Executive Summary

This study deepens the understanding of how the construction value chain impacts the affordable housing market in Kenya, and how this in turn impacts the Kenyan economy and its growth prospects. This enables the development and implementation of strategies to stimulate the housing sector in Kenya and assists in identifying potential areas of investment that can either fill existing gaps within the housing construction value chain or assist in reducing the costs of building materials and supporting services in ways that make housing more affordable and accessible to a larger proportion of the Kenyan population. In order to quantify the costs and composition of costs of housing in Kenya, CAHF’s Housing Cost Benchmarking methodology has been applied to ascertain detailed cost breakdowns of three benchmarked housing products in Kenya. These are compared with a costing for exactly the same product in South Africa, as a means of identifying cost differences and anomalies for closer analysis.

A housing market is shaped by the interplay between the number and incomes of households (the household income profile), where these households live (rural versus urban areas), the tenure and housing conditions they face (bungalows, flats, slums, etc.) and their effective demand for housing (that is, their ability to access finance to rent or purchase housing, their willingness to do so, and the availability of suitable housing products on the market). Available data suggests that 64 percent of Kenyan households own their accommodation, and 36 percent rent. Of the 32 percent of households that live in urban areas, 70 percent rent and 30 percent own, whereas in rural areas, 88 percent own and 12 percent rent. The predominant forms of housing in urban areas are bungalows (41 percent), medium and high-rise flats (21 percent), Swahilis (21 percent), and Shanties (13 percent). It is believed that over 90 percent of households in Nairobi rent. Demand for affordable housing far outstrips supply not only in the main towns and cities, but also in secondary towns and rural areas. With estimated ‘backlogs’ of over two million units (World Bank, Kenya Economic Update, 2017) many lower income urban households live in single-room accommodation and Shanties.

Financing models applied by formal institutions are limited in scope and scale and exclude the majority of low- and middle-income households from access to housing finance. Kenya’s mortgage loan sector remains very limited with only 24,458 mortgages in 2015 with an outstanding book value of KES203.3 billion (US$1.97 billion) – equivalent to only 2.5 percent of GDP. Notwithstanding Kenya’s growing construction of affordable houses in formally constructed projects, the vast majority of houses built in Kenya are constructed by households and micro-developers one at a time. The formal construction industry is estimated to produce less than 10 percent of total house production, and all of this is at the upper end of the affordability pyramid.

CAHF’s Housing Economic Value Chain (HEVC) framework has been used to quantify the direct impact of housing construction and housing rental on the gross domestic product (GDP) of Kenya. This analysis quantifies intermediate inputs into housing construction and housing rental from ‘upstream’ primary, secondary and tertiary economic sectors. Based on available statistics, the value of housing construction in 2016 was KES272 billion (US$2.6 billion). This housing output comprised KES119 billion (US$1.2 billion) in gross value added and a further KES153 billion (US$1.5 billion) in intermediate inputs purchased from other sectors of the economy. Intermediate inputs were sourced largely from the secondary sectors (60 percent) followed by primary sectors (32 percent) and tertiary sectors (the remaining 8 percent). The value added in housing construction contributed 2.8 percent of Kenya’s GDP in 2016, while intermediate inputs were equivalent to 3.6 percent of GDP, and total domestic production was around 6.3 percent.

Apart from some overlap in relation to maintenance and service activities, housing rental and associated real estate activities require different intermediate inputs and have links with different upstream sectors from those of the housing construction sector. The estimated value chain for housing rental in Kenya in 2016 reflects total domestic production of housing rental and associated services of KES85.1 billion (US$838 million), made up of intermediate inputs of KES9.8 billion (US$97 million) and GVA of KES75.3 billion (US$742 million). When compared with housing rental markets in some other countries (most notably South Africa and Nigeria), the rental market in Kenya is substantially smaller in scale and has more limited linkages to other sectors of the economy. This suggests that housing rental products in Kenya are less sophisticated and that housing rental currently has a much smaller direct impact multiplier than similar activities in countries such as Nigeria and South Africa. Viewed positively, this could be interpreted as providing substantial potential for future growth and development – particularly within the context of rapid urbanisation and rising urban incomes.

1 Exchange Rate: 1US$ = KES201.5
In order to compare housing costs in Kenya with those available in other countries, CAHF undertook a cost benchmarking exercise, that found that over half of formal housing costs are not construction-related but linked to other parts of the housing construction value chain with land and titling, bulk and internal infrastructure provision being significant cost drivers over and above the high skilled labour costs and very high costs of manufactured building materials inputs. Affordable housing strategies and projects must include and proactively develop the capacities of large, medium and small local developers and contractors, as well as the accommodation production capacity of households and small-scale landlords. Approaches to improving access for local companies to affordable housing developments are required, as are strategies to stimulate the growth and development of household construction and small-scale rental developments. This must look at programme design, tendering procedures and specified plans, standards and materials that encourage the growth of local skills, development capacity and manufactured products.

A stronger and larger localised manufacturing sector supporting the development of more, affordable housing creates a virtuous cycle of affordable home production, manufacturing growth, employment creation and economic prosperity. Overall, Kenya has experienced declining global competitiveness in building materials over the past five years, with relatively few product categories gaining global market share. If the affordable housing element of the ‘Big Four’ agenda is to optimally stimulate the Kenyan economy, it is essential that intermediate industries supplying affordable housing and other construction sectors are also developed.

An affordable housing sector that consistently creates value within Kenya’s economy must take a long-term, systemic view of scaling up housing production and not a short-term programme approach. It must become deeply integrated into Kenya’s local manufacturing, construction and financial services sectors, and must be dedicated to meeting the accommodation demand profile of Kenyan households (and not only the formal upper and upper-middle income groups). Finally, it must build consistent and growing demand for locally manufactured intermediate inputs and assist to develop a local cadre of talented tradespeople and professionals working in the construction industry. This requires systemic changes, rather than special dispensations under the ‘Big Four’ programme that are more likely to create price bubbles, materials shortages and a reliance on expensive import leakages of skills, development capacity and materials.
Contents

Executive Summary .............................................................................................................................................. 1
Glossary .................................................................................................................................................................. 4
1. Introduction ...................................................................................................................................................... 7
2. Conceptual Framework for Affordable Housing ........................................................................................... 7
3. Overview of Kenya’s Affordable Housing Market .......................................................................................... 9
4. Economic Structure and Impact of Housing Construction ........................................................................... 11
5. Economic Structure and Impact of Housing Rental in 2016 ....................................................................... 12
6. The Combined Contribution of Housing Construction and Housing Rental to Kenya’s Economy in 2016 .... 14
7. Economic Implications of the ‘Big Four’ Affordable Housing Agenda ............................................................ 14
8. Revealed Competitiveness of Kenyan Exports of Building Materials ............................................................. 15
9. Housing Cost Benchmarking ....................................................................................................................... 17
10. Conclusions and Recommendations ........................................................................................................ 20
Annexure A: Study methodology .................................................................................................................... 24
Annexure B: Housing roles and responsibilities in Kenya .................................................................................... 25
Annexure C.1: Sources and methods used in the construction of the housing construction value chain ............ 27
Annexure C.2: Sources and methods used in the construction of the housing rental value chain .................... 28
Annexure D: Housing cost benchmarking overview .......................................................................................... 29
Annexure E: Summary of engagements with Kenyan developers .................................................................... 33
References ............................................................................................................................................................ 34

List of figures

Figure 1: Kenya household income, tenure distribution and housing affordability (2018) ........................................ 8
Figure 2: Housing production value chain ........................................................................................................ 9
Figure 3: Economic value chain for housing construction in Kenya in 2016. ......................................................... 12
Figure 4: Estimated economic value chain for housing rental in Kenya in 2016 ..................................................... 13
Figure 5: Consolidated economic value chain of housing construction and housing rental activities in Kenya in 2016 .................................................................................................................... 14
Figure 6: Benchmarked housing costs for Nairobi, Kenya; Johannesburg, South Africa & Kigali, Rwanda ...... 18

List of tables

Table 1: Indicative house costs and household affordability assuming full land and infrastructure subsidy ....... 10
Table 2: Implications of the scaling up of affordable housing under the ‘Big Four’ agenda ................................ 15
Table 3: Revealed competitiveness of Kenya’s major building materials supply sectors (2013-2017) .................... 16
Table 4: Revealed competitiveness of Kenya’s building materials sector (2016). .................................................. 17
Table 5: Percentage contribution of top five materials categories in Kenyan housing typologies .................... 19
Table 6: Benchmarked level one costs of five Kenyan house types (2018) ......................................................... 30
Glossary

**Domestic production**: The local (in this case, Kenyan) production of goods and services within a particular geographic area – whether for consumption in that area, or for export.

**Domestic supply**: The supply of goods and services for consumption within a country's (in this case, Kenya's) borders - regardless of whether those products were produced locally or imported.

**Economic value chain**: An interlinked set of value-adding activities that convert inputs (for example, raw materials, or labour) into outputs (for example, window frames, or geysers) in the process of producing both intermediate inputs for use within other economic value chains, and final products.

**Factor income**: Income received from the different factors of production, including land (rent), labour (wages) and capital (profit).

**Final demand**: The total value of goods and services that are purchased in their final form in an economy in a given period. In national accounts terms, this includes products that are consumed by households and by government, capital goods that form part of gross capital formation, and products that are exported.

**Full-time equivalent employment**: The hours worked by a “typical” full-time employee in a particular sector or industry in a given period (day/week/month/year). The concept is used to convert the hours worked by part-time employees into the hours worked by full-time employees. For example, if a particular industry sector currently operates on a basis where full-time employees work 40 hours per week, and three people are employed on a part-time or casual basis to work 20 hours per week, their labour collectively represents 1.5 full-time equivalent employment opportunities.

**Government consumption**: Government expenditure used for the purchase of final goods and services. This excludes government expenditure on capital assets, which are accounted for under gross fixed capital formation.

**Gross domestic product (GDP)**: The value of all goods and services produced within a particular geographic area (usually a country, in this case Kenya) within a particular period. It can be measured in three ways: i) as the sum of all factor incomes (labour remuneration, interest, rent and profits) earned within the defined geographic area (the income method); ii) as the value added in each sector of the economy (the production method); and iii) as expenditure on goods and services in their final form (the expenditure method). The first two methods measure the value of aggregate supply in the economy, while the third measures aggregate demand. Differences in the valuation of each method arise because of the levying of indirect taxes and subsidies at different stages of the production process, and at the final point of sale. The expenditure method is usually valued at market prices and takes account of all indirect taxes and subsidies. The production method is usually valued at basic prices and includes only indirect taxes and subsidies on production processes.

**Gross fixed capital formation (GFCF)**: The expenditure on capital assets (buildings, civil works, machinery and equipment, transport equipment, computer and telecommunications equipment, research and development, computer software, mineral exploration, cultivated biological resources that yield repeat products - such as vineyards and orchards) - and transfer costs. It does not account for the consumption (depreciation) of fixed capital, and also does not include land purchases. The value of housing construction in a particular period (adjusted for work on hand at the start of the period) is included in GFCF.

**Gross operating surplus (GOS)**: Represents the aggregate of returns to land (rent), capital (interest) and entrepreneurial endeavours (profits). This is often referred to generically as ‘returns to capital’. It reflects that part of the value added by a company that is not attributable to labour.

**Gross value added (GVA)**: Represents the payments (returns) made to the owners of the different factors of production (labour, land, capital and entrepreneurship) by a producer of goods and services in a particular period. It reflects the difference between the sales/income of the producer and the payments made to third-party suppliers of intermediate goods and services. The sum of the value added by each sector or industry in an economy is equivalent to the GDP of that economy, but differences in valuation can arise due to the inclusion or exclusion of indirect taxes and subsidies on production processes and products. GVA is typically valued at basic prices or factor cost, while GDP is usually valued at market prices (inclusive of all indirect taxes and subsidies).
**Highly skilled employment:** Employment requiring a high level of skill, often at a senior management or professionally certified level.

**Household consumption expenditure:** Expenditure on final goods and services by households, or on behalf of households (for example, when the state subsidises the cost of housing which is transferred to a household). The purchase of these goods and services may be facilitated by the factor incomes of the households themselves (earned income), or from transfers and subsidies from government or individuals outside the household unit (unearned income).

**Imports and Exports:** An import is a good or service brought into a country from another country. An export is a good or service taken from a country to another. These imports and exports may be in either a final, or intermediate form. For simplicity, we consider houses themselves to be supplied and demanded only within the domestic market, albeit that small numbers of prefabricated houses may be exported or imported.

**Imputed rent (also referred to as owners’ equivalent rent):** Represents the opportunity cost of owning and living in a property. Choosing to occupy a property that you own means that any rent that could have been earned on that property is foregone. According to the OECD, “Imputed rents are defined as rental equivalents – that is, the estimated rent that a tenant would pay for identical accommodation let unfurnished, taking into consideration factors such as the type of dwelling (single-family or multi-family), its size (useable surface, number of rooms), its facilities (running water, indoor toilet and bathroom, electricity, central heating, etc.), its location (city centre, suburban or rural) and neighbourhood amenities.” Failure to take account of imputed rents in the national accounts makes it difficult to compare the GDP of countries with significantly different levels of private home ownership, and – in the case of a single country with rapidly changing home ownership patterns – to compare GDP from one period to the next. For this reason the rental equivalent value of owner-occupied dwellings are imputed and the GDP of the country (and its components) is adjusted accordingly. Methods of determining the imputed rent vary depending on the nature and extent of the rental market in that country and the data available. The accuracy of these estimates depends on the efficient functioning of rental markets across the entire spectrum of housing options and locations.

**Informal employment:** The informal sector or informal economy represents that part of the total economic activity that is not registered with, and directly monitored by, relevant government departments and agencies and not directly taxed (it will typically be subject to at least some forms of indirect taxation such as value added tax). Informal employment relates to all people deriving income from this informal activity. Because of its prevalence, most countries include some estimates of the economic contribution of the informal sector in the construction of their national accounts.

**Intermediate demand:** Demand for a product that undergoes further transformation through value adding activities during a production process. The output of a particular sector or industry can be used to satisfy either intermediate demand from other sectors and industries, or final demand.

**Intermediate inputs:** Goods and services that are inputs into a production process and that undergo further transformation as a result of value-added activities during the production process. For example, bricks, sand and cement are just some of the intermediate inputs that are used in the process of producing a house by the construction sector.

**Labour:** Economic measure of work done by human beings. Labour is a factor of production that is remunerated by wages and salaries that constitute one possible source of income for households.

**Multiplier effect:** A multiplier effect is an economic impact that arises from an initial economic stimulus – such as the sale of a house – that causes changes in other related economic variables (value added, output, employment, tax collections, imports etc.). The cumulative impact of these changes is typically greater than (a multiple of) the initial stimulus that caused them.

**System of National Accounts (SNA):** The implementation of complete and consistent accounting techniques for measuring the economic activity of a nation. Most countries have adopted an SNA.
that complies with guidelines collectively developed by the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank.³

**Net Indirect Taxes**: The value of indirect taxes paid, less any subsidies received, by an economic actor. An indirect tax may be levied on part of a production process (such as a skills levy on labour remuneration) or on a product (such as an excise duty or value added tax). Indirect taxes are distinguished from direct taxes (such as corporate tax or personal income tax).

**Primary sector**: Those sectors of the economy related to primary industries including agriculture, forestry, fishing and mining and quarrying. They are often referred to as extractive industries because they extract resources and products from the environment. These extracted products may be “renewable” or “repeatable” - as in the case of sustainable agriculture and fishing - or “non-renewable” - such as metals and minerals extracted by mining and quarrying.

**Secondary sector**: Those sectors of the economy related to secondary industries including manufacturing, electricity, gas and water and construction works of finished goods and services.

**Semi-skilled and unskilled employment**: Employment requiring less skills than skilled employment.

**Skilled employment**: Employment requiring a special skill, training, knowledge, and (usually acquired) ability to be productive. Organisationally, skilled employment typically includes artisans, supervisors and lower levels of management.

**Tertiary sector**: Those sectors of the economy that produce and sell a wide range of services including wholesale and retail trade, transport, storage and communication, financial, insurance, professional business advisory, and community and personal services. Because of this the tertiary sector is often referred to as the services sector.

1. Introduction

The World Bank appointed the Centre for Affordable Housing Finance in Africa (CAHF) to undertake a ‘deep dive’ analysis of the affordable housing market in Kenya. This is one of the three analyses of potential economic lead sectors being undertaken as stage two of the Country Private Sector Diagnostic (CPSD) pilot study by the World Bank and International Finance Corporation (IFC) for Kenya. The other two sectors being studied are manufacturing and agro-processing. This study deepens the understanding of how the construction value chain impacts the affordable housing market in Kenya, and how this in turn impacts the Kenyan economy and its growth prospects. This enables the development and implementation of strategies to stimulate the housing sector in Kenya and assists in identifying potential areas of investment that can either fill existing gaps within the housing construction value chain, or assist in reducing the costs of building materials and supporting services in ways that make housing more affordable and accessible to a larger portion of the Kenyan population.

There is considerable synergy between the focus of this CPSD and the ‘Big Four’ agenda announced by Kenya’s President Uhuru Kenyatta on 12th December 2017. The ‘Big Four’ agenda commits his administration to a five-year programme to meet ambitious targets for manufacturing growth, improved food security, universal health care and affordable housing development. With respect to affordable housing, the aim is to construct 500,000 new housing units across Kenya’s major cities that are accessible to lower income households for purchase by 2022. The affordable housing programme is intended to simultaneously create 350,000 jobs.

While information on implementation strategies is limited, 400,000 houses are planned for construction through Public-Private Partnerships and 100,000 units will be constructed under a ‘social housing’ scheme. Government has committed KES 40 billion (US$ 387 million) of monetary and legislative incentives to the private sector to encourage PPPs. This includes the promise of 7,000 acres of serviced land and a decreased tax rate for developers who construct more than 400 “low cost” houses annually, with further tax reductions for developers producing over 1,000 units per annum. The new budget has increased certain taxes (such as the fee on M-Pesa transactions) to generate revenue to fund aspects of the programme.

This study seeks to test prevailing assumptions around what housing is affordable to different groups of Kenyan households, by accurately quantifying the costs of constructing different types and sizes of housing units in Kenya and assessing affordability based on the current household income distributions and mortgage finance rates. It also seeks to estimate the likely impact of scaling up housing construction—in accordance with the ‘Big Four’ agenda—on the Kenyan economy and employment levels, under different scenarios. This includes an analysis of Kenya’s international trade in building materials, in order to identify import dependencies and product categories in which Kenya has a revealed competitive advantage that could be used to leverage higher economic growth, lower import dependence and create relatively more affordable housing.

2. Conceptual Framework for Affordable Housing

This study is focused on the ‘affordable housing’ market in Kenya. Given the lack of a clear definition of ‘affordable’, we take the view that the analysis is intended to consider how the housing sector can benefit households as low down the income pyramid as possible. In order to quantify the costs and composition of costs of housing in Kenya, CAHF’s Housing Cost Benchmarking methodology has been applied to ascertain

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5 “Over the next 5 years, we will create 500,000 new home owners through the facilitation of affordable housing; and a home ownership programme that will ensure every working family can afford a decent home by injecting low cost capital into the housing sector. Reforms will be undertaken to lower the cost of construction and improve accessibility to affordable mortgages.” (Presidency Website, 2018).

6 ‘Flagship Project’ sites have been secured in Park Road (1,640 units), Starehe (3,500 units), Shauri Moyo (5,300 units) and Mavoko. For instance, the Mavoko project in Machakos County that comprises 5,500 “Low Cost” two and three-bedroom housing units is proposed on 55 acres of land. Thirty-five local and international companies have been enlisted to implement the programme which will be driven by an Engineering and Procurement Contract that will outline responsibilities for design, procurement, construction and handover of houses. Government will provide land, roads, power and water (Miloyo, EAPS Presentation, 2018).

detailed cost breakdowns of three benchmarked housing products in Kenya. These are compared with a costing for exactly the same product in South Africa, as a means of identifying cost differences and anomalies for closer analysis.

A housing market is shaped by the interplay between the number and incomes of households (the household income profile), where these households live (rural versus urban areas), the tenure and housing conditions they face (bungalows, flats, slums, etc.) and their effective demand for housing (that is, their ability to access finance to rent or purchase housing, their willingness to do so, and the availability of suitable housing products on the market). Figure 1 illustrates these factors on a notional ‘housing affordability and sub-market pyramid’. This shows the rural and urban distribution of households according to household income and shows notional affordability for housing (assuming availability of credit and a market that can supply accommodation at these prices). The conceptual housing product schematics and illustrated housing options indicate the type of accommodation that is pervasive in each of these sub-markets. This indicates whether accommodation in this sub-market is likely to be formally constructed (blue) or informally constructed (tan), whether it has land tenure and services (brown stand) and whether it is likely to be single or multi-storey.

Figure 1: Kenya household income, tenure distribution and housing affordability (2018). Source: Own calculations based on Kenya census and other affordability data.

In order to determine what influences the cost and availability of houses in Kenya, housing construction and housing rental value chain assessments were undertaken. An economic value chain describes the linkages and quantifies the economic value creation in an economy arising from a specific type of activity. Producing residential housing involves construction value-adding activities (digging and laying foundations, bricklaying, plastering carpentry, plumbing, electrical, tiling, roofing etc.) as well as the material and service inputs that such activities require. Similarly, housing rental activities also require intermediate inputs from other sectors of the economy. The combined value of the intermediate inputs purchased in a particular period and the value added by the different factors of production engaged in the construction and rental processes represents the output of the housing construction and housing rental “sectors” in that period. This output is then used to meet the demand for housing and rental accommodation from different consumer groups. The housing construction is regarded as gross fixed capital formation because the housing units constructed or improved form part of the fixed capital stock of the country. Housing rental output is part of household consumption expenditure.

Furthermore, the housing market is analysed in relation to the housing production value chain, illustrated in Figure 2. This considers at what points costs are incurred in the production of housing, and to what extent these influence the overall cost of new, affordable housing in the market.
3. Overview of Kenya’s Affordable Housing Market

Kenya’s population was estimated to be 48.5 million (World Bank, 2016) and is growing at 2.6 percent per annum. Thirty-two percent of Kenyans are urbanised but urban populations are growing at an estimated 4.3 percent per annum. This means that over half of annual household growth is in urban areas, which will continue to place significant urbanisation pressures on the major cities. In 2017, there were 1.9 million households in Kenya, and this increases by around 300,000 per annum with around 155,000 of these households located in urban areas.

Kenya’s GDP has grown rapidly since 2005, with growth in excess of 5 percent per year over the last five years (till 2016). While this is positive, national debt has reached 57 percent of GDP, having risen rapidly from 38 percent in 2012. This will place significant pressure on resources required to implement the ‘Big Four’ agenda, and force government to continue issuing new bonds to the financial market to fund the deficit. While the economy continued to grow overall, there was a decline in construction; mining and quarrying; and the financial sector in 2016.

Rapid urbanization has created heterogenous housing sub-markets which demand a diverse range of residential products - including different forms of housing typologies and forms of tenure. Sixty-four percent of Kenyan households own their accommodation, and 36 percent rent. Of the 32 percent of households that live in urban areas, 70 percent rent and 30 percent own, whereas in rural areas, 88 percent own and 12 percent rent.

The predominant forms of housing in urban areas are bungalows (41 percent), medium and high-rise flats (21 percent), Swahilis (21 percent), and Shanties (13 percent). It is believed that in Nairobi over 90 percent of households rent. This is an indication both of the lack of affordable accommodation available to purchase, as well as the number of households who retain ties to accommodation that they own in rural and peri-urban areas.

Kenya is a developing economy, and average household incomes are low, with the majority of incomes being generated informally. This places severe pressure on housing affordability. Table 1 shows the cost, repayment and proportion of Kenyan households who could afford formally constructed homes with mortgage financing.

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10 The Swahili house connotes communal living in a formal structure usually comprising separate rooms often along three walls, and open or closed common areas, and a separate area for toilet(s), shower(s) and kitchen(s) which are shared along the fourth wall. There would be closed and open common spaces inside the structure. This includes long vertical rooms with shared toilet, shower, and kitchen facilities.
11 These figures are calculated using the CAHF Housing Affordability Calculator, based on an estimated prevailing interest rate of 17.1 percent over 10 years, with the borrower paying a 10 percent deposit. Lending data provided by the Banking Supervisory Report, 2016. The loans/products costing below US$20,000 are purely indicative, as few formal financial institutions would provide mortgages of this size. Note too that the recent interest rate cap has increased affordability but has inadvertently reduced the availability of mortgage finance. See http://housingfinanceafrica.org/dashboards/calculating-mortgage-and-housing-affordability-in-africa/
It is estimated that 53 percent of urban renters pay less than KES 2 000 per month (US$ 19) in rental, 26 percent between KES 2 000 and KES 4 000 (US$ 19 to US$ 38), 16 percent between KES 4 000 and KES 10 000 (US$ 38 to US$ 97), and only 5.5 percent above KES 10 000.

Demand for affordable housing far outstrips supply, not only in the main towns and cities, but also in secondary towns and rural areas. With estimated ‘backlogs’ of over two million units (World Bank, 2017) at 35 percent (World Bank, 2017a) of lower income urban households live in single-room accommodation and Shanties. A number of challenges contribute to constrained effective housing demand. The limited supply of affordable and developable land and lower-cost accommodation products is a key barrier to the production of affordable housing, and is attributed to discordant systems of land tenure, titling and release and land speculation. Inefficient systems of spatial planning and land use management further exacerbate land release. Development and maintenance of physical and social infrastructure, including transport systems and municipal infrastructure provision, increase the cost of delivering serviced land at reasonable prices.

Financing models applied by formal institutions are limited in scope and scale and exclude the majority of low- and middle-income households from access to housing finance. Kenya’s mortgage loan sector remains very limited with only 24,458 mortgages in 2015 with an outstanding book value of KES 203.3 billion (US$ 1.97 billion) – equivalent to only 2.5 percent of GDP.

Savings and Credit Cooperative Societies (SACCOS) have overtaken commercial banks and mortgage providers in the provision of mortgage and housing construction loans and now account for a large number (over 200 000 loans) of home finance loans in Kenya. Increasingly, SACCOS also negotiate access to land and housing for their members but have limited governance and administrative capacity to do so. The Kenya Union of Savings and Credit Co-operatives (Kuscco); the proposed Housing Microfinance Fund (supported by the World Bank) and the recently launched Kenya Mortgage Refinance Company (KMRC) are welcome initiatives to increase the flow of finance into housing lending.

The recently imposed cap on interest rates may have adversely affect one of Africa’s most encouraging affordable housing markets by limiting the spread available on housing finance and thereby making lower-risk government bonds a more attractive investment option. However, other policies are being implemented, such

Table 1: Indicative house costs and household affordability assuming full land and infrastructure subsidy (2018).

<table>
<thead>
<tr>
<th>Product Cost ($)</th>
<th>Product Cost (KES millions)</th>
<th>Mortgage Repayment ($/month)</th>
<th>Mortgage Repayment (KES/month)</th>
<th>HouseHold Affordability (% of all households)</th>
<th>Current Formally Constructed Benchmarked Product Specification Affordable (with no subsidy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$65 000</td>
<td>KES 6.5</td>
<td>$1 134</td>
<td>KES 114 182</td>
<td>0.3%</td>
<td>35m² house on 120m² land or 60m² apartment</td>
</tr>
<tr>
<td>$60 000</td>
<td>KES 6.0</td>
<td>$1 047</td>
<td>KES 105 422</td>
<td>0.3%</td>
<td>45m² house on 120m² land or 50m² apartment</td>
</tr>
<tr>
<td>$50 000</td>
<td>KES 5.0</td>
<td>$872</td>
<td>KES 87 802</td>
<td>0.6%</td>
<td>35m² house on 120m² land or 40m² apartment</td>
</tr>
<tr>
<td>$40 000</td>
<td>KES 4.0</td>
<td>$698</td>
<td>KES 70 282</td>
<td>1.0%</td>
<td>30m² house on 120m² land or 35m² apartment</td>
</tr>
<tr>
<td>$30 000</td>
<td>KES 3.0</td>
<td>$523</td>
<td>KES 52 661</td>
<td>1.4%</td>
<td>25m² house on 120m² land or 25m² apartment</td>
</tr>
<tr>
<td>$20 000</td>
<td>KES 2.0</td>
<td>$349</td>
<td>KES 35 141</td>
<td>3.8%</td>
<td>20m² house on 120m² land or 20m² apartment</td>
</tr>
<tr>
<td>$15 000</td>
<td>KES 1.5</td>
<td>$262</td>
<td>KES 26 381</td>
<td>5.0%</td>
<td>120m² serviced site</td>
</tr>
<tr>
<td>$10 000</td>
<td>KES 1.0</td>
<td>$174</td>
<td>KES 17 520</td>
<td>10.2%</td>
<td>Basic serviced site or upgrading scheme</td>
</tr>
<tr>
<td>$5 000</td>
<td>KES 0.5</td>
<td>$87</td>
<td>KES 8 750</td>
<td>33.4%</td>
<td>Land purchase / Incremental building only</td>
</tr>
</tbody>
</table>

14 The National Cooperative Housing Union (NACHU) has over 800 members, many of whom undertake small-scale (under 50 units) developments on behalf of their members.
15 The law imposes a ceiling on the lending rate by banks and other financial institutions to a maximum of 4% above the Central Bank of Kenya (CBK) base rate. This law is intended to reduce indiscriminate lending practices and to make finance more affordable.
as the halving of corporate tax for companies constructing over 400 units of affordable accommodation per year, in order to incentivise affordable housing developers.¹⁶

An overview of Kenya’s housing policy and institutional framework is included in Annexure B. Kenya’s housing policy is not clear about the definition of ‘affordable’ and ‘low cost’ housing, and focuses almost exclusively on fully complete, conventionally constructed houses and flats. While most developments target new formal products at the US$40,000+ (KES4 million) market, this excludes over 90 percent of households from the formal housing market (assuming prevailing mortgage terms). The definition of Kenya’s “affordable housing market” must be broadened to include much more affordable, sub-KES2 million (US$20,000) accommodation options and incremental solutions.

Kenya’s development and construction sectors are polarised between small local informal producers (households and small informal businesses developing one house at a time, often incrementally) and large formal (mostly foreign) development and construction companies. A summary of findings from interviews with key developers in Kenya is included in Annexure E. A limited number of mid-sized local developers and contractors exist but continue to struggle to gain recognition and access to formal housing project opportunities. There are also allegations of poor-quality construction in both the informal and formal housing markets. Low quality materials and construction are a problem in large housing projects, while informally developed accommodation often does not meet Kenya’s outdated building standards. Notwithstanding Kenya’s growing construction of affordable houses in formally constructed projects, the vast majority of houses built in Kenya are constructed by households and micro-developers one at a time. The formal construction industry is estimated to produce less than 10 percent of total house production, and all of this is at the upper end of the affordability pyramid. It is critical that affordable housing policy and strategy engage with the mass development market that will continue to develop more accommodation than the formal process into the future.

Kenya’s housing sector is also hampered by a limited flow of investment finance for the production and maintenance of residential markets. This finance ranges from long-term investment and construction finance for developers to investment in the construction, materials and housing-production value chain, as well as real-estate investment and end-user finance. The various contributors to the lack of investment across the housing supply and demand value chain ultimately contribute to increased costs of construction for developers, as well as low consumer affordability levels.

4. Economic Structure and Impact of Housing Construction

CAHF’s Housing Economic Value Chain (HEVC) framework has been used to quantify the direct impact of housing construction and housing rental on the gross domestic product (GDP) of Kenya. This analysis quantifies intermediate inputs into housing construction and housing rental from ‘upstream’ primary, secondary and tertiary economic sectors. Further, the value-added components of residential construction and housing rental—labour remuneration and the gross operating surplus (GOS)—are quantified, as are the impact of net indirect taxes and subsidies that cause the market price of housing and rental products to diverge from their costs of production.

The HEVC methodology uses the best available economic and socio-economic data for Kenya or makes assumptions where relevant data does not yet exist. The HEVC highlights the importance of housing construction as a contributor to gross fixed capital formation (GFCF), shows the potential catalytic role that housing construction and rental activities can play as primary, secondary and tertiary sector stimulants, and illustrates the comparatively high economic value addition and employment creation potential of housing construction and housing rental. The HEVC outcomes can therefore inform the development of more nuanced economic, housing and housing finance policy focused on further stimulating economic growth and affordable housing provision.

Figure 3 shows the housing construction value chain for Kenya for 2016. Based on available statistics, the value of housing construction in 2016 was KES272 billion (US$2.7 billion). This housing output comprised KES19 billion (US$1.2 billion) in gross value added and a further KES153 billion (US$1.5 billion) in intermediate inputs

¹⁶ The Finance Bill (2016) allows developers who construct at least 400 low cost residential houses in a year to enjoy a lower corporate tax rate of 15 per cent (down from the normal 30 per cent), and developers who build at least 1,000 units would be eligible for a corporate tax rate of 20 per cent (Business Daily, 2016).
purchased from other sectors of the economy. Intermediate inputs were sourced largely from the secondary sectors (60 percent) followed by primary sectors (32 percent) and tertiary sectors (the remaining 8 percent). Housing construction GVA at market prices consisted of 52 percent labour remuneration, 44 percent gross operating surplus, and 4 percent indirect taxes less subsidies.

Imports accounted for 9.3 percent of total intermediate inputs, and the equivalent of 16 percent of manufactured inputs. After adjusting for import leakages, it is estimated that housing construction had a direct impact output multiplier of 2.16.

Total employment in housing construction may have exceeded 575,000 in 2016 but more than 90 percent of this is estimated to be informal. The value added in housing construction contributed 2.8 percent of Kenya’s GDP in 2016, while intermediate inputs were equivalent to 3.6 percent of GDP, and total domestic production was around 6.3 percent.

**Figure 3: Economic value chain for housing construction in Kenya in 2016.** Source: Own calculations. Note: Differences in values and percentages due to rounding. KES values were converted to US$ values using an exchange rate of KES101.5/US$.1.

The data sources and assumptions used in the construction of the housing construction value chain are discussed in Annexure C.1.

### 5. Economic Structure and Impact of Housing Rental in 2016

The value added and employment associated with the construction of particular housing stock persists only for the duration of the construction. To be sustained, the completed projects must be replaced with orders for new construction. This is why it is so important for a housing construction sector to consistently receive the same or growing levels of investment if the value chain is to sustain or grow its economic impact. By contrast, rental activities associated with the letting of residential properties tend to persist, and are derived from that proportion of the total housing stock that is made available for rental, not just from new additions to the housing stock.

The housing rental value chain is fundamentally different from the housing construction value chain. Apart from some overlap in relation to maintenance and service activities, housing rental and associated real estate activities require different intermediate inputs and have links with different upstream sectors. Intermediate inputs that are required in support of housing rental activities can range from gardening and landscaping materials, to cleaning materials and products associated with housing maintenance (paints, plumbing and electrical hardware) to cleaning, gardening, security and management services. These are also activities associated with owner-occupied dwellings. However, this study has chosen to focus only on those portions of these activities that can be linked to explicit rental payments.
Figure 4 reflects the estimated value chain for housing rental in Kenya in 2016. It reflects total domestic production of housing rental and associated services of KES85.1 billion (US$838 million), made up of intermediate inputs of KES9.8 billion (US$97 million) and GVA of KES75.3 billion (US$742 million).

Two thirds of intermediate inputs were sourced from secondary sectors and the balance (33 percent) was sourced from the tertiary sectors. The value added by housing rental and associated activities was derived almost exclusively from gross operating surplus (92 percent), with the remaining 8 percent accounted for by labour remuneration. There were apparently no indirect taxes or subsidies to cause the value of production at market prices to diverge from production costs.

Domestic production was only used to satisfy domestic demand – all of which is classified as household consumption expenditure.

Figure 4: Estimated economic value chain for housing rental in Kenya in 2016. Source: Own estimates. Note: Differences in values and percentages due to rounding. KES values were converted to US$ values using an exchange rate of KES101.5/US$1.

When compared with housing rental markets in some other countries (most notably South Africa and Nigeria), the rental market in Kenya is substantially smaller in scale and has more limited linkages to other sectors of the economy. Whereas housing rental activity in South Africa is roughly equivalent in value to housing construction (with 37 percent of households renting in 2011), in Kenya it appears to be only 30 percent of the size of construction value, with 36 percent of Kenyans renting their properties. This suggests that the rents paid in Kenya are generally substantially lower than in South Africa (due in part to much lower levels of urbanisation), and/or that the actual value of rental income is higher than reflected in available data from official sources.

More significantly, the contribution of intermediate inputs to total output is only 12 percent in Kenya, compared with 48 percent in South Africa 2016 and 35 percent in Nigeria. This suggests that housing rental products in Kenya are less sophisticated and that housing rental currently has a much smaller direct impact multiplier than similar activities in countries such as Nigeria and South Africa. Viewed positively, this could be interpreted as providing substantial potential for future growth and development – particularly within the context of rapid urbanisation and rising urban incomes.

The data sources and assumptions used in the construction of the housing construction value chain are discussed in Annexure C.2

6. The Combined Contribution of Housing Construction and Housing Rental to Kenya’s Economy in 2016

Aggregating the corresponding elements of the housing construction and housing rental value chains makes it possible to construct a consolidated value chain that reflects the structure and contribution of both these activities combined. The result is reflected in Figure 5. It reveals domestic production valued at KES357.1 billion (US$3.5 billion), comprising intermediate inputs of KES162.5 billion (US$1.6 billion) and GVA of KES194.6 billion (US$1.9 billion).

Kenya’s secondary sectors (manufacturing, utilities and construction) were the source of 60 percent of intermediate inputs, followed by primary sectors (30 percent) and tertiary sectors (10 percent). In total, intermediate inputs accounted for 46 percent of the value of domestic production, with GVA making up the balance (54 percent). The GVA consisted of gross operating surplus (62 percent), labour remuneration (35 percent) and indirect taxes less subsidies (3 percent).

The combined value of output went entirely to meet domestic final demand (there were no material imports or exports) and was split between gross capital formation (76 percent) and household consumption expenditure (24 percent).

7. Economic Implications of the ‘Big Four’ Affordable Housing Agenda

According to Kenya’s National Bureau of Statistics (KNBS), the average cost of a new house in Nairobi and selected other counties in 2016 was KES6.1 million (US$60 000). Given that average house costs range from KES7.7 million (US$76 000) in Nairobi to only KES214 000 (US$2 100) in Kisumu, this is likely to be an understatement because such costs are generally substantially lower in smaller towns and rural areas than in Nairobi. In 2017, the number of households in Kenya increased by around 300 000 with around 155 000 of these households being located in urban areas and the balance in rural areas. In the absence of a significant increase in homelessness, or notable increase in average household size, a roughly equivalent number of additional housing structures would have needed to be added. This suggests that the average cost of each structure was under KES1 million (US$9 900) – which supports the view that most housing in Kenya is incremental and informal, and that only a small proportion is formal.18

The scaling up of affordable housing under the ‘Big Four’ agenda therefore represents a formalisation of what is already happening in urban areas – rather than a substantial increase in the total number of housing units.

18 Published NISR statistics appear to capture less than 12 000 of these units in selected counties.
being constructed. Based on assumed rates of scaling-up, assumptions regarding the additional cost of the more formal houses, and the imported component of intermediate inputs, the outcomes that may be anticipated from the realisation of the ‘Big Four’ agenda are reflected in Table 2.

<table>
<thead>
<tr>
<th>Year</th>
<th>Assumed Number of Additional Formal Housing Units Built Over Baseline (Number)</th>
<th>Assumed Additional Value per Housing Unit Compared with Informal Baseline19</th>
<th>Implied Additional Gross Value Added Generated (KES bn)</th>
<th>Implied Additional Employment in Housing Construction Generated (Number)</th>
<th>Implied Additional Intermediate Inputs (KES bn)</th>
<th>Implied Additional Imports Assuming Same Import Ratio (KES bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>25 000</td>
<td>3 000 000</td>
<td>32.9</td>
<td>27 136</td>
<td>42.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Year 2</td>
<td>50 000</td>
<td>2 850 000</td>
<td>62.5</td>
<td>51 558</td>
<td>80.0</td>
<td>7.4</td>
</tr>
<tr>
<td>Year 3</td>
<td>75 000</td>
<td>2 707 500</td>
<td>89.1</td>
<td>73 470</td>
<td>113.9</td>
<td>10.6</td>
</tr>
<tr>
<td>Year 4</td>
<td>150 000</td>
<td>2 572 125</td>
<td>163.3</td>
<td>133 594</td>
<td>216.5</td>
<td>20.2</td>
</tr>
<tr>
<td>Year 5</td>
<td>200 000</td>
<td>2 443 519</td>
<td>214.5</td>
<td>176 819</td>
<td>274.2</td>
<td>25.5</td>
</tr>
</tbody>
</table>

Table 2: Implications of the scaling up of affordable housing under the ‘Big Four’ agenda. Source: Own calculations. Note: All values are at 2016 Prices. It has been assumed that the employment opportunities created will be formal at average remuneration rates for construction in 2016.

If the scaling-up of formal housing is accompanied by an effective localisation programme that results in a steady reduction (0.5 percent per year) in the share of imports in intermediate inputs, the value of additional imports required by Year 5 would fall to KES19.1 billion (US$188 million). However, if the local building materials industry is not included in the programme and does not develop the capacity necessary to meet the demand for additional materials, and this then results in 50 percent of additional material inputs having to be imported, the import bill would rise to more than KES82 billion (US$808 million).

It is estimated that over half of the 300 000 new households formed annually are in urban areas. Given the very low rates of formal housing production (estimated to be less than 20 000 units p.a.), the majority of households’ access accommodation by renting informally, with most construction being undertaken on an incremental basis where households have access to land. The predominantly informal nature of housing delivery results in the relatively low levels of intermediate input imports—albeit that in the formal housing markets imports are substantially higher.

If the ‘Big Four’ agenda scales up delivery over five years to construct 500 000 formally constructed units, this could increase the contribution of housing construction to GDP from 6.3 percent, to more than 14 percent, and grow employment in housing construction from 575 000 to more than 750 000.

Demand for intermediate inputs would grow from KES153 billion (US$1.5 billion) to over KES420 billion (US$4.1 billion), which would place significant pressure on imports of intermediate goods if the local manufacturing sector does not adequately respond to this growth in demand. However, if the housing programme is developed in parallel with an effective domestic manufacturing localisation and growth strategy, this could yield much higher multipliers in Kenya’s domestic manufacturing sector.

8. Revealed Competitiveness of Kenyan Exports of Building Materials

An analysis of Kenya’s trade performance in recent years indicates that it has gained global market share (Kenyan exports have increased more rapidly than global exports of the same products) in 13 out of 44 building material product categories, and lost global market share in 31 product categories. In 2017, Kenya had a trade

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19 Assuming a 5 percent Cost Reduction Per Year (KES). It is assumed that with greater production volumes, economies of scale can reduce the average cost of housing units produced.
deficit across all building product categories of almost US$305 million dollars (KES31 billion), with imports of US$391 million and exports of US$86.4 million. Building materials accounted for 1.5 percent of total Kenyan merchandise exports and 2.3 percent of total merchandise imports.

Africa, and particularly the other COMESA states are – by far – the largest market for Kenya’s building materials exports. In 2017 building material exports to other African economies were valued at US$78.5 million, and COMESA member states accounted for more than US$69 million of these exports. The product categories with a revealed competitive advantage are shown in the Tables 3 and 4.

<table>
<thead>
<tr>
<th>Number of categories</th>
<th>Product categories in which Kenya gained global market share between 2013 and 2017</th>
<th>Product categories in which Kenya lost global market share between 2013 and 2017</th>
<th>Product categories in which Kenya gained global market share between 2013 and 2017 in a growing global market</th>
<th>Product categories in which Kenya lost global market share between 2013 and 2017 in a declining global market</th>
<th>Trade balance in 2017 (US$ m)</th>
<th>Share of total merchandise exports in 2017 (percent)</th>
<th>Share of total merchandise imports in 2017 (percent)</th>
<th>Value of exports to Africa in 2017 (US$ m)</th>
<th>Value of exports to COMESA in 2017 (US$ m)</th>
<th>Exports to COMESA as percent of exports to world in 2017</th>
<th>Estimated average tariff in 2017 (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>4</td>
<td>9</td>
<td>31</td>
<td>14</td>
<td>17</td>
<td>44</td>
<td>1.0%</td>
<td>0.1%</td>
<td>14.4%</td>
<td>15.8%</td>
<td>13.8%</td>
</tr>
<tr>
<td>33.0</td>
<td>13.5</td>
<td>19.5</td>
<td>53.4</td>
<td>6.1</td>
<td>47.3</td>
<td>86.4</td>
<td>1.0%</td>
<td>0.3%</td>
<td>14.4%</td>
<td>15.8%</td>
<td>13.8%</td>
</tr>
<tr>
<td>167.1</td>
<td>44.0</td>
<td>123.1</td>
<td>223.9</td>
<td>63.6</td>
<td>160.3</td>
<td>391.0</td>
<td>0.6%</td>
<td>0.2%</td>
<td>14.4%</td>
<td>15.8%</td>
<td>13.8%</td>
</tr>
<tr>
<td>-134.1</td>
<td>-30.5</td>
<td>-103.6</td>
<td>-170.5</td>
<td>-57.5</td>
<td>-123.0</td>
<td>-304.6</td>
<td>0.9%</td>
<td>0.1%</td>
<td>14.4%</td>
<td>15.8%</td>
<td>13.8%</td>
</tr>
<tr>
<td>0.6%</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.9%</td>
<td>0.1%</td>
<td>0.8%</td>
<td>1.5%</td>
<td>1.3%</td>
<td>0.7%</td>
<td>14.4%</td>
<td>15.8%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Value of exports to Africa in 2017 (US$ m)</td>
<td>32.1</td>
<td>12.9</td>
<td>19.1</td>
<td>46.5</td>
<td>5.5</td>
<td>40.9</td>
<td>78.5</td>
<td>14.0%</td>
<td>15.8%</td>
<td>13.8%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Value of exports to COMESA in 2017 (US$ m)</td>
<td>25.4</td>
<td>10.5</td>
<td>14.9</td>
<td>43.8</td>
<td>4.2</td>
<td>39.6</td>
<td>69.2</td>
<td>14.0%</td>
<td>15.8%</td>
<td>13.8%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Exports to COMESA as percent of exports to world in 2017</td>
<td>77.0%</td>
<td>78%</td>
<td>76%</td>
<td>82%</td>
<td>68%</td>
<td>84%</td>
<td>80.0%</td>
<td>14.0%</td>
<td>15.8%</td>
<td>13.8%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Estimated average tariff in 2017 (percent)</td>
<td>14.4%</td>
<td>15.8%</td>
<td>13.8%</td>
<td>17.1%</td>
<td>18.2%</td>
<td>16.2%</td>
<td>16.3%</td>
<td>14.0%</td>
<td>15.8%</td>
<td>13.8%</td>
<td>16.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Average Annual Kenya Export Growth 2013 to 2017</th>
<th>Average Annual World Export Growth 2013 to 2017</th>
<th>Average Net Kenya Export Growth 2013 to 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worked slate and articles of slate or of agglomerated slate (excluding slate granules, chippings ...</td>
<td>185.6%</td>
<td>-3.8%</td>
<td>189.4%</td>
</tr>
<tr>
<td>Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the ...</td>
<td>70.1%</td>
<td>-48.5%</td>
<td>118.6%</td>
</tr>
<tr>
<td>Bars and rods of iron or non-alloy steel, hot-rolled, in irregularly wound coils</td>
<td>63.0%</td>
<td>-4.7%</td>
<td>67.7%</td>
</tr>
<tr>
<td>Screws, bolts, nuts, coach screws, screw hooks, rivets, cotters, cotter pins, washers, incl. ...</td>
<td>40.7%</td>
<td>1.5%</td>
<td>39.2%</td>
</tr>
<tr>
<td>Roofing tiles, chimney pots, cowls, chimney liners, architectural ornaments and other ceramic ...</td>
<td>24.4%</td>
<td>-3.1%</td>
<td>27.6%</td>
</tr>
<tr>
<td>Monumental or building stone, natural (excluding slate), worked, and articles; mosaic cubes ...</td>
<td>20.1%</td>
<td>-3.7%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods (excluding ...</td>
<td>13.4%</td>
<td>-3.2%</td>
<td>16.6%</td>
</tr>
<tr>
<td>Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics; painters' ...</td>
<td>15.1%</td>
<td>1.1%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Pebbles, gravel, broken or crushed stone, for concrete aggregates, for road metallising or for ...</td>
<td>7.8%</td>
<td>-3.3%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Paints and varnishes, incl. enamels, lacquers and distempers (excluding those based on synthetic ...</td>
<td>3.4%</td>
<td>-2.6%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Natural sands of all kinds, whether or not coloured (excluding gold- and platinum-bearing sands, ...</td>
<td>9.9%</td>
<td>4.3%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Paints and varnishes, incl. enamels and lacquers, based on synthetic polymers or chemically ...</td>
<td>1.0%</td>
<td>-0.7%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Tubes, pipes and hoses, and fittings therefor, e.g. joints, elbows, flanges, of plastics</td>
<td>1.7%</td>
<td>0.5%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Table 4: Revealed competitiveness of Kenya’s building materials sector (2016). Source: TradeMap using COMTRADE data.

Africa accounts for 91 percent of all building materials exports, and COMESA states alone, for 80 percent of the total. The revealed competitiveness analysis in Table 4 indicates a number of product categories that can be stimulated as economic growth sectors in Kenya’s economy, and simultaneously contribute to securing local economic benefits through manufacturing stimulation in the domestic economy. These include stone and slate; building bricks and blocks; ceramics; products of iron and steel; roofing materials; paints and varnishes; and resins and putties.

It is important to note that any localisation and manufacturing development strategy will have implications beyond the ‘Big Four’ affordable housing delivery agenda. Given that construction capacity and intermediate inputs are shared with civil works (infrastructure) and other real estate developments, constraints on supply and/or local productivity and price competitiveness will impact all areas of development in Kenya, including the predominant housing delivery by households themselves.

9. Housing Cost Benchmarking

Figure 6 shows the cost breakdowns for five accommodation types in Nairobi, Kenya. The first product (a 55m² detached house on a 120m² serviced stand) is compared against the development costs in Johannesburg, South Africa and Kigali, Rwanda. Overall, the same benchmarked 55m² CAHF house is 61 percent more expensive in Nairobi, Kenya than in Johannesburg, South Africa and 19 percent more expensive than in Kigali, Rwanda.
Land costs are extremely high in Kenya (and especially so in Nairobi), yet even so comprise only 6 percent of the cost of a 55m² house, decreasing to 2.5 percent of unit cost in an eight-storey multi-unit building. However, Kenya’s inefficient planning, zoning and land registration systems, combined with significant land speculation, continue to restrict access to well-located land for development. Lack of enforced zoning also inflates most well-located land to commercial land values, which adds a premium to residential property prices. Limited town planning and land use management planning processes in major urban areas do not differentiate between land use zones sufficiently, placing upward pressure on all available land, which is often priced at commercial rates. Relatively inefficient land titling and transfer processes must be streamlined to improve the efficiency of land markets, as well as to open up the accommodation resale market to improve upward mobility in residential property markets. A major constraint to the ‘Big Four’ affordable housing programme is the focus on large-scale developments, which require large tracts of well-located developable land. More, smaller-scale, developments would enable infill and redevelopment options, which fit better with Kenya’s prevailing smaller-scale development pattern.

The third largest cost driver (after manufactured materials and labour) is bulk and internal infrastructure provision (13 percent for a 55m² house, and 16 percent for a 35m² house). Given that limited municipal and utility networks in most cities necessitate the development of on-site water and waste systems, and that connecting to electricity grids is also expensive, this adds significant additional costs to development. The high costs of providing on-site water, sanitation and energy supply, especially for detached houses, therefore contributes significantly to overall product cost (a 36 percent premium when compared with Johannesburg). Focused installation of key bulk infrastructure lines and facilities (notably, access roads, water and sanitation access) would reduce overall development costs of affordable housing significantly and enable greater proportions of development cost to be invested in the accommodation itself.

Comparing the 55m² house, construction costs comprise 44 percent of total product cost in Kenya, versus 47 percent (of a much lower overall cost) in South Africa. This indicates many layers of development costs in Kenya that accumulate to increase the total costs of housing, including land and infrastructure, compliance costs, other costs, profits and VAT. Overall, construction costs in Kenya are 51 percent higher than South Africa, and both labour costs (+35 percent) and material costs (+62 percent) contribute significantly to this. While informal
labour costs are lower in general in Kenya, the skills required for conventional construction are scarce and relatively more expensive.

A critical cost contributor to housing in Kenya is therefore the intermediate inputs into residential construction. While primary sector intermediate inputs (sand, stone, timber) are relatively competitively priced, secondary sector (largely manufactured) building materials and components are significantly more expensive than South Africa, resulting in the 62 percent materials cost increment between the two countries. The major materials cost contributors are (in order of magnitude): manufactured steel products, manufactured cement products, timber products, plastics, electrical equipment, cement, chemical products and ceramics, glazing and porcelain.

Table 5 below shows the relative contribution to the total construction cost of materials across three housing typologies in Kenya.

<table>
<thead>
<tr>
<th>Materials Category</th>
<th>Free-Standing Houses (%)</th>
<th>Low-Rise Walk-Up Apartment Blocks (%)</th>
<th>High-Rise Apartment Blocks with Lifts (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement</td>
<td>8.10</td>
<td>12.70</td>
<td>12.50</td>
</tr>
<tr>
<td>Cement products (e.g. blocks)</td>
<td>14.20</td>
<td>11.20</td>
<td>11.10</td>
</tr>
<tr>
<td>Steel (e.g. roof sheeting, windows)</td>
<td>12.70</td>
<td>16.00</td>
<td>15.20</td>
</tr>
<tr>
<td>Refined goods (e.g. sanitaryware)</td>
<td>10.40</td>
<td>8.00</td>
<td>7.40</td>
</tr>
<tr>
<td>Electrical and mechanical equipment (e.g. cabling and wiring, lifts, switchgear)</td>
<td>10.90</td>
<td>11.00</td>
<td>21.00</td>
</tr>
<tr>
<td>Total contribution of top 5 materials to total cost of materials (%)</td>
<td>56.30</td>
<td>59.10</td>
<td>67.20</td>
</tr>
</tbody>
</table>

Table 5: Percentage Contribution of Top Five Materials Categories in Kenyan Housing Typologies.

The revealed competitiveness analysis (Section 6 above) points to Kenya’s reducing competitiveness in many building materials categories, corroborating the need for significant importation of materials at high cost.

Very high materials costs must be mitigated by improving access to critical materials through increased local production (such as the stimulation of local, quality cement production) and/or value-added activities (such as augmented cement products and fabricated steel products). Key opportunities also exist to build local industry capacity to deliver a number of construction material inputs, for which Kenya has a relative competitive advantage in the local and sub-regional market. Further, the reliance on high-cost, luxury imported items in much construction should be mitigated by improving locally produced products and building interest in, and acceptance of, locally produced materials.

Interventions are also required to restructure the labour markets in relation to residential construction. While basic labour rates are relatively low, skilled and professional inputs into the construction industry generally are constrained, and often imported at high cost. Growing professional competency and capacity in Kenya will be critical to support the affordable housing industry. This will require interventions to attract and retain competent professionals (many of whom have been lost to the Kenyan economy), continued professional development initiatives and improvements to the quality and quantum of outputs from the professional

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20 Building typology also influences materials costs. Free-standing dwellings can be built with locally available materials such as coral stone and Mabati roofing, cheaper labour and sweat equity, but the cost of providing on-site water and sanitation where no infrastructure is available is higher per unit than for larger estates and apartment blocks. Multi-storey construction is more expensive per m² as it requires more sophisticated contractors with higher overhead and plant costs. High-rise towers require lifts, more stringent fire safety measures and more expensive and taxed imported equipment such as lifts and electrical switchgear.
academic institutions. Improved artisanal skills bases are critical to overcoming this. This includes all basic building trades (civil works, building, carpentry, plumbing). High professional costs also add to the total cost of compliances and approvals for affordable housing construction. However, most critically, professional and trade skills will only become sustainable once there is greater long-term investment consistency in the construction industry generally. Without sustainable, multi-year prospects, such skills become mobile and move to more consistent areas of international demand.

The net effect of Kenya’s very high land, infrastructure and compliance costs is that they offset the increased construction costs of verticalization (multi-storey development), due to the better utilisation of land and efficiencies in on-site infrastructure provision. This is the main reason medium and high-rise development is currently feasible, at least in Kenya’s major cities, whereas in South Africa verticalization is generally significantly more expensive and less pervasive than in Nairobi. Should overall construction costs (labour and materials) become more competitive, the relative cost of verticalization will be more noticeable on overall product prices.

While there is interest in alternative building technologies (ABTs), and it is believed that certain ABTs may contribute to cost reductions, the overall potential of significantly reducing the costs of construction by using ABTs is believed to be limited.

High compliance and approval costs (+65 percent) add an additional cost burden to affordable housing development. This is due to the high cost of professional services (design, surveys, impact assessments), land registration costs and registration efficiency. These include town planning, building codes and environmental approvals. This is due to cumbersome and outdated land, planning and building control processes and inefficient regulatory approvals processes. The shortage of necessary professional skills creates higher demand for locally based professional skills or creates a reliance on international professional firms, and the costs of this are exacerbated by inefficient public sector processes involved in approvals processes. A streamlining and potential fast-tracking of building approvals by County Governments is required to improve the rate and scale at which affordable housing projects can become ‘shovel ready’. This will also assist in enabling smaller local developers, for whom the compliance cost burden for smaller projects is a significantly higher proportion of total project cost than for large developments. Furthermore, there is a need to establish a clear policy in respect of development contributions by developers in relation to bulk infrastructure requirements (where these are to be provided).

Relatively higher financing costs due to higher interest rates and difficulties with ‘take-out’ end-user financing also add to affordable housing costs. Holding costs, construction and bridging financing costs (where these can be accessed and managed by small, poorly capitalised companies) are affected by high interest rates and are exacerbated by development delays. These financing costs are amortised through increases in market prices of accommodation. Limited access to end-user finance requires that innovative financial instruments be used to dispose of property, many of which require more expensive financing costs. The impact of Kenya’s 16 percent VAT on total project costs is a significant burden to affordable housing production, even with the proposed corporate tax rebates for companies producing affordable housing at scale.

Finally, there is strong evidence that many sales prices for accommodation are constructed from what is deemed to be sellable, rather than by a consistent costing model. Profit-taking is therefore a factor that can drive up costs significantly. Greater competition in the market will assist to drive down unjustifiable profit-taking as the industry matures.

10. Conclusions and Recommendations

The 2016 World Bank report ‘Improving Access to Affordable Housing in Kenya: a Strategic Framework” contains recommendations that require more attention if Kenya is to develop and sustain a vibrant housing sector. Certain recommendations are being implemented while others remain un-implemented yet are critical to creating a platform for a broader and deeper affordable housing sector in Kenya. With respect to strengthening the enabling environment, improvements have been made in land titling and registrations, implementing a mortgage liquidity facility and tax incentives for affordable housing. Areas still requiring attention are: improved availability of land, better foreclosure and mortgage laws, improvements in construction techniques and materials, practical tax incentives and equity investments into housing. In relation to the proposed targeted initiatives, a mortgage liquidity scheme is being implemented and a PPP framework has been created. Unimplemented initiatives include the proposed housing credit guarantee scheme, a clear
affordable housing subsidy mechanism, a more robust housing PPP framework and a housing microfinance fund.

Considering implementation recommendations, the need for a national, multi-sectoral coordinating committee remains critical, and while additional research and feasibility work is constantly being undertaken, there is no formal forum or process through which required housing reforms can be negotiated, developed, implemented and monitored.

The most fundamental demand stimulant for housing is a consistently growing economy, with rising wage employment, stable or reducing interest rates and solid economic fundamentals that encourage investment into real estate by individuals, and into expansion by businesses. Addressing the negative consequences of the interest rate cap on the mortgage market is also important.

The proposed National Housing Development Fund will require significant capitalisation to fund the combined commitments for aggregating and off-taking completed housing, as well as substantial infrastructure to procure, project manage and dispose of stock via financed and cash buyers and lease arrangements. It is estimated KES750 billion (present value) will be required to support the procurement, bulk and internal servicing of necessary land over the five-year programme.

It is recommended that a formal, multi-sectoral coordinating structure be established through which key housing interests can engage on common themes that must be resolved in order to meet the ‘Big Four’ agenda. Currently, there is significant confusion in the industry regarding how the ‘Big Four’ affordable housing strategies will be implemented, how impediments will be met and how the funding and subsidisation for the programme will be structured and provided for.

Governance remains a significant threat to all development, with allegations of widespread corruption in land transactions and the awarding of contracts, with specific concerns around the robustness of the new PPP proposals for supporting the ‘Big Four’ agenda. It will be challenging to ramp up affordable housing development to scale without more transparent governance, and there are renewed efforts to combat corruption, including a recent Cabinet reshuffle. Further, the required devolution of powers, authorities and budgets to county level will be fundamental to the success of the ‘Big Four’ implementation, yet the legislative and financial frameworks for this remain substantially undeveloped.

A substantial increase in formal housing production will place pressure on all related parts of the housing ecosystem. Kenya’s legislative and policy framework still has significant gaps impeding the implementation of large-scale housing projects. Promulgation of a new, comprehensive and supportive Housing Act is urgently required. Such approaches must set clear rules for the sharing of responsibilities, risks, cost and profits between public and private entities. There needs to be a formalised devolution of powers and budgets to Counties. Spatial planning and land use management systems, land identification and release strategies, infrastructure development and building standards and controls must be improved and ramped up to support the ‘Big Four’ programme and to prepare for increasing urban growth. Furthermore, the administrative capacity of national, County and municipal governments and state entities must be enhanced to accommodate the proposed rapid acceleration in housing production.

A refinement of Kenya’s PPP framework is necessary, in order to improve its efficiency in structuring development partnerships as well as to embrace alternative contracting approaches suitable for urban land, infrastructure and housing projects that are more accessible to small and medium-sized local companies to the Kenyan affordable housing programme. The reliance on large (mostly offshore) construction companies to undertake large projects excludes access by most local firms, which in turn inhibits local value-added construction activity. Contracting approaches that allow access by smaller companies, encourage partnerships between international and local firms in large developments, and the bundling of affordable housing projects in packages accessible to local industry will be important. Coupled with this, tax incentives should be widened

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to include incentives for smaller, local companies participating in the programme in order to reduce inequities and bias towards large construction companies.

Land and housing sector information is critical to understand and adapt affordable housing strategies over time. Kenya's public and private sectors must improve information gathering, analysis and dissemination in order to monitor, evaluate and adjust affordable housing development. This includes the need to better record and monitor land transactions and registrations, accommodation construction and the application of government assets (land, finance and infrastructure) to households most in need.

It is imperative that Kenya's 'affordable housing' programme meets the real affordability constraints of households and drives a strong ownership agenda to dilute the unnaturally high rental market in Kenya's major cities. Demand-side strategies are required that make a wider range of more affordable accommodation options available to a greater proportion of lower-income households. A move away from provision of formally constructed accommodation units only to lower-specification, smaller units and providing access to serviced land, slum upgrading projects and supports for incremental housing construction will be required to ensure lower income households are able to access accommodation.

A strategy to broaden and deepen access to appropriate end-user housing finance is necessary. While the forthcoming mortgage liquidity facility will facilitate this, greater support for formalisation of governance and lending practices, as well as improved product development and liquidity of SACCOs and MFIs providing housing mortgage and construction finance must be implemented. In addition, financial products must continue to be developed that support household-level incremental housing production for ownership and rental. There are however notable innovations, particularly in the critical role played by SACCOs and micro-lenders in meeting the housing finance gap, and these offer opportunities for up-scaling, capacitation and replication. SACCOs also require resources to innovate and expand housing lending and to improve their governance and capacity to take on wholesale finance and manage increasing portfolios.

The cost benchmarking exercise identifies that over half of formal housing costs are not construction-related but linked to other parts of the housing construction value chain with land and titling, bulk and internal infrastructure provision being significant cost drivers over and above the high skilled labour costs and very high costs of manufactured building materials inputs. Affordable housing strategies and projects must include and proactively develop the capacities of large, medium and small local developers and contractors, as well as the accommodation production capacity of households and small-scale landlords. Kenya's housing sector is currently and will continue to be dominated by 'massive small' micro-scale, informal development but could only facilitate access to large (and mostly foreign) development and construction companies. Approaches to improving access for local companies to affordable housing developments are required, as are strategies to stimulate the growth and development of household construction and small-scale rental developments. This must look at programme design, tendering procedures and specified plans, standards and materials that encourage the growth of local skills, development capacity and manufactured products.

In relation to manufacturing, the 'Big Four' commitment is to "...grow the manufacturing sector and raise its share of the national cake from 9 percent to 15 percent..." (Presidency Website, 2018). Given the high proportion of manufactured intermediate inputs in the construction sector and the very high costs of these materials inputs, the affordable housing and manufacturing components of the 'Big Four' strategy must work in tandem. A stronger and larger localised manufacturing sector supporting the development of more, affordable housing creates a virtuous cycle of affordable home production, manufacturing growth, employment creation and economic prosperity. Overall, Kenya has experienced declining global competitiveness in building materials over the past five years, with relatively few product categories gaining global market share. If the affordable housing element of the 'Big Four' agenda is to optimally stimulate the Kenyan economy, it is essential that intermediate industries supplying affordable housing and other construction sectors are also developed. This must facilitate necessary investment in and development of Kenya's local construction capacity, construction skills and intermediate supply sectors. At minimum this will ensure that the envisaged construction boom does not result in rapidly increasing building materials costs and import leakages to meet increased demand.

This manufacturing growth strategy also has the potential to reduce Kenya's trade deficit in building materials, as well as to grow a local and sub-regional market for Kenyan construction goods, services and capacity. A failure to do so could result in building materials imports that are KES60 billion (US$591 million) or more than they are currently. Attempting to facilitate localisation through higher import tariffs without local manufacturing development is likely to be counter-productive because it will raise the costs of required building materials and reduce the affordability of housing even further. In any case, the average tariff applicable to
product categories in which Kenyan producers have been losing global market share is already between 2.3 percent and 4.4 percent higher than those categories in which they have gained market share.

The ‘Big Four’ affordable housing agenda presents important opportunities for further research and development and strategic investments at various points in the housing construction value chain. While this study did not undertake specific feasibility assessments, it is recommended that further analysis be undertaken to consider potential investments in the following areas:

- Land assembly, banking and release mechanisms to scale up strategic release of publicly owned or controlled land for affordable housing development.
- Planning and implementation of critical infrastructure required to facilitate ordered and cost effective urban growth, most importantly improved metropolitan movement systems (public transport and roads) and municipal water and sanitation networks.
- Investments into improving the certainty of supply and quality of output from the local cement and manufactured cement products industry, which currently has only one bulk cement producer that faces serious quality issues (Bumburi Cement was recently purchased by Lafarge).
- A programme to improve the efficiency, quality of work and ability to take on larger contracts of Kenya-based local contractors and developers is required. This should focus on internal efficiencies of companies, professional competences and construction financing opportunities to assist their participation in the construction value chain.
- Researching the development of a local steel value chain to take advantage of recent mining sector improvements and new investments in iron ore extraction, as well as improving capacity and quality from smelting and steel manufacturing operations and shielding local producers from periodic international dumping.
- The potential for cost and time savings in construction of affordable housing by applying selected ABTs should be considered (Monolithic concrete structures; Frame and infill; alternative technologies). However, the potential cost savings from ABTs is deemed to be limited, and should not be considered a panacea for affordable housing.
- A scaling up of green building approaches must be pursued in Kenya (such as the partnership with the IFC’s EDGE programme and the Green Building Council). Significant international experience exists to show that while this may not reduce capital costs of construction, it can substantially reduce life cycle costs, which becomes critical to long-term affordability and operating costs of subsidised (social) housing stock as well as private rental stock. Green building also opens the potential of new sources of international development capital.
- Investments in continued technical and professional skills development, and professionalisation of local developers are required in order to build a more efficient construction sector utilising a greater local skills base and able to undertake larger-scale developments.

An affordable housing sector that consistently creates value within Kenya’s economy must take a long-term, systemic view of scaling up housing production and not a short-term programme approach. It must become deeply integrated into Kenya’s local manufacturing, construction and financial services sectors, and must be dedicated to meeting the accommodation demand profile of Kenyan households (and not only the formal upper and upper-middle income groups). Finally, it must build consistent and growing demand for locally manufactured intermediate inputs and assist to develop a local cadre of talented tradespeople and professionals working in the construction industry. This requires systemic changes, rather than special dispensations for the ‘Big Four’ programme that are more likely to create price bubbles, materials shortages and a reliance on expensive import leakages of skills, development capacity and materials. The capacity developed over the next five years should leave Kenya with a robust housing sector capable of continuing to deliver at scale into the future, as well as the potential to expand exports and capacity into the COMESA region.

23 Land banking is understood to mean the “accumulation of serviced public land for critical future needs, for example industrial investments, housing projects and other basic public needs” (Miloyo, 2018).
Annexure A: Study methodology

The World Bank appointed the Centre for Affordable Housing Finance in Africa (CAHF) to undertake a ‘deep dive’ analysis of the affordable housing market in Kenya. This is one of the three analyses of potential economic lead sectors being undertaken as stage two of the Country Private Sector Diagnostic (CPSD) pilot study being undertaken by the World Bank and IFC for Kenya. The other two sectors being studied are manufacturing and agro-processing. This study deepens the understanding of how the construction value chain impacts the affordable housing market in Kenya, and how this in turn impacts the Kenyan economy and its growth prospects. This enables the development and implementation of strategies to stimulate the housing sector in Kenya and assists in identifying potential areas of investment that can either fill existing gaps within the housing construction value chain or assist in reducing the costs of building materials and supporting services in ways that make housing more affordable and accessible to a larger proportion of the Kenyan population.

This study is focused on the ‘affordable housing’ market in Kenya, through identifying overall housing affordability and considering the applicability of different housing products to different housing demand submarkets. Given the lack of a clear definition of ‘affordable’, we take the view that the analysis is intended to consider how the housing sector can benefit households as low down the income pyramid as possible. At the core of this study is the principle that a better understood and more efficient housing–economy nexus improves the potential for every household to secure adequate housing whether through formal or informal processes, and that all housing activity ultimately contributes to national economic well-being. This study is based on four separate but interlinked components.

First, an overview of the current Kenyan housing market is provided in order to identify some of the critical issues. This will include an overview of the prevailing policy stance and its impact, as well as discussion of the private and public constraints and expansion potential of finance for housing construction and related infrastructure.

Second, the existing scale of construction and housing construction are quantified to provide a baseline for assessing the impact of scaling up housing construction under different scenarios on the demand for construction materials. This analysis draws on a value chain analysis of both construction and housing construction activities in Kenya. The complete construction value chain is included in the analysis because of the complementarities that exist between construction material inputs used in the act of constructing a house, and those used in other forms of construction. Policy and strategy adjustments aimed at reducing the cost of building materials - such as cement and steel - are also likely to have positive feedback on the cost of civil construction that, in turn, reduces the infrastructure costs associated with sustainable housing development.

Third, in order to quantify the costs and composition of costs of affordable housing in Kenya, CAHF’s Housing Cost Benchmarking (HCB) methodology is applied to develop detailed cost breakdowns of five benchmarked housing products in Nairobi, Kenya. These are compared with each other, as well as against a counterfactual of the same product in Johannesburg, South Africa (the most efficient housing market in Africa and Kigali, Rwanda, as a means of identifying cost differences and anomalies for closer analysis. This analysis provides a basis for identifying those construction materials that have the most significant cost-raising impact on housing, allowing for a sensitivity analysis to be conducted on what would happen to the total cost of an affordable (and other) housing unit if the cost of these materials could be lowered to internationally competitive levels.

Fourth, a revealed competitiveness analysis of the international trade in a basket of construction materials was undertaken to identify those materials classes that may be produced locally and that have some apparent/innate competitiveness, as well as those products that are not competitive and/or are largely imported.

Based on these study components, conclusions and recommendations are made that will assist with the implementation of the ‘Big Four’ affordable housing and manufacturing strategies.
Annexure B: Housing roles and responsibilities in Kenya

At a national level, the Ministry of Housing facilitates the development and management of good quality, affordable housing in Kenya. It is mandated to develop housing policy and incentives, undertake research, coordinate stakeholders on human settlement matters, facilitate housing for civil servants, carry out slum upgrading programmes and the development of housing through the National Housing Corporation (NHC), and the facilitation of housing finance. The Ministry of Lands has over 50 offices across Kenya, which are responsible for land issues, physical planning, surveys and land adjudication and settlement. However, while progress has been made with the digitalisation of the land registry, serious problems still exist with issuance of land titles and the illegal allocation of land, most important being allegations of widespread fraudulent transactions.

The NHC is the implementation body for housing policies and programmes developed by the Ministry. It undertakes site and service schemes, housing developments, tenant purchase schemes for old public housing stock, and has developed and manages some rental stock. To date, the NHC has facilitated the sale of about 9,100 units to sitting tenants since 1965 and has developed and manages a portfolio of around 8,200 rental units developed since 1971. Developments for sale predominantly produce limited numbers of accommodation units costing in excess of KES3 million (US$30 000) as well as some commercial space (calculated from figures available on NHC website).

At a municipal level, Municipal Councils determine and implement land use regulations, titling, implement bylaws and the provision of infrastructure. Councils also have the ability to implement incentives in addition to national incentive schemes, but this is not common. Funding for capital projects is constrained, with most budgets being used for recurrent expenditure.

While Kenya’s government has historically taken responsibility for housing development, the ‘Big Four’ programme envisages housing delivery being undertaken primarily through Public-Private Partnerships (PPPs). This will place much more focus on the capacity of large, private companies to partner with government to produce affordable accommodation at scale. However, currently little attention is given to the role played by SACCOs and CBOs in providing finance and accessing land and housing for members, as well as the role played by households themselves in incremental housing development. These actors are the predominant deliverers of affordable housing in the country, albeit with little to no formal support from government.

Kenya has a relatively robust legislative, policy and institutional framework that has evolved since independence, but more notably in the past decade. However, there are still significant challenges. Kenya’s 2010 Constitution establishes the right to housing as an enforceable socioeconomic right. While jurisprudence on this right is limited, it has created a framework for redefining the roles and responsibilities of organs of state, private sector and civil society in respect of housing. New laws have been promulgated to better regulate land and housing. The Land Registration Act (2012) and Land Act (2012) provides an improved framework for land ownership and registration in line with the 2009 National Land Policy, while the National Land Commission Act (2012) established a body that is responsible for the allocation of public land, developing a land information system and managing a land compensation fund.

The Housing (Amendment) Bill (2017) is being drafted to replace the 2004 Housing Act. When promulgated, this is likely to devolve certain planning and housing-related functions to County level in line with the new Constitution. This Bill would also require government to maintain a data-base of low income individuals living in urban areas in order to identify persons qualifying for “low cost” houses; Regulates the development of guidelines to promote the construction of low cost houses using appropriate building technology; and provides incentives to investors in the housing and construction industry who invest in low cost houses. Other important legislation includes the Physical Planning Act, Transport and Infrastructure Act, as well as legislation facilitating investment and finance (e.g. REITs, RBA Act and NSSF Act; and the PPP Act, 2013)

24 This is implemented through the Kenya Slum Upgrading Programme (KENSUP), a partnership with UN-Habitat which aims to improve the livelihoods of 5.3-million slum dwellers in Kenya by 2020.
25 These include Dandora (1973), Umoja, Kayole and Kahawa.
26 Section 43(3)(b) of the Constitution of Kenya provides that every person has the right to “accessible and adequate housing and a reasonable standard of sanitation”.

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25 These include Dandora (1973), Umoja, Kayole and Kahawa.
26 Section 43(3)(b) of the Constitution of Kenya provides that every person has the right to “accessible and adequate housing and a reasonable standard of sanitation”.
In respect of affordable housing, some positive reform has happened in recent years. Stamp duty on property purchases was cut from 25 percent to 5 percent of the principle amount, and the tax on mortgages was reduced to 0.1 percent from 0.2 percent. Furthermore, recent statements have promised the release of 7,000 acres of serviced land for affordable housing (assumed to be at no cost). Numerous policies and legislation is being developed, notably the Housing Bill (2014); Draft National Land Use Policy (2016); and the Physical Planning Bill (2017). Current outdated building codes are being revised and will consider the potentials of alternative technologies. New legislation on building maintenance and building codes is also expected.
Annexure C.1: Sources and methods used in the construction of the housing construction value chain

The KNBS includes a detailed breakdown of the different components of gross fixed capital formation in their national accounts – as published in KNBS “Statistical Abstract 2017”, page 15. One element of this is an estimate of value of gross fixed capital formation spent on dwellings, which in 2017 was valued at KES 271 818 million. This figure represents the final demand for housing in the housing construction value chain.

The KNBS Statistical Review also includes a comprehensive breakdown of the output, intermediate inputs, GVA, labour remuneration, and gross operating surplus for the construction sector as a whole (KNBS “Statistical Abstract 2017”, page 8). It was assumed that the proportion of each of these components attributable to housing construction was equivalent to the ratio of the output of gross fixed capital formation on dwellings referred to above to the output of construction as a whole. In this case KES271 818/KES819 448 = 33.2 percent. This implies that the value added and intermediate input structure of housing construction is assumed to be the same as for construction as a whole.

The sector composition of intermediate inputs into housing construction was assumed to be similar to that of the construction sector as a whole and was derived from the 2013 Social Accounting Matrix (SAM) for Kenya. This indicates that in that year, 31.6 percent of intermediate inputs into construction were obtained from primary sectors (agriculture, forestry and fishing and mining and quarrying), 60 percent were sourced from secondary sectors (manufacturing, utilities and construction) and only 8.4 percent were from tertiary (services) sectors. The SAM also provides some basis for disaggregating labour inputs by skill, with 5 percent skilled, 18 percent semi-skilled and 77 percent unskilled.

The figure below indicates the source of data for different elements of the housing construction value chain in Kenya.

Employment estimates are derived from the aggregate remuneration obtained from the KNBS break-down of GVA referred to above, divided by the average remuneration in construction for all firms as calculated by dividing the aggregate remuneration for construction in the “KNBS Statistical Abstract 2017” (page 206) by the total number of people employed in construction as reflected in the same document on page 63.
Annexure C.2: Sources and methods used in the construction of the housing rental value chain

The KNBS includes a detailed breakdown of the different components of real estate in their annual production accounts by industry: Table 2.1 – as published in KNBS “Statistical Abstract 2017”, page 9. This includes a comprehensive breakdown of the output, intermediate inputs, GVA, labour remuneration, and gross operating surplus for the real estate sector as a whole. The proportion of each of these components attributable to housing rental was derived from the share of rents for rented dwellings of total real estate income in 2014. In this case KES7486/477388 = 14.1 percent. This implies that the value added and intermediate input structure of housing rental is assumed to be the same as for real estate activities as a whole and it is also assumed that the share of housing real estate of total real estate was the same in 2016 as it was in 2014. These assumptions need to be tested by further studies.

The sector composition of intermediate inputs into housing rental was assumed to be similar to that of the real estate sector as a whole and was derived from the 2014 Social Accounting Matrix (SAM) for Kenya.

The figure below indicates the source of data used for different elements of the housing rental value chain in Kenya.

Total employment in the real estate sector is reflected on page 57 of the KNBS “Statistical Abstract 2017”. Employment estimates in housing real estate are derived from the aggregate remuneration obtained from the KNBS breakdown of GVA referred to above, divided by the average remuneration in real estate as calculated by dividing the aggregate remuneration for real estate in the “KNBS Statistical Abstract 2017” (page 75) by the total number of people employed in real estate as reflected in the same document on page 65.

According to the 2014 SAM, the breakdown of skills in real estate is as follows: skilled (66 percent), semi-skilled (1 percent), low-skilled (33 percent).
Annexure D: Housing cost benchmarking overview

An analysis of housing costs in Kenya will be undertaken, using CAHF's Housing Cost Benchmarking methodology. Three "affordable" housing products will be costed in Nairobi and one other city. For comparative purposes, one of these products has also been costed in South Africa for the same time period and will also be compared to Kenya’s cost benchmarks.

These products are deemed to offer a cross-section of the prevailing ‘affordable’ housing market currently being developed in Kenya, and relevant to the ‘Big Four’ programme. Given the pervasive ‘apartment block’ style of development in Kenya, two apartment-style products have been costed in addition to three detached ‘bungalow’ style houses:

- **D1: NAIROBI 55m² CAHF House - 46m² Two-bedroom, one bath house with 9m² veranda = total 55m² (2018 prices), on 120m² plot**
- **D2: NAIROBI 45m² CAHF House - 40m² Two-bedroom, one bath house with 5m² veranda = total 45m² (2018 prices), on 120m² plot**
- **D3: NAIROBI 35m² CAHF House - 30m² One-bedroom, one bath house with 5m² veranda = total 35m² (2018 prices), on 120m² plot**
- **D4: NAIROBI 240 x 40m² two-bedroom apartments in 2 x 5-storey walk-up blocks (2018 prices), on 6000m² plot**
- **D5: NAIROBI 240 x 40m² two-bedroom apartments in 2 x 8-storey blocks with lifts (2018 prices), on 4800m² plot**

Plans for the three products are included below.

In order to provide a counterfactual, Type C0 (CAHF’s original specification costed in the Africa benchmarking study) was costed for South Africa (Johannesburg) for the same year, and has also been costed for Kigali, Rwanda. This enables a comparison with the most well-developed African housing market, as well as a regional cost benchmark in Rwanda.

- **Master Type C0: 55m² CAHF House - 46m² Two-bedroom, one bath house with 9m² veranda = total 55m² (2018 prices), on a 120m² plot.**

The cost breakdown of Kenya's benchmarked products are analysed in respect of their total cost contributions to affordable housing costs, as well as their relative costs between products and countries. This enables identification of components of Kenya’s construction value chain that are more or less efficient and effective than in other regions. Analysis focuses on:

- Level one cost comparisons (land, infrastructure, regulatory costs, construction costs);
- Detailed cost inputs (materials and labour);
- Cost drivers (important elements of the construction value chain that drive affordable housing costs);
- Cost anomalies (key parts of Kenya’s construction value chain that are less or more cost efficient than other areas (Rwanda and South Africa); and
- Construction Intermediate Inputs (relative costs of key materials inputs into Kenya’s affordable housing market).

The table below includes the summarised Level 1 costs for the five Kenyan benchmarked products, and the South African and Rwandan counterfactuals.
Table 6: Benchmarked Level One costs of five Kenyan house types (2018).

Plans for the D1, D2 and D3 product are included below.

Type Co & Type D1: 55m² CAHF House - 46m² two-bedroom, one bath house with 9m² veranda = total 55m² (2018 prices), on a 120m² stand.
Type D2: 45m² CAHF House - 40m² two-bedroom, one bath house with 5m² veranda = total 45m² (2018 prices), on a 450m² stand.
Type D3: 35m² CAHF House - 30m² one-bedroom, one bath house with 5m² veranda = total 35m² (2018 prices), on a 450m² stand.
Annexure E: Summary of engagements with Kenyan developers

Face to face consultations were secured with six private developers including members of the Kenya Property Developers Association (KPDA) affordable housing task team, and the national Housing Corporation, and extensive email correspondence with one private developer. This sample is too small for statistical and trend analysis. That having been said, the following general observations could be made from the discussions and other information provided:

Developers report that they find it hard to attract international investors because of the lack of security in the titling process, massive off-take risk as the mortgage market is yet to offer long term liquidity to low-mid income families and the process to register titles is slow and corrupt.

Government departments and parastatal agencies/entities are often more hindrance than help due to lack of faith in things actually happening. One developer qualified for the 50 percent cut in co-operation tax for example, but it was a waste of time applying as they had not systemised it nor thought it through properly. It looks though like this may be changing with the president’s back behind it. The worry is that the housing stock produced may not be decent because of high costs.

The local banking sector does not have the liquidity to lend to developers who want to build at scale. They have limits to the amounts they can lend on construction finance per developer so developers need to plan and build in small phases and pay off the bank before starting the next phase - this can extend a 1 000 unit project from 3-4 years to 8-9 years. They also treat developer finance like corporate finance as opposed to project finance. The difference is much harder clauses in loan agreements, use of escrow accounts to keep buyers funds and ridiculous pre-sales requirements before the developer can even mobilise.

None of the developers have executed any housing projects in the recent past where the product price was less than KES2.5m, with prices for small apartments in outlying areas such as Siokimau, Athi River and Mlolongo generally ranging from KES3.4m up for small 30 – 40m² apartments in walk-up buildings.

The KPDA affordable housing task team proposes future sizes for “liveable” and affordable family apartments of 40m² for two-bedroom units, and 60m² for three bedroom units. At their estimated projected costs of KES73 676/m² for apartments in the low end market, this would mean around KES2.9m for a 40m² two bedroom unit, and KES4.4m for a three bedroom unit. Despite continued efforts to obtain information on how these lower costs could be achieved, none of the organisations were able to provide detailed costings to support the supposition, and much more work is needed by the local industry in developing cost efficient designs, materials specifications (including possible alternative technologies), land acquisition and servicing, and delivery models generally.

None of the developers have in the recent past developed projects of more than 500 units. Developers such as Erdemann have in the past developed more than 500 units, but spread over some years in phases, and despite numerous efforts no consultation could be secured with this developer. Karibu Homes broke ground on the Athi River second phase of 526 homes in October 2016, but this project is not yet completed, with 285 of these homes ready for occupation in 3 months’ time. The larger phase is to allow for longer instalment plans - the preferred method of buying a home as opposed to a mortgage.

The KPDA affordable housing task team identifies investment opportunities in typical apartment blocks of average sizes 260 units and 382 units for medium and high-density developments respectively. A number of companies in Nairobi advertise units in apartment blocks for sale at KES1.9m to KES 2m, but these are 19 to 21m² bedsitters, not suitable for family housing. It would be a large undertaking outside the scope of this assignment to establish a list of 20 to 30 top developers by balance sheet and/or capacity to deliver, especially since many of them are not public companies, and experience in trying to establish consultations and obtain information during the present assignment indicates that they will not readily give up the information needed.
References


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