27%	15%	15%	6%	0%	12%	9%	0%
Turkana	34%	9%	0%	3%	6%	16%	9%	22%	0%
Uasin Gishu	3%	13%	22%	16%	19%	0%	22%	6%	0%
Vihiga	6%	9%	29%	11%	20%	6%	14%	6%	0%
Wajir	3%	6%	9%	6%	3%	13%	28%	22%	9%
West Pokot	12%	15%	12%	15%	6%	0%	15%	18%	6%
Grand Total	6%	10%	11%	11%	13%	5%	21%	16%	7%

Source: KPMG/SDHUD household survey

Household composition

78% of the households comprised of spouse and children. Single unit households were the closest composition of households denoting that approximately 10% of households comprise of only one person. These findings are important for policy makers and planners when constructing houses.

Figure 47: Composition of households



Source: KPMG/SDHUD household survey

The table below provides a summary of the composition of households per county.

Table 59: Composition of the household

County	Alone	Children	Extended Family	Husband/ Wife	Parents	Shared accommodation
Baringo	11%	35%	5%	49%	0%	0%
Bomet	10%	35%	5%	42%	5%	3%
Bungoma	8%	37%	11%	40%	4%	0%
Busia	2%	36%	34%	25%	0%	3%
Elgeyo-Marakwet	8%	47%	0%	41%	0%	3%
Embu	8%	36%	14%	36%	6%	0%
Garissa	7%	34%	19%	30%	4%	6%

County	Alone	Children	Extended Family	Husband/ Wife	Parents	Shared accommodation
Homa Bay	17%	32%	10%	41%	0%	0%
Isiolo	4%	48%	4%	45%	0%	0%
Kajiado	11%	43%	5%	41%	0%	0%
Kakamega	16%	39%	10%	27%	8%	0%
Kericho	10%	36%	12%	33%	10%	0%
Kiambu	14%	36%	9%	38%	3%	0%
Kilifi	26%	29%	6%	29%	3%	7%
Kirinyaga	12%	51%	2%	36%	0%	0%
Kisii	4%	34%	16%	45%	0%	0%
Kisumu	10%	42%	5%	41%	2%	0%
Kitui	14%	41%	8%	30%	5%	3%
Kwale	13%	19%	28%	37%	3%	0%
Laikipia	8%	36%	2%	53%	0%	1%
Lamu	6%	27%	24%	30%	12%	0%
Machakos	6%	47%	5%	41%	1%	0%

County	Alone	Children	Extended Family	Husband/ Wife	Parents	Shared accommodation
Makueni	10%	26%	10%	45%	9%	0%
Mandera	5%	24%	0%	69%	2%	0%
Marsabit	7%	32%	12%	39%	2%	7%
Meru	7%	45%	0%	45%	2%	1%
Migori	12%	29%	24%	29%	2%	2%
Mombasa	12%	29%	12%	45%	0%	2%
Murang'a	23%	34%	2%	35%	4%	2%
Nairobi	7%	39%	5%	45%	2%	1%
Nakuru	7%	44%	6%	40%	1%	1%
Nandi	32%	17%	7%	34%	7%	3%
Narok	5%	47%	0%	48%	0%	0%
Nyamira	4%	38%	15%	39%	4%	0%
Nyandarua	17%	40%	0%	37%	0%	5%
Nyeri	6%	48%	7%	35%	0%	3%
Samburu	21%	20%	0%	51%	5%	3%

County	Alone	Children	Extended Family	Husband/ Wife	Parents	Shared accommodation
Siaya	4%	37%	4%	52%	2%	0%
Taita-Taveta	8%	36%	6%	49%	0%	0%
Tana River	22%	42%	5%	28%	0%	3%
Tharaka-Nithi	11%	33%	2%	53%	0%	2%
Trans Nzoia	7%	49%	6%	38%	0%	0%
Turkana	12%	40%	15%	22%	9%	2%
Uasin Gishu	8%	42%	4%	46%	0%	0%
Vihiga	14%	38%	5%	43%	0%	0%
Wajir	14%	21%	17%	33%	14%	0%
West Pokot	5%	44%	2%	48%	0%	0%
Grand Total	10%	36%	10%	40%	3%	1%

Source: KPMG/SDHUD household survey

Household size

The average number of people per house in Kenya is 4. The county with the highest number of people per county is Lamu with 7. The average household size corresponds to average household size in the 2015/16 integrated household survey, suggesting that the household sizes have not changed in the last few years. The figure also confirms the findings from the previous question where 76% of the households' composition comprised of a couple and children.

Table 60: Household size

County	Household size
Baringo	4
Bomet	5
Bungoma	4
Busia	5
Elgeyo-Marakwet	4
Embu	5
Garissa	5
Homa Bay	4
Isiolo	4
Kajiado	4
Kakamega	5
Kericho	5
Kiambu	4
Kilifi	3
Kirinyaga	3
Kisii	6

County	Household size
Kisumu	4
Kitui	4
Kwale	6
Laikipia	4
Lamu	7
Machakos	4
Makueni	5
Mandera	6
Marsabit	6
Meru	3
Migori	6
Mombasa	4
Murang'a	3
Nairobi	4
Nakuru	4
Nandi	3

County	Household size
Narok	4
Nyamira	4
Nyandarua	3
Nyeri	4
Samburu	4
Siaya	5
Taita-Taveta	4
Tana River	4
Tharaka-Nithi	4
Trans Nzoia	4
Turkana	5
Uasin Gishu	4
Vihiga	4
Wajir	6
West Pokot	5
Average	4

Source: KPMG/SDHUD household survey

House size

The average number of habitable rooms per house in Kenya is 2. Migori has the highest number of habitable rooms with 4. The lowest is Garissa with 1.

Table 61: Number of habitable rooms per county

County	Average No. of habitable rooms
Baringo	2
Bomet	3
Bungoma	3
Busia	2
Elgeyo-Marakwet	2
Embu	3
Garissa	1
Homa Bay	2
Isiolo	2
Kajiado	2
Kakamega	3
Kericho	3
Kiambu	2

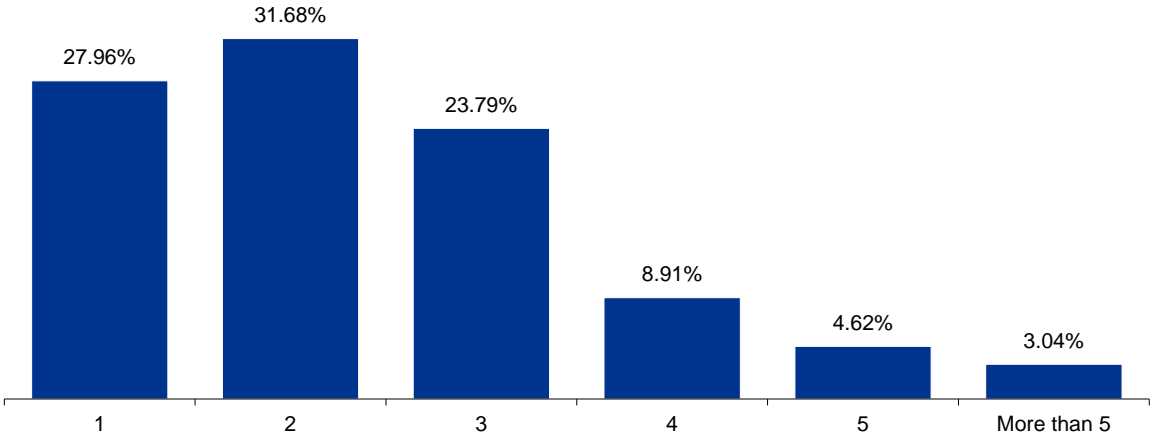
County	Average No. of habitable rooms
Kilifi	3
Kirinyaga	2
Kisii	3
Kisumu	3
Kitui	2
Kwale	2
Laikipia	2
Lamu	2
Machakos	2
Makueni	3
Mandera	2
Marsabit	2
Meru	2
Migori	4
Mombasa	2
Murang'a	2

County	Average No. of habitable rooms
Nairobi	2
Nakuru	2
Nandi	2
Narok	2
Nyamira	3
Nyandarua	2
Nyeri	2
Samburu	2
Siaya	3
Taita-Taveta	3
Tana River	2
Tharaka-Nithi	2
Trans Nzoia	2
Turkana	2
Uasin Gishu	2
Vihiga	2

County	Average No. of habitable rooms
Wajir	3
West Pokot	2
Average	2

Source: KPMG/SDHUD household survey

Figure 48: Number of habitable rooms across the county.



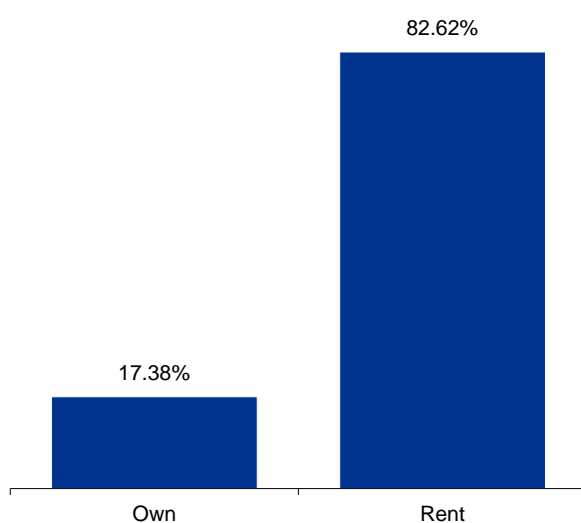
Source: KPMG/SDHUD household survey

A3.3 Housing tenure

House ownership

A vast majority of the respondents live in rentals, standing at 83%. This figure confirms the figure provided by the KIHBS survey 2015/16 which indicated that 86% of Kenyans lived in rental accommodation. Turkana County respondents had the most home owners at 50%, while Machakos County respondents were predominantly tenants.

Figure 49: House ownership



Source: KPMG/SDHUD household survey

Table 62: House ownership per county

County	Own	Rent
Baringo	13%	87%
Bomet	45%	55%
Bungoma	16%	84%
Busia	10%	90%

County	Own	Rent
Elgeyo-Marakwet	3%	97%
Embu	40%	60%
Garissa	14%	86%
Homa Bay	3%	97%
Isiolo	32%	68%
Kajiado	6%	94%
Kakamega	39%	61%
Kericho	33%	67%
Kiambu	16%	84%
Kilifi	25%	75%
Kirinyaga	8%	93%
Kisii	31%	69%
Kisumu	13%	88%
Kitui	18%	82%
Kwale	15%	85%
Laikipia	11%	89%

County	Own	Rent
Lamu	16%	84%
Machakos	0%	100%
Makueni	28%	72%
Mandera	44%	56%
Marsabit	34%	66%
Meru	7%	93%
Migori	57%	43%
Mombasa	12%	88%
Murang'a	11%	89%
Nairobi	5%	95%
Nakuru	4%	96%
Nandi	10%	90%
Narok	15%	85%
Nyamira	33%	67%
Nyandarua	18%	82%
Nyeri	10%	90%

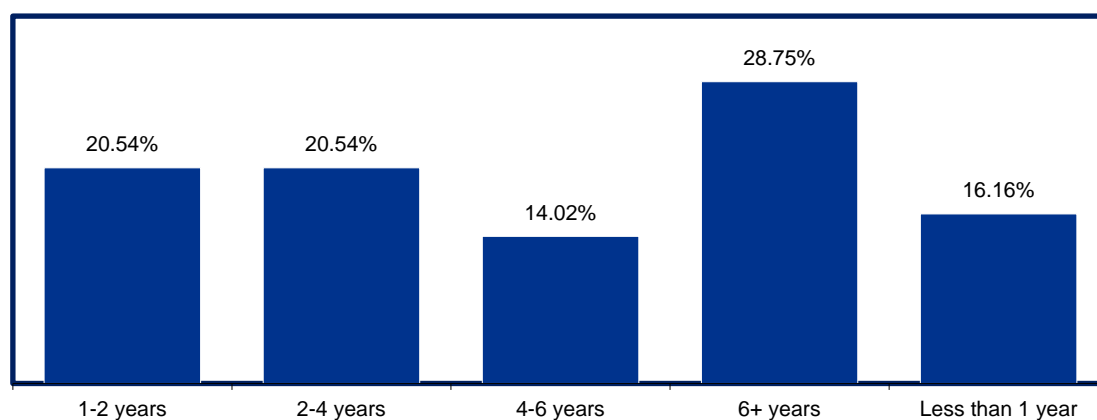
County	Own	Rent
Samburu	11%	89%
Siaya	23%	77%
Taita-Taveta	31%	69%
Tana River	13%	87%
Tharaka-Nithi	13%	88%
Trans Nzoia	3%	97%
Turkana	50%	50%
Uasin Gishu	9%	91%
Vihiga	3%	97%
Wajir	34%	66%
West Pokot	12%	88%
Average	17%	83%

Source: KPMG/SDHUD household survey

Tenure at current address

On average, people have lived in their current home for 1 – 4 years. Over 59% of people have lived in their current home for more than six years in Turkana. Vihiga has the largest group that have lived in their current home for less than a year is Vihiga, with 31%. These figures on tenure provide a view on permanence for decision makers.

Figure 50: Length of stay at current house



Source: KPMG/SDHUD household survey

Table 63: Length of stay at current address

County	Less than 1 year	1-2 years	2-4 years	4-6 years	6+ years
Baringo	13%	27%	23%	13%	23%
Bomet	4%	14%	29%	21%	32%
Bungoma	29%	29%	16%	8%	18%
Busia	13%	20%	20%	13%	33%
Elgeyo-Marakwet	25%	17%	22%	17%	19%
Embu	3%	13%	27%	3%	53%
Garissa	27%	16%	22%	22%	14%
Homa Bay	13%	27%	17%	17%	27%

County	Less than 1 year	1-2 years	2-4 years	4-6 years	6+ years
Isiolo	6%	18%	12%	18%	47%
Kajiado	28%	19%	19%	28%	6%
Kakamega	16%	20%	16%	16%	32%
Kericho	10%	23%	10%	10%	47%
Kiambu	18%	28%	16%	12%	26%
Kilifi	13%	21%	25%	21%	21%
Kirinyaga	25%	25%	15%	13%	23%
Kisii	14%	14%	22%	8%	42%
Kisumu	10%	25%	17%	13%	35%
Kitui	12%	24%	15%	15%	33%
Kwale	19%	19%	26%	3%	32%
Laikipia	19%	8%	19%	14%	39%
Lamu	6%	11%	11%	17%	56%
Machakos	23%	21%	15%	15%	26%
Makueni	19%	28%	22%	6%	25%
Mandera	6%	17%	25%	36%	17%

County	Less than 1 year	1-2 years	2-4 years	4-6 years	6+ years
Marsabit	13%	22%	16%	16%	34%
Meru	22%	35%	26%	4%	13%
Migori	7%	7%	40%	7%	40%
Mombasa	10%	29%	21%	24%	17%
Murang'a	27%	24%	8%	11%	30%
Nairobi	24%	20%	18%	9%	29%
Nakuru	14%	18%	18%	24%	26%
Nandi	30%	19%	22%	4%	26%
Narok	16%	11%	34%	21%	18%
Nyamira	13%	20%	13%	23%	30%
Nyandarua	13%	11%	31%	18%	27%
Nyeri	5%	26%	13%	15%	41%
Samburu	9%	9%	24%	26%	32%
Siaya	3%	13%	33%	23%	27%
Taita-Taveta	16%	19%	16%	16%	32%
Tana River	3%	17%	45%	14%	21%

County	Less than 1 year	1-2 years	2-4 years	4-6 years	6+ years
Tharaka-Nithi	3%	41%	31%	6%	19%
Trans Nzoia	24%	18%	35%	9%	15%
Turkana	2%	17%	17%	5%	59%
Uasin Gishu	19%	32%	16%	10%	23%
Vihiga	31%	23%	14%	11%	20%
Wajir	13%	16%	19%	13%	41%
West Pokot	23%	16%	16%	6%	39%
Average	16%	21%	21%	14%	29%

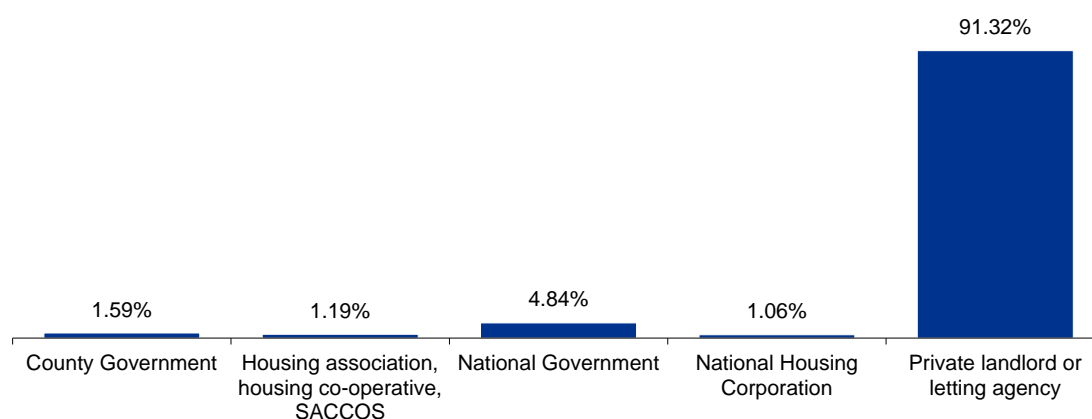
Source: KPMG/SDHUD household survey

Landlord

Around 92% of the respondents live under a landlord/private letting agency. This is an indication that the housing market is dominated by private landlords denoting that rental unit prices are mainly controlled by a small percentage of the population.

Counties such as Mandera and Meru are 100% landlord/private developer controlled. Less than 1.6% of Kenyans live under the County government

Figure 51: Landlord



Source: KPMG/SDHUD household survey

Table 64: Landlord per county

County	County Government	Housing association, housing co-operative, SACCOS	National Government	National Housing Corporation	Private landlord or letting agency
Baringo	0.00%	3.85%	0.00%	0.00%	96.15%
Bomet	0.00%	0.00%	0.00%	0.00%	100.00%
Bungoma	0.00%	2.44%	0.00%	0.00%	97.56%
Busia	7.41%	3.70%	14.81%	0.00%	74.07%
Elgeyo-Marakwet	0.00%	0.00%	0.00%	0.00%	100.00%
Embu	0.00%	0.00%	27.78%	0.00%	72.22%
Garissa	0.00%	0.00%	0.00%	3.13%	96.88%
Homa Bay	0.00%	0.00%	0.00%	0.00%	100.00%

County	County Government	Housing association, housing co-operative, SACCOS	National Government	National Housing Corporation	Private landlord or letting agency
Isiolo	0.00%	0.00%	0.00%	0.00%	100.00%
Kajiado	0.00%	2.94%	0.00%	0.00%	97.06%
Kakamega	16.00%	0.00%	16.00%	8.00%	60.00%
Kericho	0.00%	0.00%	26.32%	0.00%	73.68%
Kiambu	0.00%	0.00%	0.00%	0.00%	100.00%
Kilifi	0.00%	0.00%	16.67%	5.56%	77.78%
Kirinyaga	0.00%	0.00%	0.00%	0.00%	100.00%
Kisii	0.00%	0.00%	20.00%	4.00%	76.00%
Kisumu	2.38%	2.38%	0.00%	11.90%	83.33%
Kitui	0.00%	0.00%	25.93%	3.70%	70.37%
Kwale	0.00%	0.00%	14.81%	3.70%	81.48%
Laikipia	0.00%	6.25%	0.00%	0.00%	93.75%
Lamu	0.00%	0.00%	18.75%	0.00%	81.25%
Machakos	0.00%	5.26%	0.00%	0.00%	94.74%
Makueni	0.00%	0.00%	4.55%	0.00%	95.45%

County	County Government	Housing association, housing co-operative, SACCOS	National Government	National Housing Corporation	Private landlord or letting agency
Mandera	0.00%	0.00%	0.00%	0.00%	100.00%
Marsabit	0.00%	0.00%	0.00%	0.00%	100.00%
Meru	0.00%	0.00%	0.00%	0.00%	100.00%
Migori	0.00%	0.00%	15.38%	0.00%	84.62%
Mombasa	5.26%	5.26%	0.00%	0.00%	89.47%
Murang'a	0.00%	6.06%	0.00%	0.00%	93.94%
Nairobi	0.00%	1.23%	1.23%	0.00%	97.53%
Nakuru	10.94%	0.00%	0.00%	0.00%	89.06%
Nandi	0.00%	0.00%	3.70%	7.41%	88.89%
Narok	0.00%	0.00%	0.00%	0.00%	100.00%
Nyamira	0.00%	0.00%	5.00%	0.00%	95.00%
Nyandarua	0.00%	2.70%	0.00%	0.00%	97.30%
Nyeri	5.71%	0.00%	11.43%	0.00%	82.86%
Samburu	0.00%	0.00%	9.68%	0.00%	90.32%
Siaya	0.00%	0.00%	13.04%	0.00%	86.96%

County	County Government	Housing association, housing co-operative, SACCOS	National Government	National Housing Corporation	Private landlord or letting agency
Taita-Taveta	0.00%	0.00%	0.00%	0.00%	100.00%
Tana River	0.00%	0.00%	21.74%	4.35%	73.91%
Tharaka-Nithi	0.00%	0.00%	0.00%	0.00%	100.00%
Trans Nzoia	0.00%	0.00%	0.00%	0.00%	100.00%
Turkana	0.00%	0.00%	9.52%	0.00%	90.48%
Uasin Gishu	6.90%	3.45%	0.00%	0.00%	89.66%
Vihiga	0.00%	0.00%	0.00%	0.00%	100.00%
Wajir	14.29%	0.00%	42.86%	4.76%	38.10%
West Pokot	3.45%	3.45%	0.00%	0.00%	93.10%
Grand Total	1.59%	1.19%	4.84%	1.06%	91.32%

Source: KPMG/SDHUD household survey

Rent per month

The average rent per month is Ksh 6,111 across the county with Nairobi having the highest average rent at Ksh 11,456.

On average, the percentage used by the household compared to their income average is 17%. This is very close to the Consumer price Index which indicates that lower income households spend 18% on their rent. Therefore the proposed 30% expenditure on housing by the government will pose a strain on lower income groups if they were to spend 30% of their income towards a mortgage.

Table 65: Comparison of rent per month vs income per household

County	Average Rent per month	Average Income per month	Rent as percentage of income
Baringo	3,727	20,107	19%
Bomet	5,469	73,630	7%
Bungoma	5,873	30,776	19%
Busia	3,044	13,615	22%
Elgeyo-Marakwet	2,717	22,431	12%
Embu	6,031	30,262	20%
Garissa	4,234	23,000	18%
Homa Bay	4,497	20,516	22%
Isiolo	4,489	28,606	16%
Kajiado	6,682	29,600	23%
Kakamega	3,680	38,589	10%
Kericho	6,940	41,715	17%
Kiambu	6,871	27,240	25%
Kilifi	6,635	60,583	11%
Kirinyaga	5,964	29,205	20%

Kisii	6,992	62,862	11%
Kisumu	5,580	25,239	22%
Kitui	4,719	27,122	17%
Kwale	5,750	46,587	12%
Laikipia	4,766	33,861	14%
Lamu	5,286	58,750	9%
Machakos	10,518	44,449	24%
Makueni	7,429	73,708	10%
Mandera	6,050	17,197	35%
Marsabit	5,810	39,161	15%
Meru	6,100	37,511	16%
Migori	5,869	47,992	12%
Mombasa	11,200	80,190	14%
Murang'a	3,612	26,222	14%
Nairobi	11,456	52,282	22%
Nakuru	5,468	30,047	18%
Nandi	4,278	28,556	15%

Narok	5,406	38,132	14%
Nyamira	4,950	43,875	11%
Nyandarua	3,947	30,136	13%
Nyeri	3,107	17,442	18%
Samburu	5,650	33,783	17%
Siaya	6,891	61,104	11%
Taita-Taveta	3,855	23,984	16%
Tana River	3,150	40,847	8%
Tharaka-Nithi	6,386	42,047	15%
Trans Nzoia	4,868	19,439	25%
Turkana	5,548	25,509	22%
Uasin Gishu	3,531	21,219	17%
Vihiga	4,826	19,129	25%
Wajir	6,032	43,766	14%
West Pokot	4,176	28,258	15%
Average	6,111	36,424	17%

Source: KPMG/SDHUD household survey

The table below provides an overview of the percentage of income spent towards rent across all the income segments. We note that the lowest income group spends the largest percentage of its income on rent at 77%, followed by the second lowest income group which spends 39% of its income on rent. It appears that the more a household earns, the lower the percentage of its income is spent on rent.

Table 66: Rent to income average across income segments

Income band	Average Rent	Average Income	Rent as percentage of income
0 - 4,999	2,157	2,793	77%
5,000 - 9,999	2,589	6,622	39%
10,000 - 14,999	3,661	10,739	34%
15,000 - 19,999	4,039	15,591	26%
20,000 - 24,999	4,883	20,304	24%
25,000 - 29,999	5,029	25,676	20%
30,000 - 49,999	7,197	35,277	20%
50,000 - 99,999	9,818	61,807	16%
100,000 +	15,573	161,691	10%
Average	6,188	36,399	17%

Source: KPMG/SDHUD household survey

A3.4 Financing

Cost of the house

The average purchase price per house in Kenya is about Ksh 1.4 million. The cheapest place to buy a house is Bomet, with an average of Ksh 35,000. The most expensive is Mombasa with Ksh 8.25 million.

Table 67: Average cost of a house per county

County	Average Purchase Price
Bomet	35,000
Bungoma	100,000
Elgeyo-Marakwet	500,000
Kakamega	500,000
Kericho	1,000,000
Kiambu	350,000
Kisumu	3,200,000
Meru	1,200,000
Mombasa	8,250,000
Nairobi	446,250

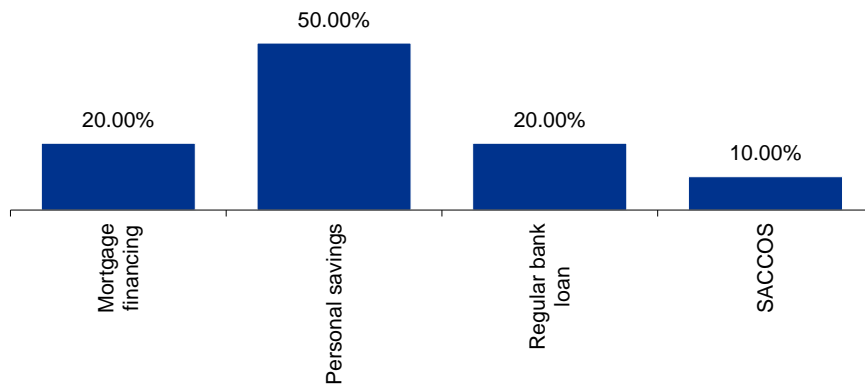
County	Average Purchase Price
Nyamira	825,000
Nyeri	200,000
Samburu	1,500,000
Tana River	400,000
Average	1,398,571

Source: KPMG/SDHUD household survey

Mode of financing

A majority of the respondents indicated that they used Personal Savings to finance their home purchases. Only 16% of the respondent indicated that they used mortgages.

Figure 52: Mode of financing for housing



Source: KPMG/SDHUD household survey

Table 68: Mode of financing for housing across each income segment

Income band	Mortgage financing	Personal savings	Regular bank loan	SACCO S
10,000 - 14,999	0%	100%	0%	0%
15,000 - 19,999	0%	0%	0%	100%
20,000 - 24,999	26%	74%	0%	0%
25,000 - 29,999	0%	100%	0%	0%
30,000 - 49,999	34%	31%	0%	35%
50,000 - 99,999	0%	8%	92%	0%
100,000 +	26%	28%	45%	0%
Average	19%	42%	30%	9%

Source: KPMG/SDHUD household survey

Table 69: Mode of financing for housing across counties

County	Mortgage financing	Personal savings	Regular bank loan	SACCO S
Bomet	0%	100%	0%	0%
Bungoma	0%	52%	48%	0%
Elgeyo-Marakwet	0%	0%	100%	0%
Kakamega	0%	0%	100%	0%

Kericho	0%	100%	0%	0%
Kiambu	0%	50%	0%	50%
Kisumu	0%	100%	0%	0%
Meru	0%	100%	0%	0%
Mombasa	100%	0%	0%	0%
Nairobi	53%	18%	0%	29%
Nyamira	0%	50%	50%	0%
Nyeri	0%	100%	0%	0%
Samburu	0%	100%	0%	0%
Average	16%	50%	26%	7%

Source: KPMG/SDHUD household survey

Perception of the public towards the mortgage market.

On average, Kenyans find it difficult to obtain a loan. The findings from the survey affirmed that position with the lowest income band indicating that it was very difficult to obtain a mortgage.

Table 70: Perception of ease of obtaining a mortgage

Income bands	Don't know	Very difficult	Somewhat difficult	Somewhat easy	Very easy
0 - 4,999	28%	41%	14%	12%	6%
5,000 - 9,999	45%	24%	17%	7%	6%

10,000 - 14,999	38%	36%	11%	8%	7%
15,000 - 19,999	26%	38%	23%	9%	5%
20,000 - 24,999	31%	31%	22%	13%	4%
25,000 - 29,999	25%	49%	14%	9%	3%
30,000 - 49,999	25%	39%	20%	10%	6%
50,000 - 99,999	21%	36%	27%	11%	5%
100,000 +	11%	38%	34%	11%	6%
Grand Total	27%	36%	21%	10%	5%

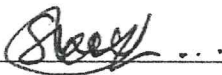
Source: KPMG/SDHUD household survey

10 Sign off

We confirm that the contents of this Demand Market Study report meet the requirements of the scope of the Contract.

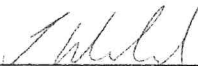
KPMG Representative:

Name Sheel Gill

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Name James Woodward

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Name 

Signature Charles Kinga Mwaura

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