



Rwanda's Housing Economic Value Chain: Assessing Rwanda's Affordable Housing Sector Main Findings and Recommendations

As part of the World Bank's Country Private Sector Diagnostic (CPSD) process in 2018, the Centre for Affordable Housing Finance in Africa (CAHF) undertook detailed research on the catalytic role the affordable housing sector could have on Rwanda's future economic growth. Using CAHF's Housing Economic Value Chain assessment methodology, Rwanda's housing economy is estimated to directly contribute 9.8 percent to Rwanda's GDP (RWF742 billion / US\$ 892 billion). This research therefore provides clear evidence that there is a high potential for Rwanda's affordable housing sector to be a driver of future economic prosperity in the country.

This document is targeted at policy-makers and provides a summary of the study's main findings and recommendations.

Overview of Rwanda's Housing Market

Urbanisation

- Just under 30 percent of Rwandans are urbanised, but urbanisation is projected to increase to 33.5 percent by 2020. Urban populations are growing at an estimated 5.75 percent per annum.
- Rwanda's population grows by 61 000 households per annum, of which 25 000 are in urban areas and 36 600 are in rural areas.
- Kigali is projected to grow from 1.26 million in 2015 to 1.48 million in 2020. Each year, an additional 17 000 households are formed or migrate to Kigali.

Housing form and tenure

- Most Rwandans (49 percent of all households) live in rural villages, or in isolated rural housing (26 percent).
- In urban areas, unplanned settlements are the main form of housing. In Kigali, 79 percent live in unplanned urban settlements, and only 3 percent live in modern planned areas.
- Rwanda's urban houses are 50 percent owned by occupants, 44 percent rented, 5 percent occupied for free, and less than 1 percent employer-provided.

The African Union for Housing Finance (AUHF) was established as a member-based body of housing lenders in 1984. Today, the AUHF comprises of 46 members from 17 countries across the continent. Members include commercial and mortgage banks, building societies, microfinance banks/institutions, housing development corporations, and other institutions involved in the mobilization of funds for shelter and housing. As an industry body, the AUHF promotes the development of effective housing finance markets, and delivery of affordable housing across Africa. For more information, visit: <http://www.auhf.co.za/>

About the research

This document summarises the facts, findings and recommendations contained within the full report, "Assessing Rwanda's Affordable Housing Sector", written by David Gardner, Keith Lockwood, and Jacus Pienaar of the **Centre for Affordable Housing Finance in Africa (CAHF)** in March 2019.

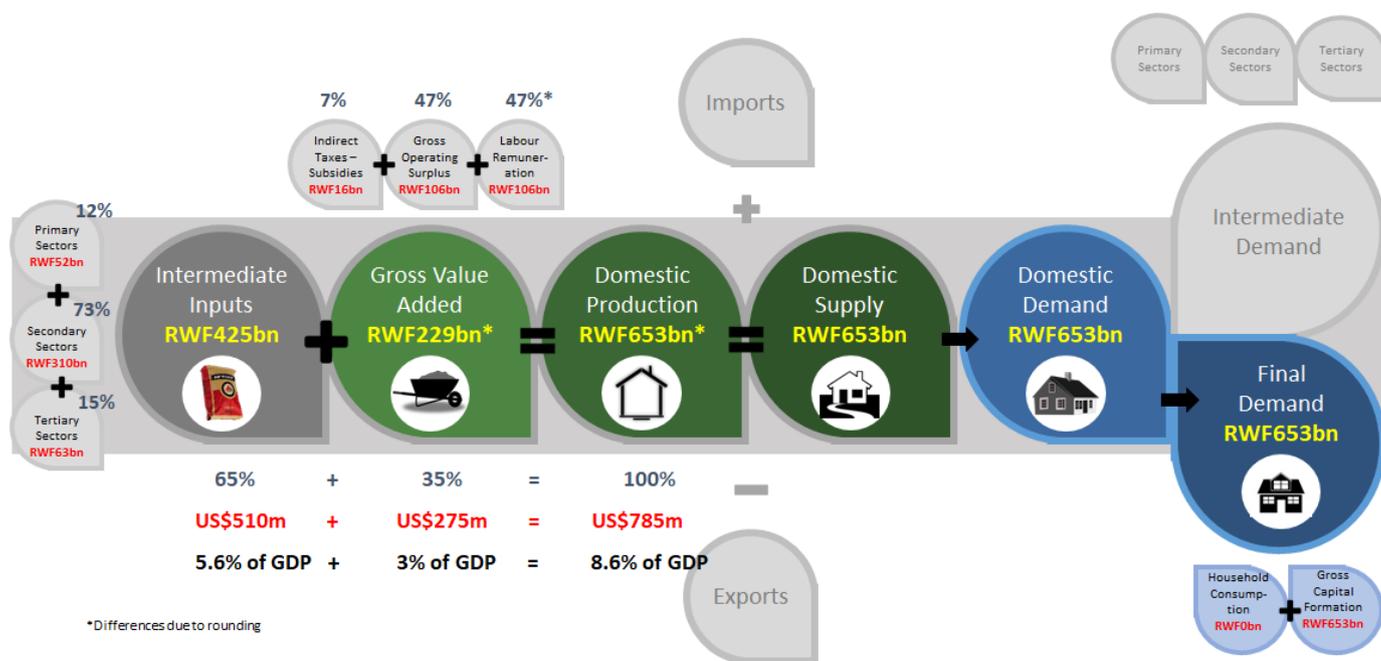
The report quantifies and analyses various facets of the housing sector, using costing and modelling methodologies developed by CAHF which have also been applied in Rwanda, South Africa, Nigeria, Tanzania and Uganda, namely housing economic value chain analysis and housing construction cost benchmarking. The findings of the report support the World Bank Group's diagnosis that Rwanda's housing sector is well-positioned to be a major catalyst in Rwanda's future economic and social development. The full report is available at: <http://housingfinanceafrica.org/documents/assessing-rwandas-affordable-housing-sector/>

Housing demand and supply

- According to the Rwanda Habitat III Report (2015), total housing needs for Kigali estimated at 460 000 units between 2012 and 2022, of which almost 345 000 units would need to be newly constructed.
- According to CAHF's analysis, a US\$25 000 (RWF21.8 million) housing unit would be affordable to only 0.7 percent of Rwandan households.
- While much attention is focused on the larger developers and international companies, it is the smaller developers and households themselves that produce the majority of new housing units in Rwanda.

Housing Construction and Rental Value Chains for Rwanda

The figure below presents the **housing construction value chain** for Rwanda for 2017:



- Housing construction activities produced a total output of RWF653 billion (US\$785 million) in 2017, resulting in a **total housing construction outputs equivalent to 8.6 percent of GDP**.

- **Intermediate Inputs** make up 65 percent, sourced from primary sectors (12 percent), secondary sectors (73 percent) and tertiary sectors (15 percent).
- 35 percent is **Value Added** during the house construction process, comprised of: labour remuneration (47 percent), gross operating surplus (47 percent) and net indirect taxes less subsidies (7 percent).
- In housing construction, **Rwanda's ratio of intermediate inputs to output (65 percent) is similar to South Africa's (69 percent) but much higher than Kenya's 54 percent.** This is primarily a function of the relatively high cost of building materials inputs into house construction in Rwanda.
- Given the limited formal housing delivery in Rwanda, it can be assumed that much of this economic value added is generated in the informal housing sector. If there were no import leakages, every RWF1 spent on construction value adding activity would result in RWF1.86 of sales in 'upstream' intermediate supplier sectors, implying a **maximum direct impact multiplier of 2.86.**
- **Employment** sustained by this level of economic activity is estimated at close to 157 000 during 2017.

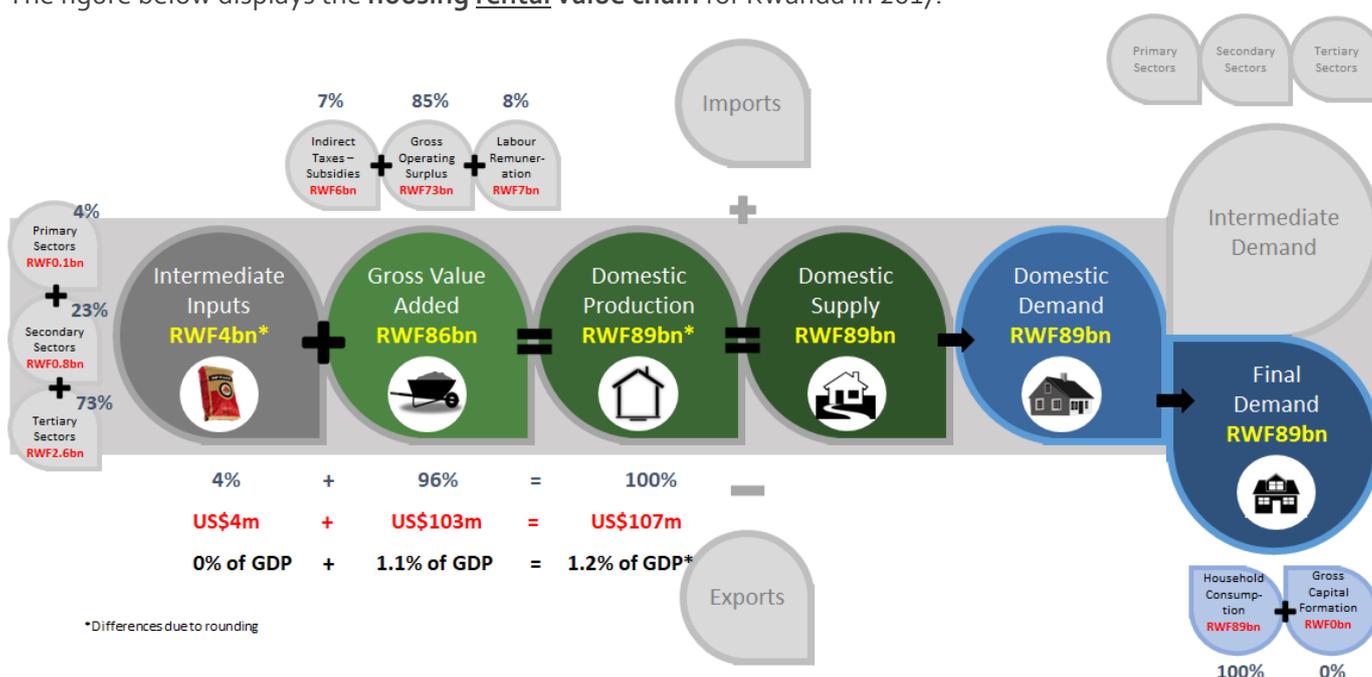
About the methodology

This research draws on two main methods of data analysis. First, CAHF's Housing Economic Value Chain (HEVC) framework is applied to quantify the direct impact of the construction and rental of housing on the Gross Domestic Product (GDP) of Rwanda. The HEVC methodology uses the best available economic and socioeconomic data for Rwanda, from sources such as the National Institute of Statistics of Rwanda (NISR). Where sufficient data does not yet exist, reasonable assumptions were made based on available data.

Second, CAHF's Housing Cost Benchmarking (HCB) methodology has been applied to ascertain detailed cost breakdowns of three benchmarked housing products in Rwanda. 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. The methodology provides for a 'like for like' comparison of costs between regions and countries, as it is based on a standardised design, level of specification and cost calculation.

Complete details on the methodology and data sources are included in the full report: <http://housingfinanceafrica.org/documents/assessing-rwandas-affordable-housing-sector/>

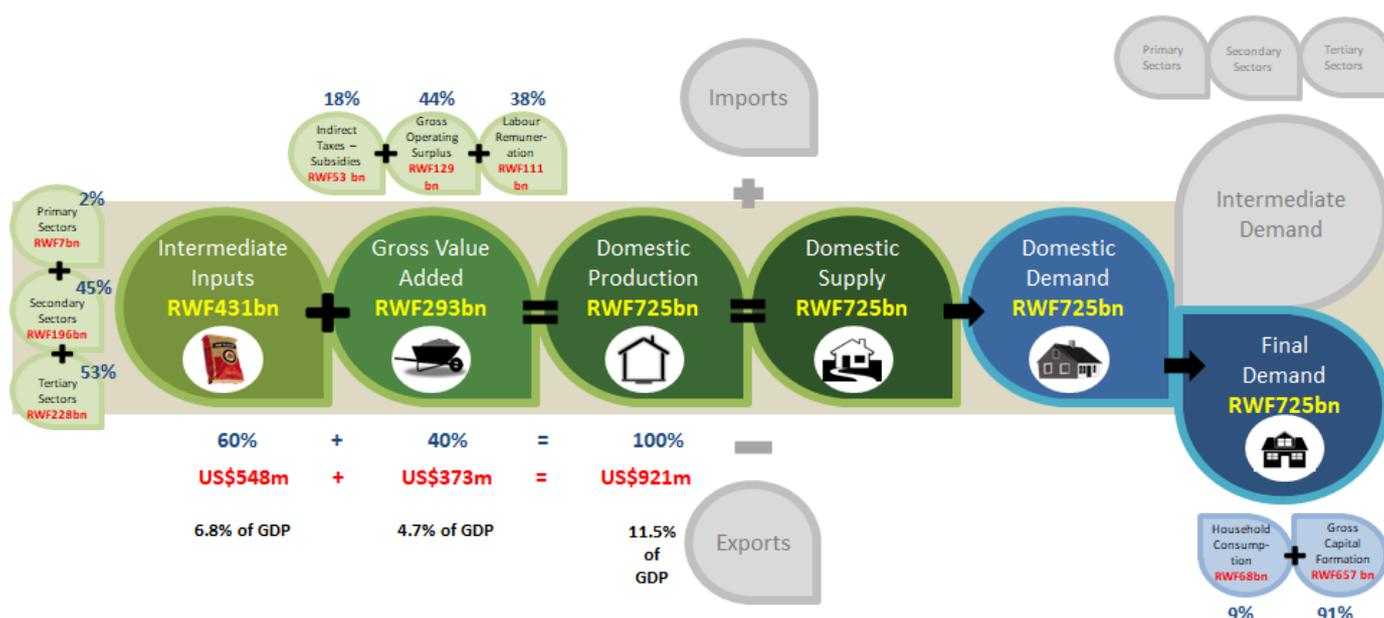
The figure below displays the **housing rental value chain** for Rwanda in 2017:



- **Total output of housing rental activities was RWF89 billion (US\$107 million).** The value of intermediate inputs into housing rental activities was equivalent to less than 0.1 percent of GDP in 2017, while the GVA amounts to 1.1 percent—resulting in **total rental output being equivalent to 1.2 percent of GDP.**

- However the formal rental sector in Rwanda is very small, and it is likely that **informal rental activities** are not fully captured in national accounts data, and thus under-represented in the rental value chain.
- **Gross Value Added** was RWF86 billion (US\$103 million) or 96 percent of total output.
- **Intermediate Inputs** totalled RWF4 billion (US\$4 million), only 4 percent of total output—however it is likely that informal rental intermediate inputs are significantly under-represented in this 4 percent figure, given prevailing volumes of informal rental in Kigali.
 - Intermediate inputs were sourced from tertiary sectors (73 percent) and secondary sectors (23 percent), with the remaining 4 percent sourced from primary sectors.
 - Intermediate inputs that are required in support of housing rental activities range from gardening and landscaping materials, to cleaning materials and products associated with housing maintenance, to cleaning, gardening, security and management services.
 - The very low value of intermediate inputs means that every RWF1 spent on value added in housing rental only generates RWF0.05 in additional spending in 'upstream' sectors.
- **Total paid employment** is estimated at less than 400. Given that total housing rental stock is less than 15 000 units in modern, planned areas, this low level of employment outside of the informal market makes sense.

The figure below shows the combined housing construction and rental value chain for Rwanda for 2017:



- Total output of housing construction and rental activities for 2017 was RWF742 billion (US\$892 million), contributing 9.8 percent of GDP.
 - **Intermediate Inputs** of RWF428 billion (US\$515 million) accounted for 58 percent of total outputs and **5.6 percent of GDP**—sourced from primary sectors (12 percent), secondary sectors (72 percent), and tertiary sectors (15 percent).
- **GVA** of RWF314 billion (US\$378 million) accounted for 42 percent of total outputs and contributed **4.1 percent of GDP**. Seven percent is attributed to net taxes, 57 percent attributed to Gross Operating Surplus and 36 percent was for labour remuneration.

- Paid labour remuneration totalled RWF113 billion and supported close to **160 000 employment opportunities in 2017**.
- These findings support the World Bank Group’s identification of housing as a potential lead economic sector for Rwanda, not just because of its overall impact on GDP, but also due to its high potential for local value added in the intermediate inputs as well as the high housing sector gross value added.

Rwanda Affordable Housing Cost Benchmarking

Using CAHF’s Housing Construction Cost Benchmarking methodology, the study determined the cost to construct three affordable housing products that are deemed to offer a cross-section of the current ‘affordable’ market in Kigali. For comparative purposes, one of these products was also costed in South Africa for the same time period.

The cost of the three benchmarked houses in Kigali, Rwanda for 2018 were disaggregated into the following categories: Land costs; Bulk, link and connector infrastructure costs; Compliance and approval costs; Construction costs; Other development costs; and Sales taxes.

- The 55m² house (120 m² plot) costs US\$38 599 (RWF33.6 million) in Johannesburg, while the comparable 55 m² house (225m² plot) costs US\$50 297 (RWF43.8 million) in Kigali – a price increment of 30 percent.
- The study showed relatively **low elasticity of total house price to reduction in size**: an 18 percent decrease in house size yielded only a 7.2 percent

price decrease in Kigali, due to the relatively greater costs of other components of the price not impacted by house size, such as land and services costs.

- The **30 percent higher cost difference in Kigali**—US\$11 698 more compared to Johannesburg—comprises 42 percent materials costs, 11 percent infrastructure costs, 23 percent VAT, and 25 percent compliance and approvals. This finding would suggest that the most important areas to seek cost relief in the Kigali construction economy are construction costs and compliance and approvals.
- **Rwanda’s higher VAT rate of 18 percent** is a significant additional cost in the affordable housing development market.
- **The largest difference in the benchmarked costs between Johannesburg and Kigali is building materials costs, and specifically manufactured building materials**, many of which are imported into Rwanda. Importation of manufactured building materials is a major cost driver, given Rwanda’s limited local manufacturing base for building

	SOUTH AFRICA		RWANDA		Difference: Rwanda - South Africa	% Increase Rwanda - South Africa	% of Total Cost Difference
	Johannesburg		Kigali				
First Level Costs	Co: Master: RSA 55m ² CAHF House - 46m ² Two bed, one bath house with 9m ² veranda = total 55m ² (2018 prices), on 120m ² plot		C1: KIGALI 55m ² CAHF House - 46m ² Two bed, one bath house with 9m ² veranda = total 55m ² (2018 prices), on 225m ² plot		Difference: Rwanda - South Africa	% Increase Rwanda - South Africa	% of Total Cost Difference
	Cost (\$)	% of Total	Cost (\$)	% of Total			
A. Land & Registration Costs	US\$ 2 099	5%	US\$ 2 137	4%	US\$ 38	2%	0%
B. Bulk, Link & Connector Infrastructure	US\$ 6 640	17%	US\$ 7 970	16%	US\$ 1 300	20%	11%
C. Compliance & Approvals	US\$ 1 467	4%	US\$ 4 448	9%	US\$ 2 980	203%	25%
D. Construction Costs	US\$ 21 250	55%	US\$ 26 131	52%	US\$ 4 881	23%	42%
E. Other Development Costs	US\$ 2 107	5%	US\$ 1 933	4%	(US\$ 175)	-8%	-1%
F. VAT / Sales Tax	US\$ 5 035	13%	US\$ 7 678	15%	US\$ 2 644	53%	23%
Grand Total	US\$ 38 599	100%	US\$ 50 297	100%	US\$ 11 698	30%	100%

materials, relatively high import tariffs, and the long logistics chains required to get materials to Rwanda.

- On average, **intermediate inputs into house construction from secondary economic sectors (manufactured goods) cost significantly more in Kigali than in Johannesburg.** These items are mostly (but not exclusively) imported into Rwanda (such as plumbing and electrical components) or are locally manufactured or assembled using imported materials (such as window and door frames and roofing materials).
- The findings also show that **exactly half of the total house cost in Kigali comprises non-construction elements (land, infrastructure, compliance, tax)**

meaning that seeking more affordable accommodation needs to look to cost efficiencies across the housing delivery value chain.



Conclusions and Policy Recommendations

- **Housing construction has the potential to drive the growth of local manufacturing sectors** that supply intermediate inputs into the housing value chain, and by so doing, to ensure value creation upstream of housing construction in Rwanda. However, this will require coordinated policy covering the housing sector generally, the manufacturing and services sector and aspects of economic and fiscal policy. To exploit its economic potential, a **systems view of housing** and its influence on Rwanda's economy is required.
- The **impact of VAT** on housing is important. At 18 percent, VAT is a significant barrier to affordability for many households wishing to purchase or rent formally constructed housing.
- Rwanda's housing sector cannot drive economic growth if it only focuses on the top few percent of households. Most developments target new products at the US\$40 000 and above market, which effectively excludes nearly 89 percent of all households from the housing market. New housing developments approved in Kigali are therefore unaffordable to the vast majority of households. Until realistic standards of accommodation, or significant subsidy budgets are available, the current formal construction market will not be able to reach a majority of Rwandan households.
- Therefore, if housing is to be a major economic driver, it is imperative that the market for housing products costing between US\$10 000 and US\$40 000 be stimulated in order that housing opportunities such as serviced sites and core units become available to the 90 percent of households only able to afford US\$5 000 or less for housing.
- A finer-grained determination of a **range of different housing interventions** in the owned and rented market is required. This will assist to create multiple sub-markets for housing that can be developed in large formal developments, as well as through smaller developments and by households themselves.



The Centre for Affordable Housing Finance in Africa (CAHF) serves as the Secretariat of the African Union for Housing Finance (AHUF). CAHF has been operating as an independent think tank in South Africa since May 2014, pursuing its mission of making Africa's housing finance markets work. CAHF's work extends across the continent, and it is supported by and collaborates with a range of funders and partners. For more information, visit: www.housingfinanceafrica.org

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