

As African cities continue to grow rapidly, investors, financiers, and developers are increasingly interested in the opportunity: what does it look like? where can it be found? what are the risks? and how can they be managed? The potential impact of investment in housing is obvious. Good housing makes for good economies and healthy families, and the need is significant. Housing affordability continues to be the key challenge, on both the finance and construction side. How do we bring the cost of housing closer to the affordability of the market? This is something that policy makers and practitioners across Africa are grappling with. The answers can be found along the entire housing value chain.

Five things characterize the African housing market today. We see increasing investor interest, with a number of funds being established and projects being pursued, both by international and domestic capital. However, investors are tentative and continue to focus on higher value housing. Poor targeting has resulted in some projects not achieving their return expectations, as developers struggle to sell units. Whether this is dampening enthusiasm for the market is not clear, but the real loss is in the opportunity that exists. In this space, scale is insufficient: the housing projects currently underway across the continent are not even beginning to address the breadth of potential demand. We need to see more efforts towards the development of capacity for sustainable, scale delivery of affordable housing. One area in which there are interesting developments is in the residential rental sector: investors and developers, as well as governments are increasingly recognizing the importance of rental housing to support labour market mobility, within the bounds of affordability. The untapped opportunity in the affordable market is significant – if we delivered to the potential demand of households, who, in their current economies with existing finance could afford a US\$7500 house, this would translate into 52 million houses across the continent, generating almost US\$400 billion of economic activity just with the construction. This is an important number around which policy makers, investors, lenders, and developers should focus their minds. What will it take?

Investor interest

Investors are interested, but tentative. We can see their interest in the number of property investment conferences that are highlighting the residential opportunity, the number of news articles that explore the potential, and critically, the development of new funds that are looking for an angle in. However, the share of capital that investors dedicate to housing and housing-related investments is still a fraction of their wider portfolios. It is worth considering why.

A study setting out the landscape of housing investment in the East African region found both local and foreign institutional investors.¹ Local institutional investors include commercial banks, pension funds and stock markets. The study estimates that the banking sector in East Africa has about US\$1,2 billion in capital available for long term lending. Pension funds have provided over US\$100 million in medium term loans to commercial banks in East Africa for mortgage lending. And while stock markets are increasingly a source of interest, their impact

¹ Kayiira, Duncan (2017) The Investment Landscape in the East African Region. Report prepared for CAHF.

is limited. As a result, local capital in the East African region is a fraction of the US\$42.2 billion that is estimated to be needed to address the housing delivery potential in the region.

The majority of the twenty foreign institutional investors that have invested in housing in the East African region between 2000 and 2017, were Development Finance Institutions. While these institutions' focus on housing has been driven by a very real commitment to the impact potential of this sector, their hesitancy is also evident in the scale of their investments. Between 2000-2017, an estimated US\$40 billion was invested by twenty foreign institutional investors. Of this, US\$4 billion (10%) was allocated to investments that have a direct impact on the housing and housing finance sector in the EAC. The funding target was for a range of activities, including equity, lines of credit to expand mortgage lending, construction finance for developers, feasibility studies, credit guarantees, technical assistance and other measures to stimulate investor confidence. The majority was targeted at Kenya, followed by Tanzania, Uganda, Rwanda, Burundi and South Sudan.

Two main challenges exist to deepening and broadening the investment landscape in the East African region: the high cost of investor funds, and the information asymmetry in the housing finance markets in the region. These two are related: in the absence of sound data that adequately quantifies both the risk and the opportunities, investors hedge their bets by looking for higher returns.

Poor targeting and insufficient scale

At the same time, it is not clear that the housing sector would have the ability to absorb more investment at this stage. The funds that do exist struggle to find viable projects, or developers with sufficient capacity to meet their investment terms. A simple review of housing development projects across the continent reveal a scale of development that is grossly inadequate. Shelter Afrique has noted that outside of South Africa, there are very few developers with the capacity to deliver more than 500 units per annum for more than three years. It is a classic chicken-and-egg situation: is development capacity limited by the lack of capital, or are low levels of investment a function of poor development capacity?

Where we do see scale, the efforts appear to be more dramatic than well placed. Take Angola's Kilamba development, that saw the delivery of 750 apartment blocks ranging from 5-13 floors for over 80 000 people, as well as schools, day care, clinics and shops about 30km from Luanda. Heralded as part of the government's 'Million House Programme' entry level units started at US\$125 000. When the development remained largely unoccupied, the government reduced prices by 44 percent to US\$70 000, and subsidised the interest rate on mortgages. What does this tell investors about the viability of what was labelled "affordable" housing delivery? Similarly, Vision City in Kigali, Rwanda, promises to deliver 22 000 units. Financed by the Rwanda social Security Board, the project was designed for construction over eight years. The first phase of the project was completed by July this year, with about 30 percent initial occupancy. Units ranged from about US\$177 000 for a two-bedroom apartment to about US\$500 000 for a five-bedroom townhouse. Very soon, however, the prices were reduced by a third to encourage sales. Still, at \$124 000, the smallest unit was affordable only to 0.1 percent of the urban Rwandan population, at current mortgage rates.

very clearly exists. Investors pull back, capital is unavailable, and we revert to a haphazard building process that fails to deliver what the market needs.

Annually, CAHF asks the experts contributing to this yearbook to define, from their perspective, the cost of the cheapest newly built house, built in this past year, by a private developer; and we ask for the size of that house. The data does not indicate the cheapest house that *can* be built, but rather the cheapest house that *is* being built. The distinction is important: developers choose their markets based on a variety of factors including their sense of local affordability, access to materials and finance, and their sense of local expectations. They may choose to build a more expensive house because they feel it will sell more easily, given mortgage finance that is available, for example. The data we received varies considerably, from a US\$142 500 house in Madagascar, through to a US\$6 600 house in Sudan. The data changes, too. In 2016, the cheapest newly built house in Angola was \$200 000; this year, it is \$25 000. More affordable housing seems to be being built this year in a number of countries: the Seychelles, Djibouti, the Comoros, Cape Verde, Rwanda, Uganda, Lesotho and Egypt. More expensive housing is being built this year in Ghana, Namibia, and Botswana.

Housing affordability is a function of three things: the price of the house, the finance terms, and household income. Taking data from mortgage lenders across the continent and calculating loan terms against the price of the cheapest newly built house in each country, we were able to get a (very) rough estimate of affordability. Across the continent, the cheapest newly built housing is affordable to more than fifty percent of the urban population in only eight countries: Cote d'Ivoire, Senegal, Tunisia, Libya, Mauritius, Morocco, Sudan and Egypt. In twenty-nine countries, less than ten percent of the urban population can afford even the cheapest newly built house that is being built this year.

It is worth reconsidering housing affordability against a much cheaper house. In Nigeria, the Millard Fuller Foundation has developed an incremental, starter house for Naira 2,4 million (about US\$7 500). All else being equal, if this house were available across the continent, it would be affordable to more than 50 percent of the population in 24 countries. This latent demand is equivalent to about 52 million housing units.

A back-of-the-envelope calculation can offer a sense of potential. Across the continent, about 52 million households could afford, at current financing rates in their countries, a mortgage to afford that \$7500 house. Delivering this entirely would generate almost US\$400 billion of economic activity just with the construction of that housing and its related infrastructure. If we imagined a 10-year delivery programme of 5 million houses per annum across the continent at this price, we could stimulate almost US\$40 billion of direct economic impact annually. This could unleash US\$22 billion in direct upstream economic activity (80 percent of which would be in manufacturing), and US\$18 billion in construction sector economic value added, per annum. Labour remuneration of US\$6,6 billion per annum would stimulate and sustain over 1,3 million jobs in Africa's economies, in the construction sector alone.²

² This calculation is based on work done to build a Housing Economic Model in South Africa. See <http://housingfinanceafrica.org/story-housing-economy-exploring-south-africas-housing-value-chains/> While South Africa's construction economy is not likely to be representative of what might be found in other countries, it is worth

The potential is not evenly distributed across all of Africa's economies, nor is the potential to deliver at the scale suggested. However, the latent potential of just twelve African countries in this market for US\$7500 houses exceeds US\$10 billion in total. Six of those have latent markets worth over US\$30 billion.

Of course, this calculation presumes the availability of mortgages to finance the transactions – a critical piece in the puzzle. Africa's mortgage markets are tiny, and, for the most part, expensive. If, however, the necessary long term capital to enable such borrowing were available, and assuming that the total value was mortgaged at 80 percent, this would add over US\$32 billion to Africa's mortgage markets per annum. The impact that this would have on the potential for domestic economies to intermediate, and the consequent downstream activities even in other sectors that this would facilitate, could change the continent's growth prospects dramatically.

The composition of mortgage markets, and specifically the terms at which mortgages are offered, is important. Even the \$7500 house, however, would be unaffordable to more than 90 percent of the population in eight countries. This is where the impact of finance becomes evident.

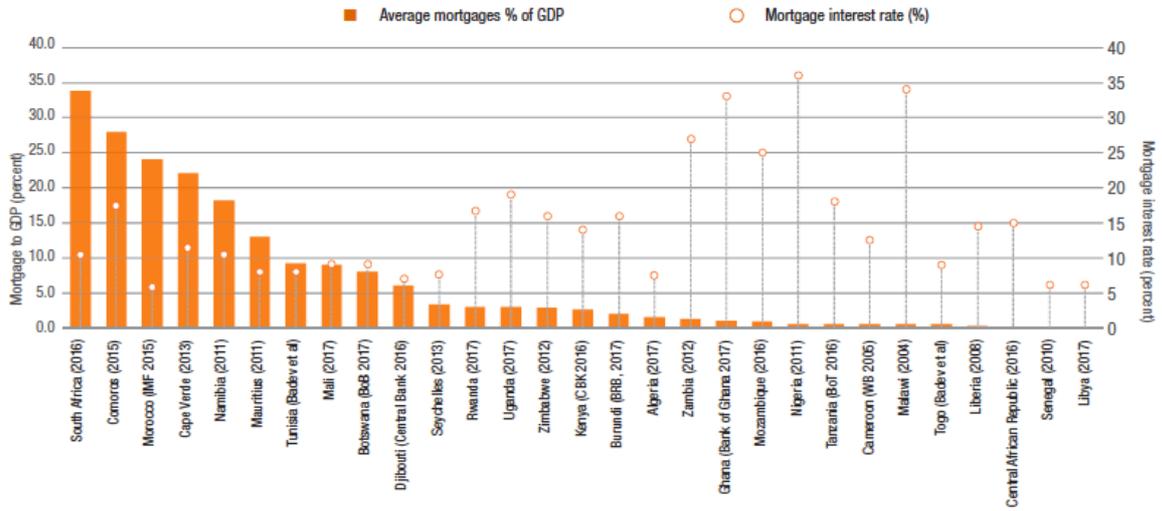
Only five percent of the urban population in Ghana, for example, would afford a \$7500 house. In Ghana, the current mortgage interest rate is 33 percent over twenty years. Similarly in Malawi, where the mortgage interest rate is 34 percent, only three percent of the urban population would afford the \$7500. With an interest rate of 25 percent in Mozambique, only three percent of the urban population would afford the \$7500 house.

The consequence of this is reflected more widely than simply housing need. Looking at the relationship of mortgage to GDP figures, and mortgage interest rates, we see a definite clustering. With a few exceptions, economies with high mortgage interest rates have smaller mortgage to GDP ratios, and in most cases, a smaller GDP per capita.

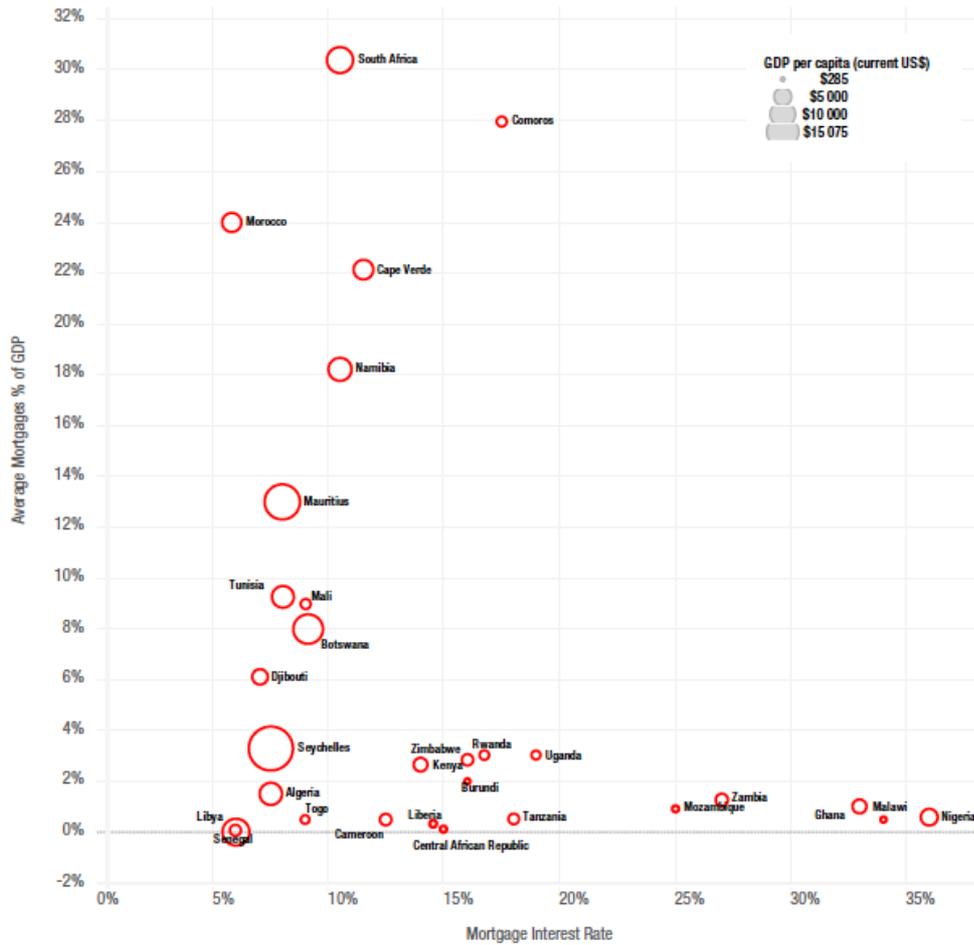
considering from a vision perspective. Current work to build a Housing Economic Model for Nigeria and Tanzania is underway, and may shed more light on the detail of the potential.

MORTGAGE TO GDP VS. PREVAILING MORTGAGE INTEREST

Source: CAHF Research, October 2017



AVERAGE MORTGAGES AS % OF GDP VS MORTGAGE INTEREST RATE (%)



Source: WDI (2016), CAHF Research (2017)

Rental

One way to overcome the constraints in the household mortgage sector, is to avoid them. This is a strategy currently being pursued by a number of investors as they consider the residential rental opportunity.

In a CAHF study of residential rental markets in five countries, currently underway, it was found that in many cities, it is the majority of households that rent: 55% in Dar es Salaam, Tanzania; 46% in Kampala, Uganda; 47% in Dakar, Senegal; and 78% in Abidjan, Cote d'Ivoire.³ Housing conditions are not good, however. Although most rental housing is made from permanent materials, a significant proportion of renting households live in overcrowded conditions, and with poor access to water and sanitation. Only 8% of renting households in Uganda have a flush toilet and 10% have piped water in their dwelling. In Tanzania, only 11% of renting households have piped water into their dwelling. Another 19% access water from a pipe in their yard or on their plot, and a further 21% access water from a stand pipe or public tap. Over half of renting households in Tanzania share their toilet facilities with more than five other households. Access to services by renting households appears to be better in Cote d'Ivoire and Senegal – but it is still insufficient.

In a paper published this year, World Bank economists argue that African cities are crowded, but not economically dense⁵. Investments in infrastructure, industrial and commercial structures, and formal housing, they say, have not kept pace with the concentration of people. Quoting an earlier paper, the authors argue that housing investment lags urbanisation by nine years. This notwithstanding, they also show that more than 30 percent of the land within 5km of many CBDs remains unbuilt. Addressing the rental challenge will require an explicit focus on infrastructure investment.

³ CAHF's rental study is being undertaken by Eighty20 and is considering the quantification of rental markets in Tanzania, Uganda, Cote d'Ivoire, Senegal and Angola. Data sources include Tanzania Household Budget Survey, National Bureau of Statistics 2011/12; Uganda National Panel Survey 2013/14, Ugandan Bureau of Statistics; Listening to Africa Senegal 2014, World Bank; Living Standards Survey: Enquete Sur Le Niveau De Vie Des Menages En Cote d'Ivoire (ENV 2015), National Bureau of Statistics.

	Tanzania	Uganda	Cote d'Ivoire	Senegal
Percent of households in the capital city who rent	Dar es Salaam: 55	Kampala: 46	Abidjan: 78	Dakar: 47
Number of renting households in the capital city	Dar es Salaam: 590 000	Kampala: 163 000	Abidjan: 797 600	Dakar: 219 300
Avg monthly rental (US\$)	18	27	51	N/A
Number of rooms for sleeping	1	1	1-2	1
Main material for walls	97% cement	71% burnt/stabilized brick	83% hard (cement)	98% cement bricks
Main material for roof	96% iron sheets	95% iron sheets	85% iron sheets	74% concrete/ cement
Main material for floors	96% cement	80% cement screed	70% cement	49% tiles
Connected to electricity grid	73	60	98	96
Flush toilet	21 (pour flush)	8	46	65
Piped water into dwelling	11	10	39	49
Household size	3.3 people	3.9	3.4	5
Percent overcrowded	40	52	26	47

While rentals do not appear to be very high, a surprising number of tenants appear to be struggling financially. Data from Tanzania suggests that just over a quarter of renting households (27%) “never have quite enough”; in Senegal, 24% of renting households said that their current income was insufficient and they needed to borrow to cover their expenses; 15% of renters in Abidjan (and 26% of renters in other urban areas in Cote d’Ivoire) said they were unemployed.

The various surveys that collect rental data are not uniform and the information available differs from one city to the next. In Dar es Salaam, a 2015 survey found that 68 percent of renter households lived within 10km of the city centre⁶. A 2015 survey in Cote d’Ivoire found that two thirds of tenants had occupied their dwellings from between 2-10 years. Twenty percent of heads of renting households in Abidjan worked in a store, kiosk or market; 15 percent worked in a formal office; and 4 percent worked in the construction sector. The residential rental sector is clearly significant - and yet we know very little about it. If investors and policy makers are to be better able to respond to the rental challenge and meet the demand not just for new investment but also ongoing maintenance, more uniform reporting mechanisms that consider and compare the data locally, regionally and internationally, should be put into place. This is an important growth area that policy makers as well as other housing sector participants should consider seriously.

Mechanisms to aggregate demand

Africa’s housing sector is a sector of very many small parts: households with very low incomes, developers with limited capacity to build, mortgage markets that grow by the hundreds of mortgages rather than the thousands. A key challenge therefore is aggregating the opportunity: amassing the small into the massive, sector wide opportunity that the latent demand – and the visual of our cities – suggests. This year, a number of initiatives are exploring different ways of organizing the value chain and structuring finance, to engage with the reality of small parts.

Real Estate Investment Trusts⁴

A Real Estate Investment Trust (REIT) is a company or trust that owns and often manages a portfolio of mortgages and / or real estate properties. It operates in accordance with certain rules and regulations that allow investors to invest in portfolios of mortgages or large-scale properties through the purchase of shares. The shareholders of a REIT earn a share of the income stream produced by the investment portfolio.

REITs aggregate diverse sources of funding and target them into real estate portfolios that extend beyond the limitations of individual projects. The regulations and legislation that govern REITs provide for preferential tax treatment and require high rates of profit distribution. Together, these unique factors enable REITs to raise finance from investors who otherwise might lack access to – or be reticent to engage in – real estate markets.

The REIT experience is still limited, and its potential to support affordable housing is not yet fully tested. Examples can be found in Ghana, Nigeria, Tanzania, South Africa, Kenya, Rwanda and Morocco. In South Africa, Indluplace is a REIT that specializes in residential rental, with a specific segment of its portfolio dedicated to the affordable market. It invests in existing, income-earning properties, offering an exit for residential developers. Ghana's HFC Bane established a hybrid, diversified REIT to channel long term funding into the development of affordable housing, but since about 2011, has shifted its focus to the upper end of the market and today, only 14 percent of its assets are in residential property. Similarly, Union Homes is a hybrid REIT in Nigeria which invests in the residential and commercial sector, focusing in residential on luxury apartments. In Tanzania, the Watumishi Housing Corporation was established as a development REIT to explicitly support the delivery of affordable housing for civil servants.

It is still early days, but the key challenge faced by all REITs involved in affordable housing – beyond the specific value chain challenges that exist for all market participants – is the skepticism of investors. Key enabling conditions for REITs in Africa – robust property rights, accurate deeds records, reliable valuations, appropriate rental market legislation, a vibrant economy and stable interest rates, not to mention sufficient stock, capable developers and a critical mass to enable liquidity and tradability – do not exist in many contexts. This is a key issue for governments, at the national and local level, must address in their policy and legislation.

Savings and Credit Cooperatives⁵

The Savings and Credit Cooperative Organisation (SACCO) sector in Kenya is extensive. The 175 licensed and regulated SACCOs monitored by the SACCO Societies Regulatory Authority (SASRA) comprise an estimated 3,4 million members and hold total assets of Kshs 393 trillion

⁴ For more information on residential REITs in Africa, see CAHF's work on the subject:

<http://housingfinanceafrica.org/projects/residential-real-estate-investment-trusts-africa/> This section was compiled by a paper prepared for CAHF by Rebel Group (2017) Residential REITs and their potential to increase investment in and access to affordable housing in Africa. Report 2: Case studies of African REITs.

⁵ CAHF has recently commissioned a case study on the role of SACCOs in housing in Kenya. This will be available soon. The data and analysis in this section was drawn from an early draft by Davina Wood (2017).

(US\$3,8 trillion) and core capital of Ksh 58 trillion (US\$560 billion). Between 2015 and 2016, membership and total assets grew by 9% and 13% respectively. Core capital grew by 28%. FSD Kenya's 2016 FinAccess survey reported that while the majority of Kenyans (71%) used mobile financial services in 2015, about a third used Banks, and 13% used SACCOs. Seven years earlier, in 2009, SACCO usage was 9%.

The 15th edition of the Kenya Economic Update, released in April 2017, estimates that less than 10% of housing credit in the country comes in the form of mortgages from the banking sector.⁶ The authors estimate that the remaining 90% of housing credit comes from SACCOs and the housing cooperative networks. The reason for this is both product design and pricing: SACCOs offer shorter, medium term (up to 7 years) loans at interest rates considerably lower (the World Bank estimates 12,6% annually) than the commercial mortgage lending banks. The loan quantum is based on up to three times what the member has saved with the SACCO. Typically, loans are unsecured, not linked to the property.

SACCOs rely almost entirely on member deposits, however. As a result, a key challenge they face, is access to longer term capital. It is in this regard that the World Bank is considering a liquidity facility to explicitly support the growth of SACCO capacity to provide housing finance. Can the SACCOs handle more capital, however? A key challenge for SACCOs will be improvements in terms of their risk management policies, debt collection procedures and corporate governance arrangements. While licensed and deposit-taking SACCOs are broadly meeting the statutory requirements in areas of capital adequacy, asset quality and liquidity measures, NPLs appear to be higher than for commercial banks. And, is the regulatory framework in Kenya adequate to meet investor requirements?

These are the questions that the Kenyan government – and governments across Africa where SACCOs operate – should be asking, and answering. SACCOs create a very interesting opportunity for aggregating household savings as a source of capital to support larger scale housing investments.

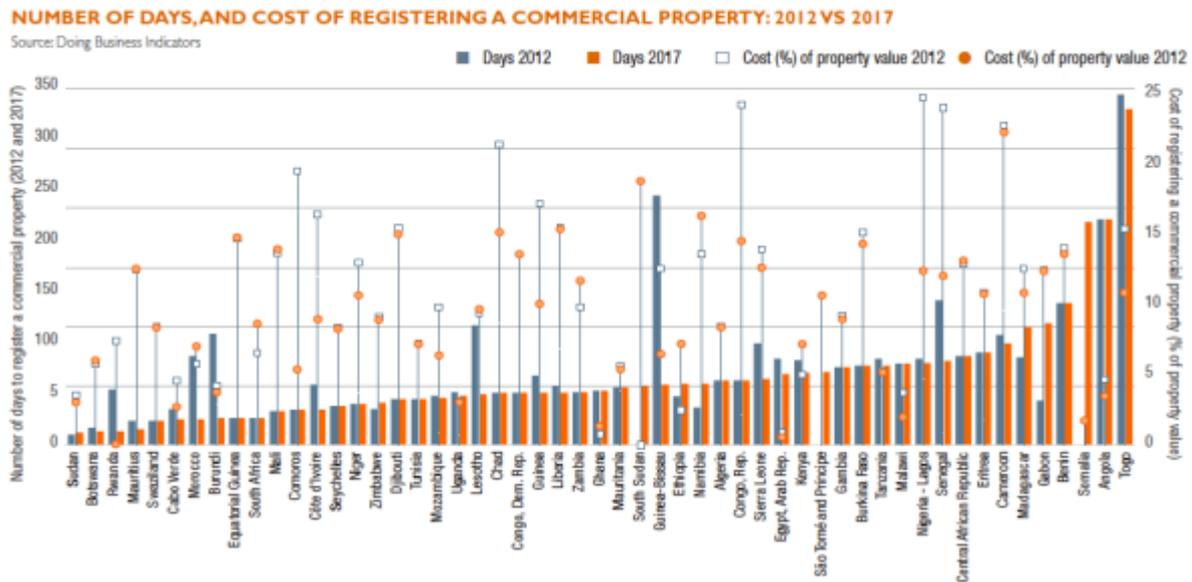
A critical role for government

However the private sector organises its efforts to deal with the reality of affordability and the constraints in accessing finance, the policy and regulatory environment remains hugely significant. Governments can have an enormous influence, whether through their fiscal policy, their taxation regimes, their land administration systems, housing policy, and so on, on the ability for scale and the price that is achieved. Very little data exists, however, on government effectiveness. Across the continent, CAHF has been able to source and download 48 policies and laws relating to finance, 34 relating to titles and tenure, 52 relating to infrastructure, 53 relating to construction, 53 to land, and 24 to sales and transfer. Are these all the right policies and laws, and do they give sufficient attention to the specificity of affordable housing? This requires a country-by-country analysis.

The World Bank Group's annual Doing Business Survey includes proxy indicators in this regard. Measuring the number of days it takes, and how much it costs, to register a

⁶ World Bank (2017) Housing: Unavailable and Unaffordable. Kenya Economic Update, edition no. 15, April 2017

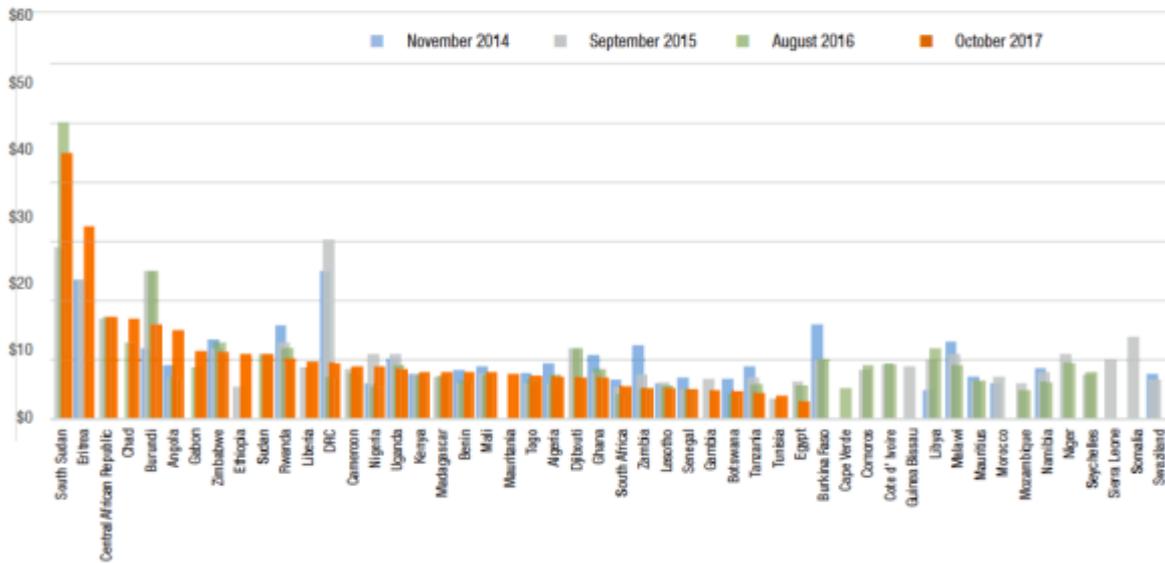
warehouse (this, as a proxy for residential property, which is not currently studied), the Doing Business Indicators (DBI) between 2012 and 2017 show remarkable progress in Rwanda, Morocco, Burundi, Cote d'Ivoire, Lesotho, Guinea-Bissau, and Senegal in terms of time; and in Rwanda, the Comoros, Cote d'Ivoire, Chad, Guinea, Guinea-Bissau, Nigeria and Senegal in terms of the cost (percent of property value). In Madagascar and Gabon, the registration of a commercial property has become more expensive, and in Ethiopia, Namibia, and Kenya, also slower.



Government policy, regulation and expenditure also has an impact on the price of key inputs into the housing value chain. For the past eight years, CAHF has been tracking the price of cement. It is coming down, significantly in most countries – see the orange bar in the graph below. However, in some countries, the 2017 price is above previous years – Eritrea, Chad, Angola, Ethiopia. High prices persist in South Sudan, Eritrea, the Central African Republic, Chad, even Burundi which came down in the past year, suggesting inefficient markets that are encumbered by any number of factors – transport routes, political violence, currency fluctuation, and so on.

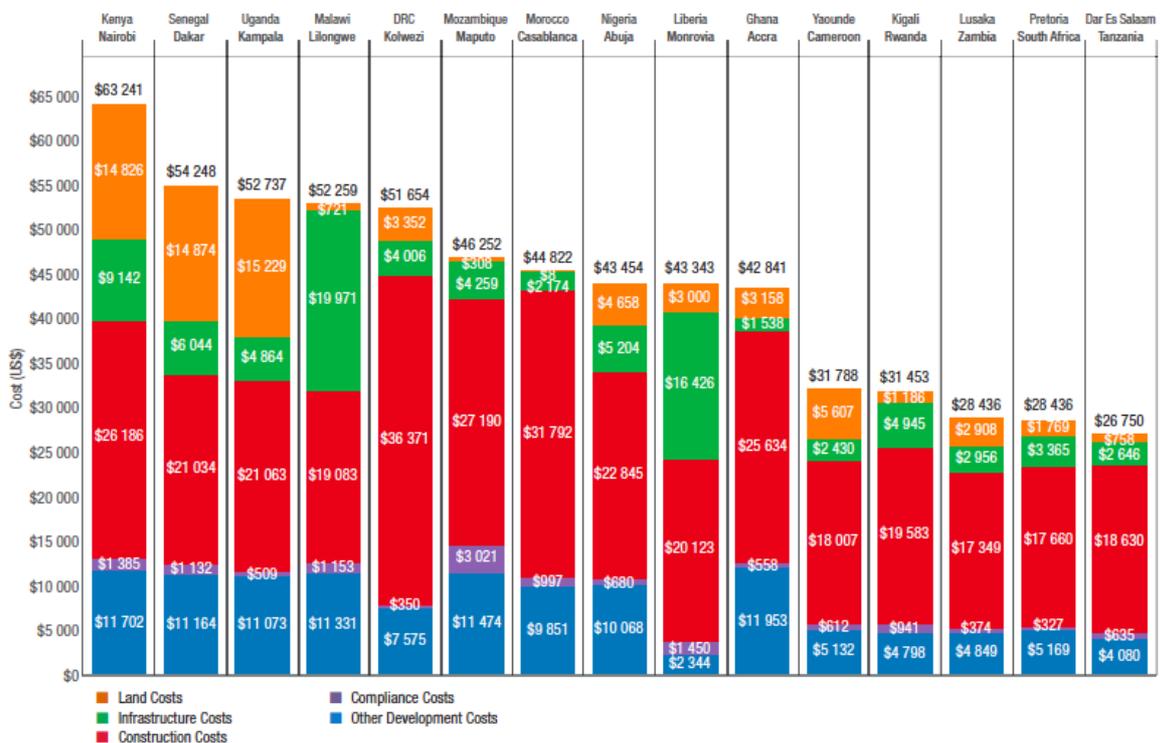
PRICE OF A 50KG BAG OF CEMENT (US\$)

Source: CAHF Research, October 2017



The role of government policy is perhaps best seen in our work that has been trying to cost a standard “generic” house: a 46m² unit constructed with cement block and plastered walls, galvanized iron sheeting, concrete slab, with a 9m² verandah, on a 120m² plot of land, in a project of twenty units, across the main cities of sixteen countries. The specification was shared with quantity surveyors in each country, and costings of this house, using the same building materials and specifications, were sought.

THE COST OF PRODUCING A 'GENERIC' 55M² HOUSE IN MAIN CITIES ACROSS AFRICA



Source: CAHF Research, 2017

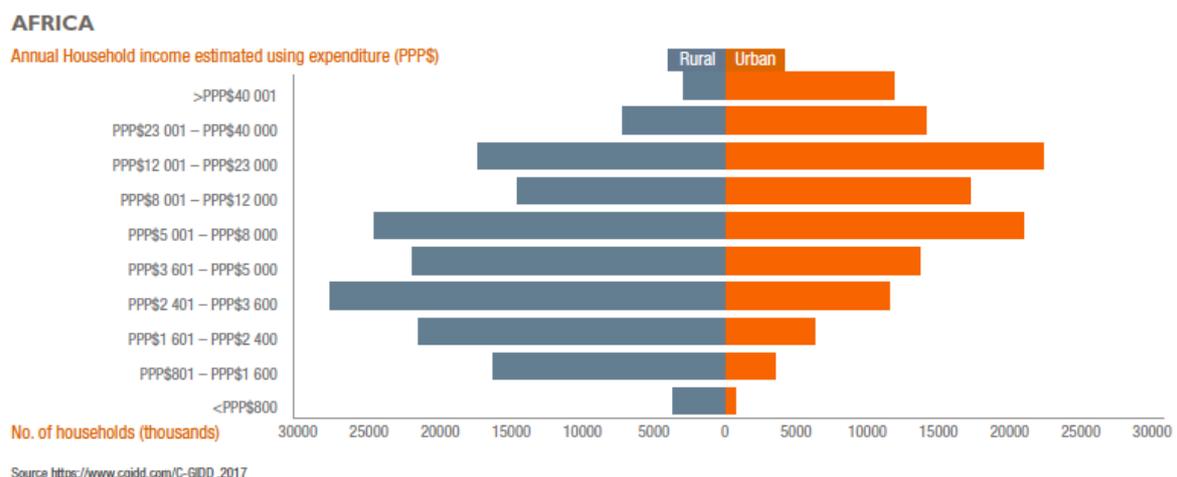
The study showed huge variation: next door to one another, Kenya and Tanzania occupy the position of the highest and lowest price house, respectively. The main difference there is in the cost of land and infrastructure, as well as other development costs, although a difference in construction costs is also evident. Land in Nairobi, Dakar, and Kampala is particularly significant as a proportion of the overall house cost. In Lilongwe and Monrovia, the key issue is infrastructure. The data bears further investigation, but the link to public policy is clear.

Focusing on the affordability opportunity

The only way that Africa’s housing markets will begin to perform as their size and diversity suggests is possible, is if all players – government, the private sector, and households themselves – come to accept the reality of affordability, and view this as an opportunity rather than as a constraint.

Affordability is a perpetually elusive figure – not only does it vary from one country to the next, and indeed within countries, it also varies from household to household. We use proxies: a rough estimate of household income derived from consumption figures, segmented into bands that then offer the potential for different sorts of housing products, delivered all at once or incrementally, financed with a mortgage, other forms of secured finance, unsecured housing finance, or savings.

Our affordability graphs use C-GIDD (Canback Global Income Distribution Database) 2016 consumption data for households (in PPP\$) and apply various assumptions relating to house price and mortgage affordability. Plotting the number of households by annual household income, in rural and urban areas, the graphs offer an indication of housing affordability and suggest where investors and developers might target which efforts.



An explanation of the approach adopted to compare housing affordability in different African countries

The task of comparing housing affordability in African countries is made more difficult because the cost of houses, and the incomes used to pay for them, are usually denominated in the local currency of the countries included in the analysis. For this reason, previous editions of this Yearbook used to convert relevant elements of the affordability calculations into a single, internationally-accepted currency – the United States dollar – using prevailing market exchange rates. However, currency markets seldom reflect movements in rates of exchange that are consistent with inflation differentials. Currency market exchange

rates tend to be far more volatile over time than house prices and incomes expressed in local currency terms. This is especially true of countries – of which there are a number of examples in Africa - with comparatively narrow export bases whose currencies are unduly affected by the prevailing prices of their primary export commodities on international markets. Nigeria is a good example of this. Between August 2016 and August 2017, the Naira strengthened against the US dollar by just over 1%, but over the same period inflation in Nigeria increased by more than 16% while in the United States it was less than 2%. To reflect relative purchasing power, the Naira should have weakened against the US dollar by around 14%. However, in the previous twelve months (August 2015 to August 2016), the Naira weakened by 36% against the US dollar while the inflation differential between the two countries was close to 16%.

Because of the distortions that the use of prevailing market exchange rates can give rise to, it was decided to convert the affordability calculations in this Yearbook into international purchasing power parity (PPP) dollars. A PPP dollar is a notional currency that reflects the rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country. Consistent use of PPP dollars over time will not only significantly reduce the volatility that was inherent in the previous US\$-based calculations, but will also provide a more accurate reflection of the relative affordability of housing in each of the African countries included in the analysis – both in a particular year, and over time.

The housing affordability calculations make use of the average costs of an affordable housing unit in each country, prevailing minimum down-payment requirements and mortgage rates, typical mortgage terms and the distribution of household incomes in both urban and rural areas. The house costs, down-payment and household incomes are all valued in PPP dollars using exchange rates calculated by the International Monetary Fund.

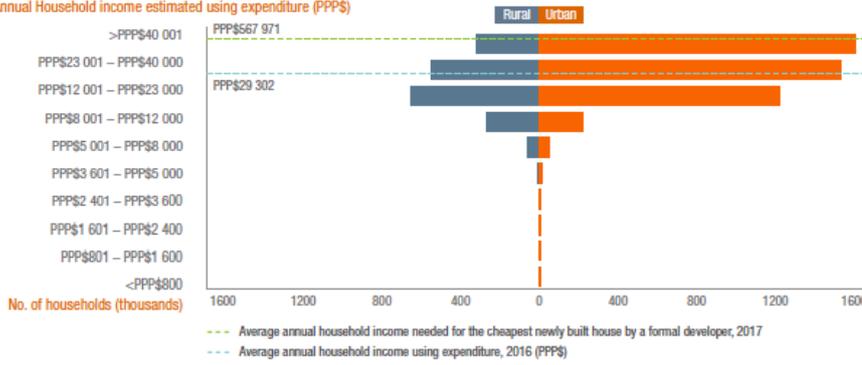
A further refinement in this Yearbook is that the estimates of household income are based on declared household expenditure (or consumption), rather than declared incomes. Household expenditure data takes account of informal income and is generally regarded as a more accurate measure because survey respondents are less inclined to undercount their expenditure than they are their incomes. Note that affordability calculations based on household consumption *may not* translate into mortgage access. Lenders still need to learn how to underwrite for informal incomes and are more likely to determine mortgage affordability on the basis of formal wage income.

CAHF uses the Canback Global Income Distribution Database to calculate the affordability graphs in this Yearbook. For more information or to download the data directly visit www.cgidd.com

Keith Lockwood

ALGERIA

Annual Household income estimated using expenditure (PPP\$)



Population:
40 606 000

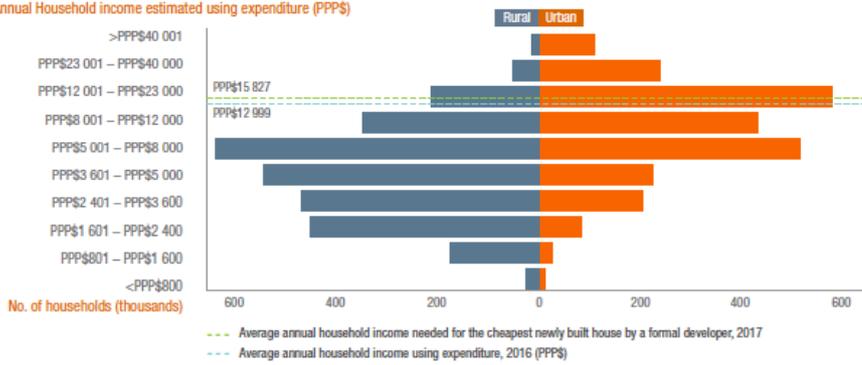
Urbanisation Rate (% p.a.)
2.64

Cost of Unit (PPP\$)
1 863 319 (2016)

% of urban households
that can afford this house:
34.5

ANGOLA

Annual Household income estimated using expenditure (PPP\$)



Population:
28 813 000

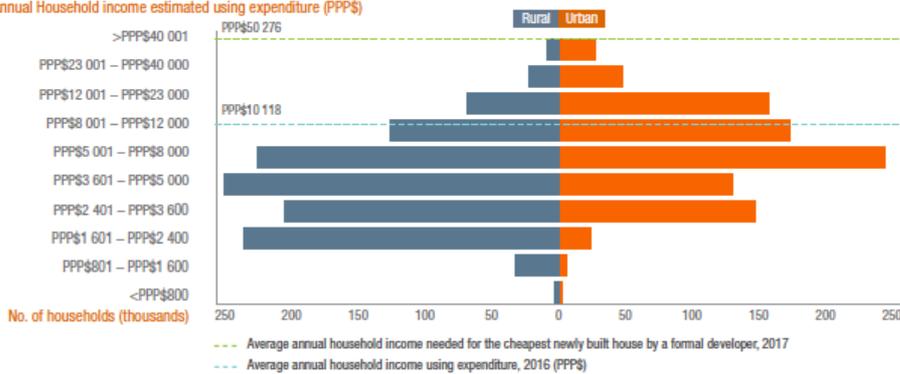
Urbanisation Rate (% p.a.)
5.10

Cost of Unit (PPP\$)
39 631

% of urban households
that can afford this house:
38.3

BENIN

Annual Household income estimated using expenditure (PPP\$)



Population:
10 872 000

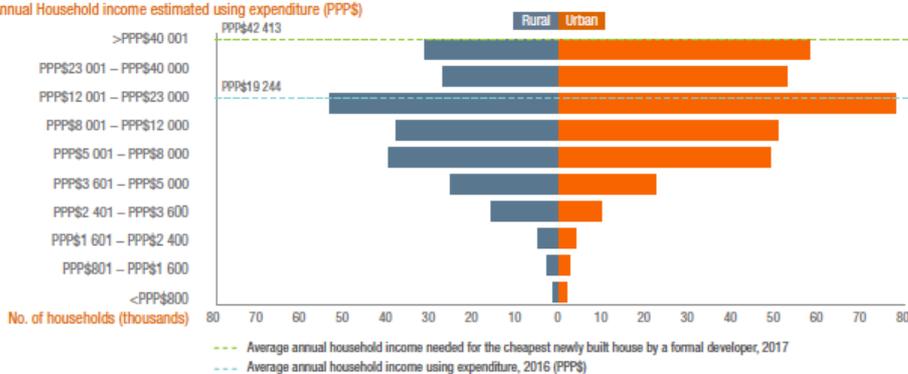
Urbanisation Rate (% p.a.)
3.77

Cost of Unit (PPP\$)
41 321

% of urban households
that can afford this house:
2.7

BOTSWANA

Annual Household income estimated using expenditure (PPP\$)



Population:
2 250 000

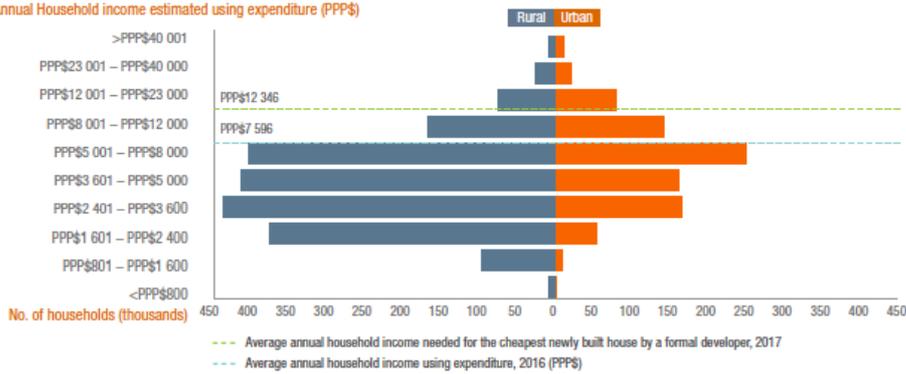
Urbanisation Rate (% p.a.)
2.30

Cost of Unit (PPP\$)
125 992

% of urban households
that can afford this house:
17.7

BURKINA FASO

Annual Household income estimated using expenditure (PPP\$)



Population:
18 646 000

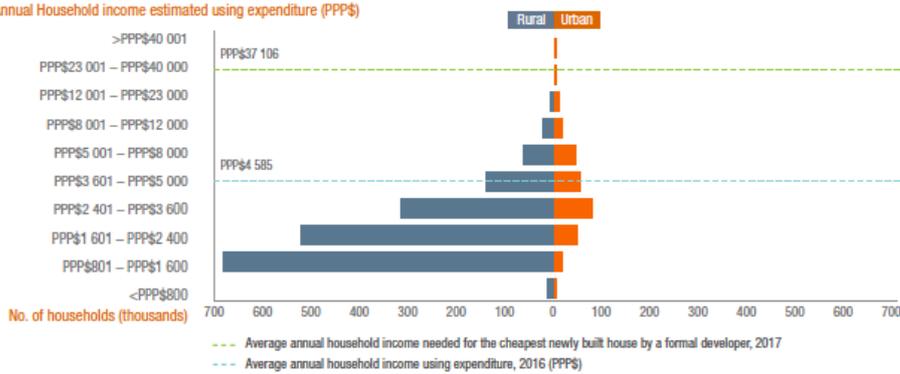
Urbanisation Rate (% p.a.)
5.65

Cost of Unit (PPP\$)
22 163 (2016)

% of urban households
that can afford this house:
12.2

BURUNDI

Annual Household income estimated using expenditure (PPP\$)



Population:
10 524 000

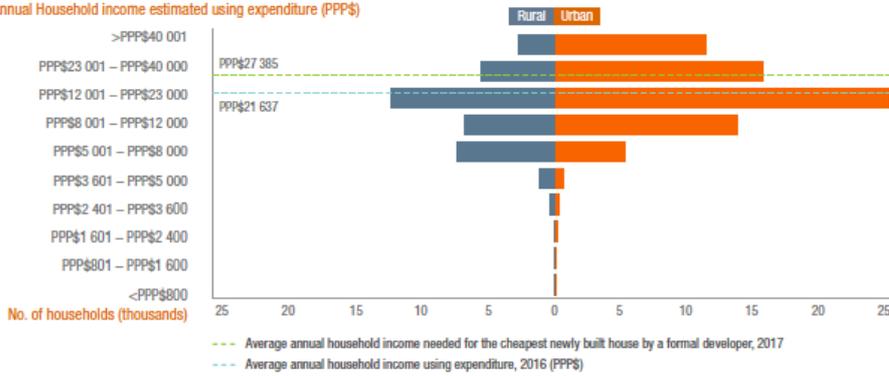
Urbanisation Rate (% p.a.)
5.61

Cost of Unit (PPP\$)
78 571

% of urban households
that can afford this house:
0.1

CABOVERDE

Annual Household income estimated using expenditure (PPP\$)



Population:
539 000

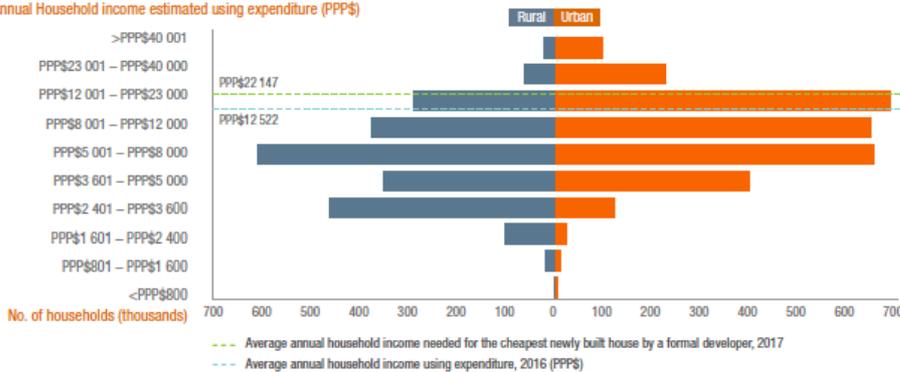
Urbanisation Rate (% p.a.)
2.24

Cost of Unit (PPP\$)
63 623

% of urban households
that can afford this house:
37.4

CAMEROON

Annual Household income estimated using expenditure (PPP\$)



Population:
23 439 000

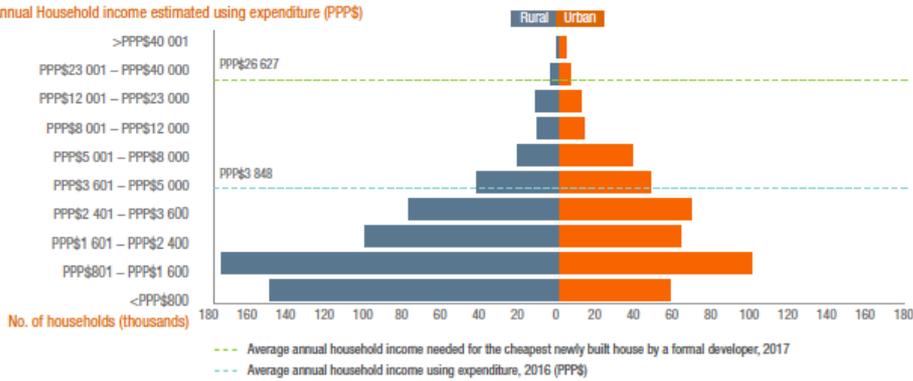
Urbanisation Rate (% p.a.)
3.63

Cost of Unit (PPP\$)
45 905

% of urban households
that can afford this house:
11.2

CENTRAL AFRICAN REPUBLIC

Annual Household income estimated using expenditure (PPP\$)



Population:
4 594 000

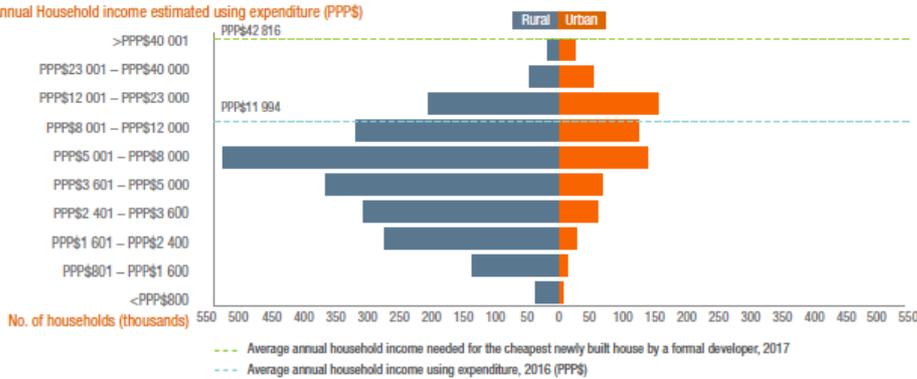
Urbanisation Rate (% p.a.)
1.80

Cost of Unit (PPP\$)
39 564

% of urban households
that can afford this house:
2.3

CHAD

Annual Household income estimated using expenditure (PPP\$)



Population:
14 452 000

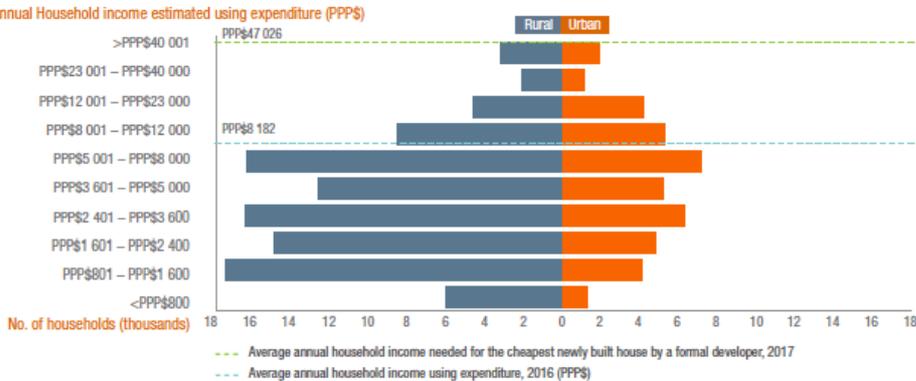
Urbanisation Rate (% p.a.)
3.77

Cost of Unit (PPP\$)
68 695

% of urban households
that can afford this house:
3.5

COMOROS

Annual Household income estimated using expenditure (PPP\$)



Population:
795 601

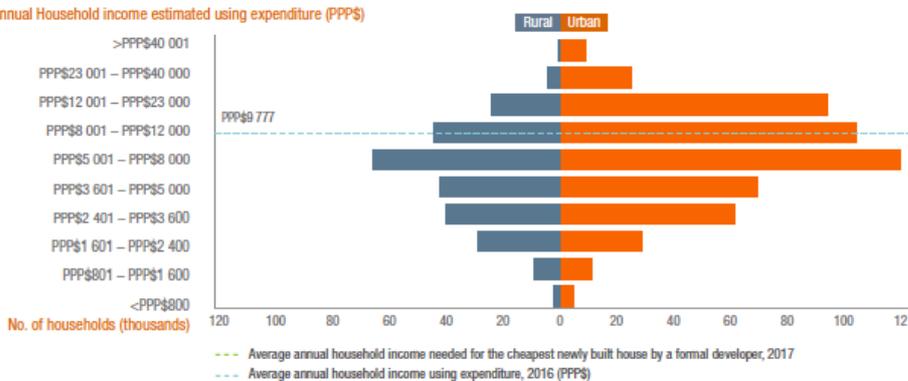
Urbanisation Rate (% p.a.)
2.72

Cost of Unit (PPP\$)
78 409

% of urban households
that can afford this house:
4.5

CONGO REPUBLIC

Annual Household income estimated using expenditure (PPP\$)



Population:
5 126 000

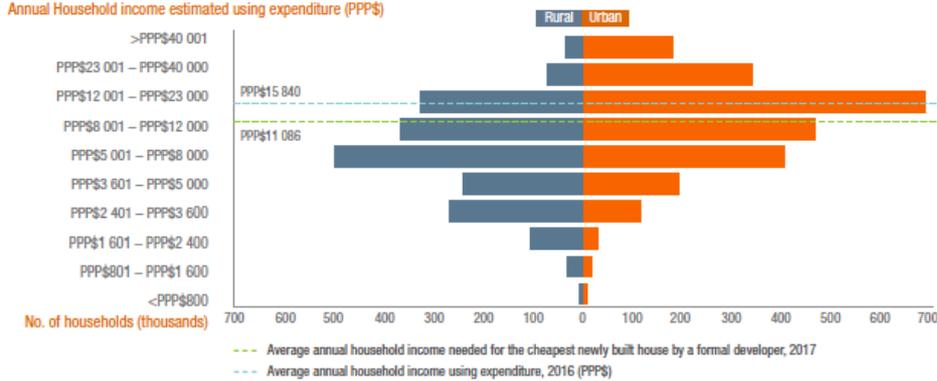
Urbanisation Rate (% p.a.)
–

Cost of Unit (PPP\$)
–

% of urban households
that can afford this house:
–

COTE D'IVOIRE

Annual Household income estimated using expenditure (PPP\$)



DEMOCRATIC REPUBLIC OF CONGO

Annual Household income estimated using expenditure (PPP\$)



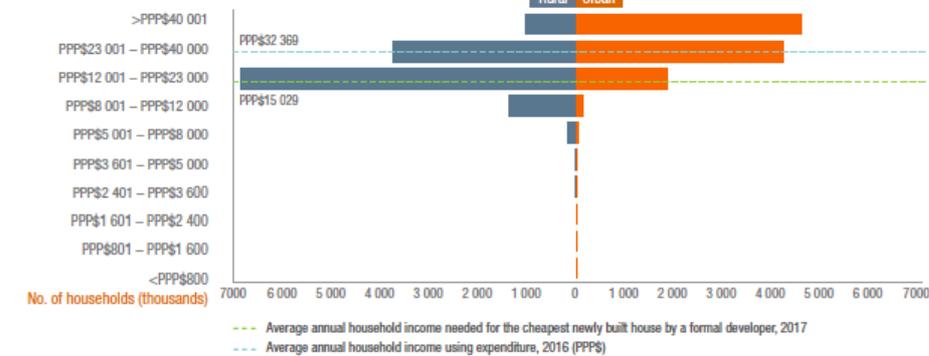
DJIBOUTI

Annual Household income estimated using expenditure (PPP\$)



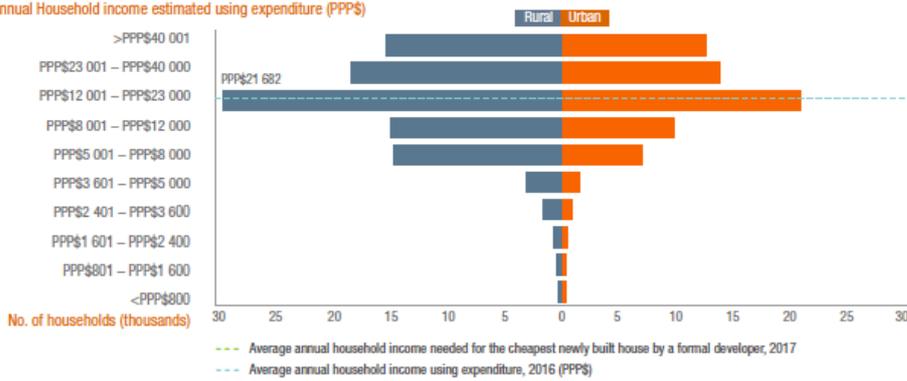
EGYPT, ARAB REP.

Annual Household income estimated using expenditure (PPP\$)



EQUATORIAL GUINEA

Annual Household income estimated using expenditure (PPP\$)



Population:
1 221 000

Urbanisation Rate (% p.a.)
4.30

Cost of Unit (PPP\$)
–

% of urban households
that can afford this house:
–

ERITREA

Annual Household income estimated using expenditure (PPP\$)



Population:
6 700 000

Urbanisation Rate (% p.a.)
3.95 (2011)

Cost of Unit (PPP\$)
132 536

% of urban households
that can afford this house:
2.1

ETHIOPIA

Annual Household income estimated using expenditure (PPP\$)



Population:
102 403 000

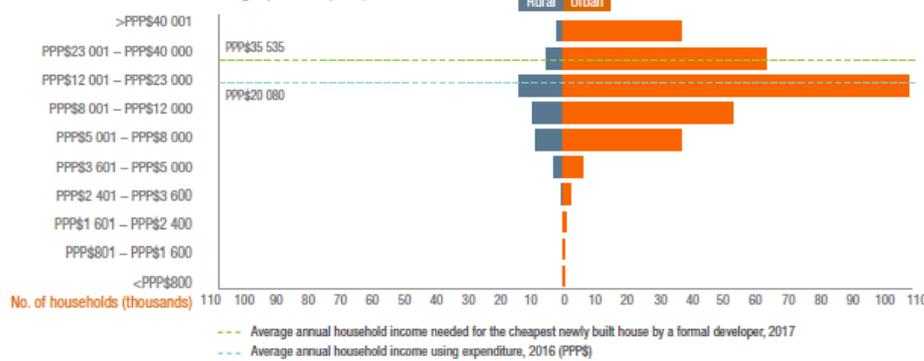
Urbanisation Rate (% p.a.)
4.79

Cost of Unit (PPP\$)
136 503

% of urban households
that can afford this house:
0.4

GABON

Annual Household income estimated using expenditure (PPP\$)



Population:
1 979 000

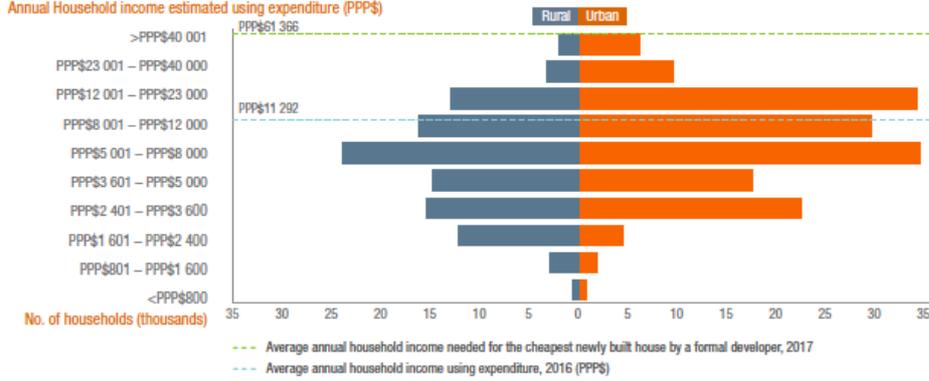
Urbanisation Rate (% p.a.)
2.78

Cost of Unit (PPP\$)
85 945

% of urban households
that can afford this house:
12.0

GAMBIA

Annual Household income estimated using expenditure (PPP\$)



Population: 2 038 000
 Urbanisation Rate (% p.a.) 4.02
 Cost of Unit (PPP\$) 91 884
 % of urban households that can afford this house: 3.8

GHANA

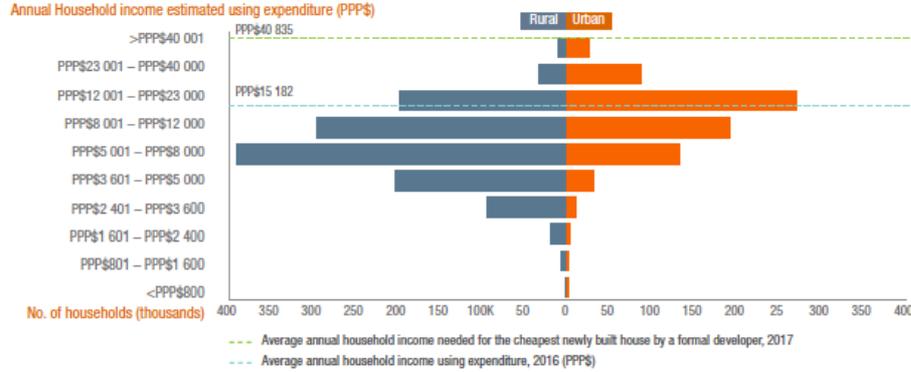
Annual Household income estimated using expenditure (PPP\$)



Population: 28 206 000
 Urbanisation Rate (% p.a.) 3.41
 Cost of Unit (PPP\$) 158 798
 % of urban households that can afford this house: 1.7

GUINEA

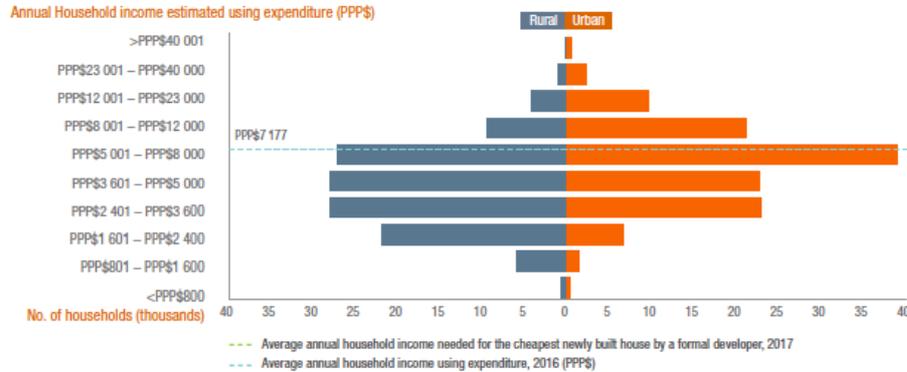
Annual Household income estimated using expenditure (PPP\$)



Population: 12 400 000
 Urbanisation Rate (% p.a.) –
 Cost of Unit (PPP\$) 74 388
 % of urban households that can afford this house: 3.5

GUINEA-BISSAU

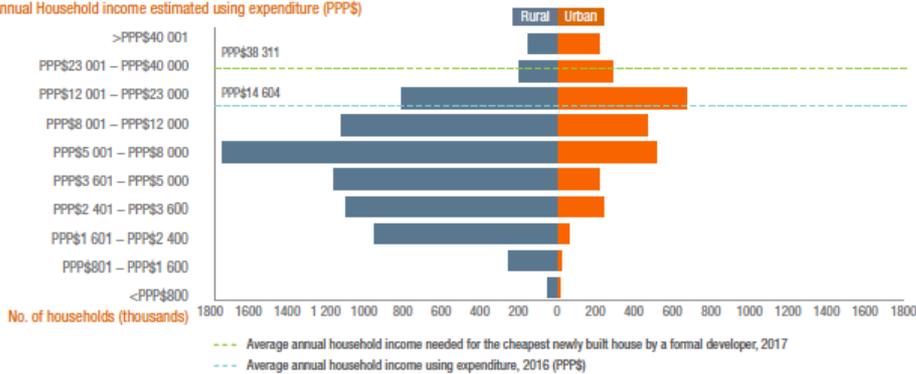
Annual Household income estimated using expenditure (PPP\$)



Population: 1 815 000
 Urbanisation Rate (% p.a.) 4.05
 Cost of Unit (PPP\$) –
 % of urban households that can afford this house: –

KENYA

Annual Household income estimated using expenditure (PPP\$)



Population:
48 461 000

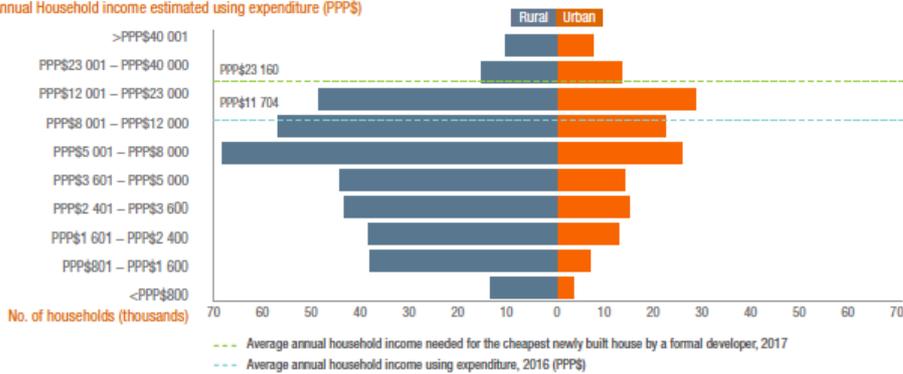
Urbanisation Rate (% p.a.)
4.24

Cost of Unit (PPP\$)
65 365

% of urban households
that can afford this house:
8.1

LESOTHO

Annual Household income estimated using expenditure (PPP\$)



Population:
2 203 000

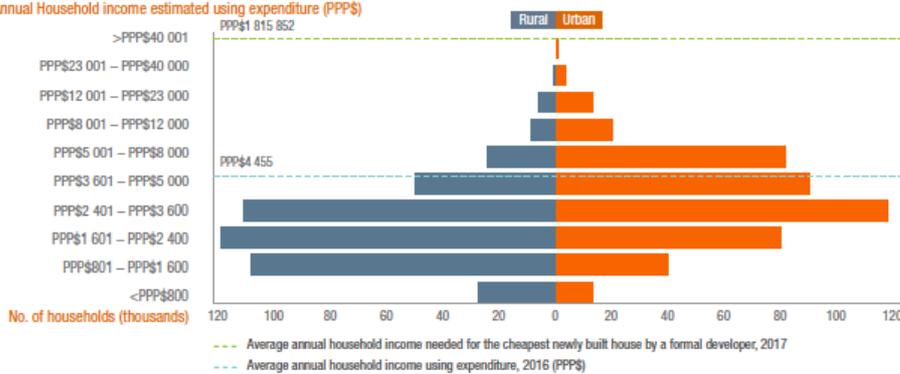
Urbanisation Rate (% p.a.)
3.25

Cost of Unit (PPP\$)
52 410

% of urban households
that can afford this house:
13.8

LIBERIA

Annual Household income estimated using expenditure (PPP\$)



Population:
4 613 000

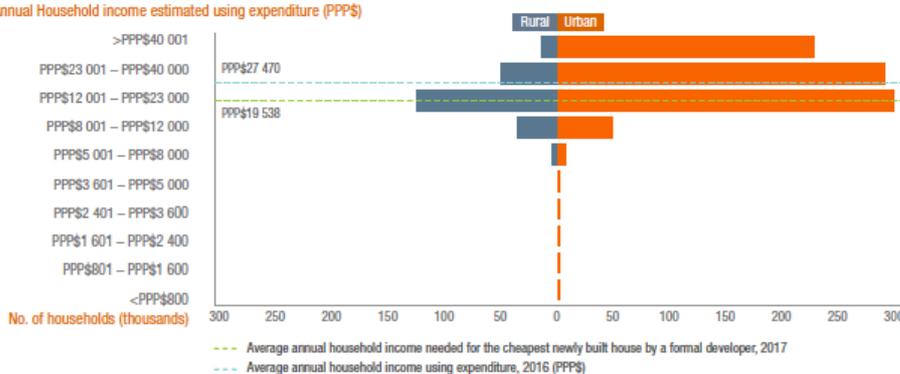
Urbanisation Rate (% p.a.)
3.31

Cost of Unit (PPP\$)
2 903 041

% of urban households
that can afford this house:
0.1

LIBYA

Annual Household income estimated using expenditure (PPP\$)



Population:
6 293 000

Urbanisation Rate (% p.a.)
1.18

Cost of Unit (PPP\$)
79 099 (2016)

% of urban households
that can afford this house:
59.3

MADAGASCAR

Annual Household income estimated using expenditure (PPP\$)



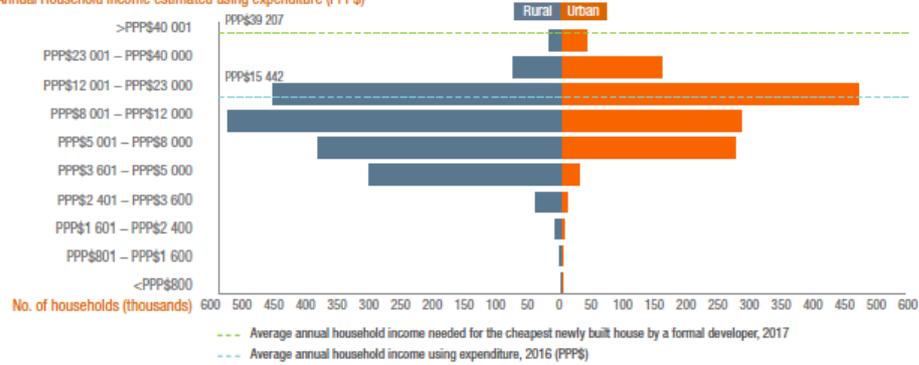
MALAWI

Annual Household income estimated using expenditure (PPP\$)



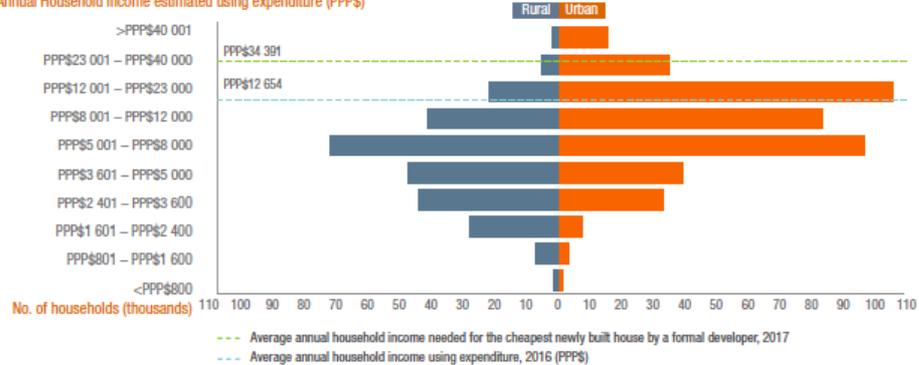
MALI

Annual Household income estimated using expenditure (PPP\$)



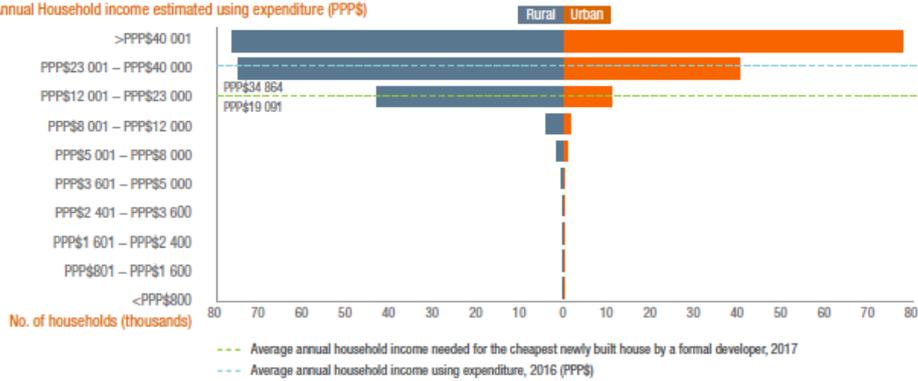
MAURITANIA

Annual Household income estimated using expenditure (PPP\$)



MAURITIUS

Annual Household income estimated using expenditure (PPP\$)



Population:
1 263 000

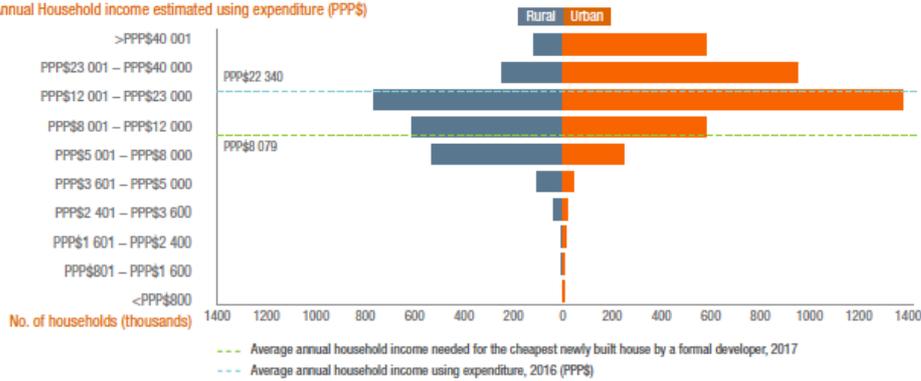
Urbanisation Rate (% p.a.)
-0.24

Cost of Unit (PPP\$)
67 165

% of urban households
that can afford this house:
89.6

MOROCCO

Annual Household income estimated using expenditure (PPP\$)



Population:
35 276 000

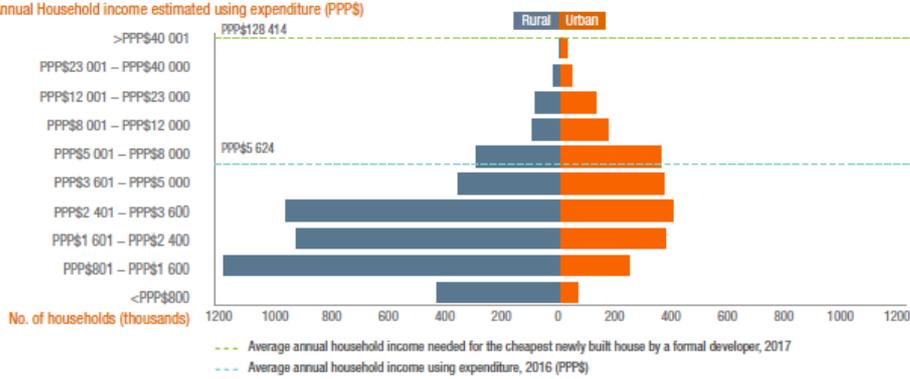
Urbanisation Rate (% p.a.)
2.16

Cost of Unit (PPP\$)
37 417 (2016)

% of urban households
that can afford this house:
91.8

MOZAMBIQUE

Annual Household income estimated using expenditure (PPP\$)



Population:
28 829 000

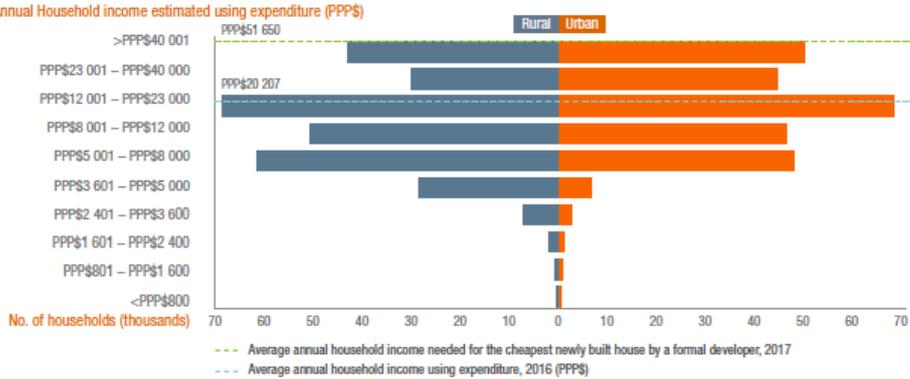
Urbanisation Rate (% p.a.)
3.79

Cost of Unit (PPP\$)
158 666

% of urban households
that can afford this house:
1.0

NAMIBIA

Annual Household income estimated using expenditure (PPP\$)



Population:
2 479 000

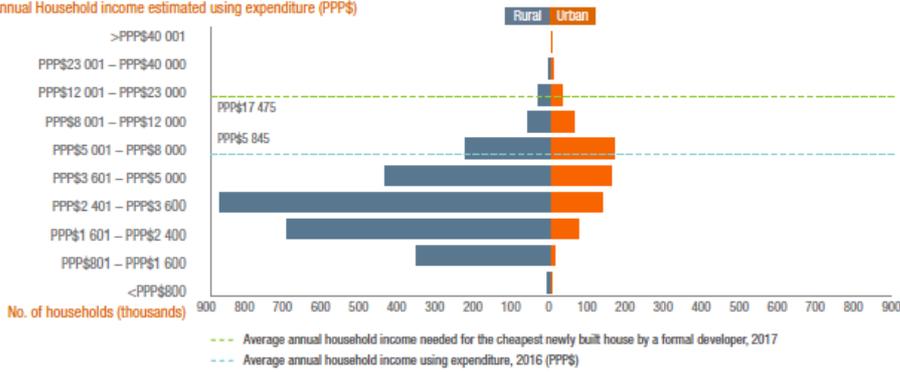
Urbanisation Rate (% p.a.)
4.26

Cost of Unit (PPP\$)
111 875

% of urban households
that can afford this house:
18.7

NIGER

Annual Household income estimated using expenditure (PPP\$)



Population:
20 672 000

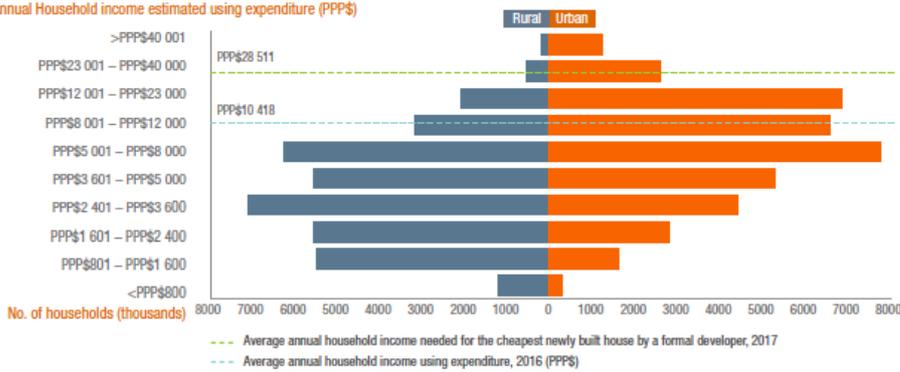
Urbanisation Rate (% p.a.)
5.30

Cost of Unit (PPP\$)
32 301

% of urban households
that can afford this house:
6.1

NIGERIA

Annual Household income estimated using expenditure (PPP\$)



Population:
185 989 000

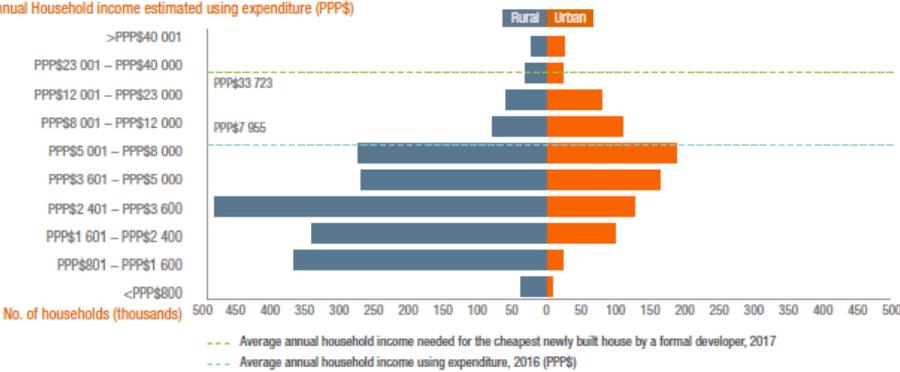
Urbanisation Rate (% p.a.)
4.32

Cost of Unit (PPP\$)
28 225

% of urban households
that can afford this house:
9.7

RWANDA

Annual Household income estimated using expenditure (PPP\$)



Population:
11 917 000

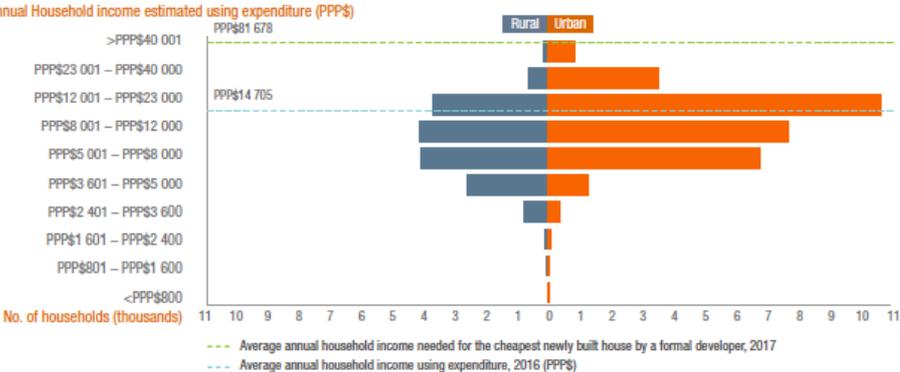
Urbanisation Rate (% p.a.)
5.74

Cost of Unit (PPP\$)
60 043

% of urban households
that can afford this house:
2.9

SÃO TOMÉ AND PRÍNCIPE

Annual Household income estimated using expenditure (PPP\$)



Population:
199 910

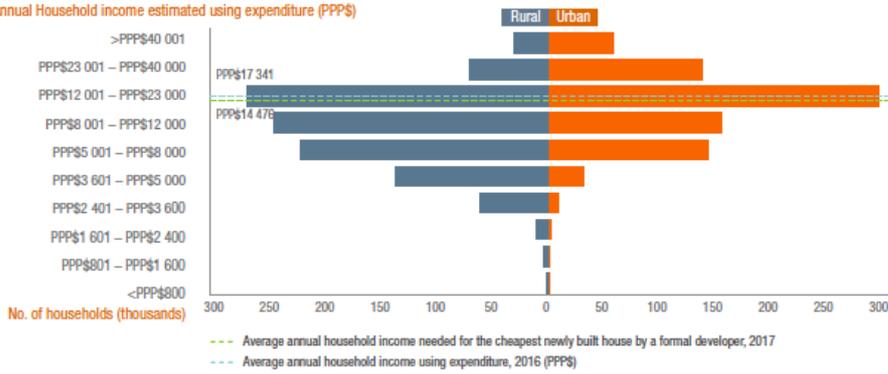
Urbanisation Rate (% p.a.)
-

Cost of Unit (PPP\$)
125 421

% of urban households
that can afford this house:
2.7

SENEGAL

Annual Household income estimated using expenditure (PPP\$)



Population:
15 411 000

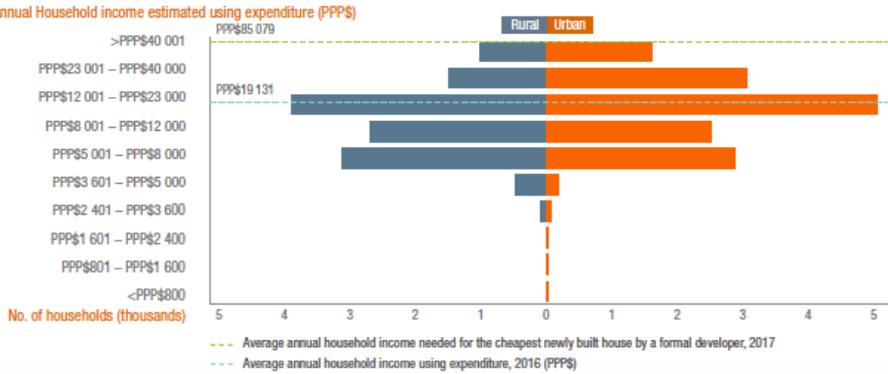
Urbanisation Rate (% p.a.)
3.64

Cost of Unit (PPP\$)
55 346

% of urban households
that can afford this house:
58.9

SEYCHELLES

Annual Household income estimated using expenditure (PPP\$)



Population:
94 677

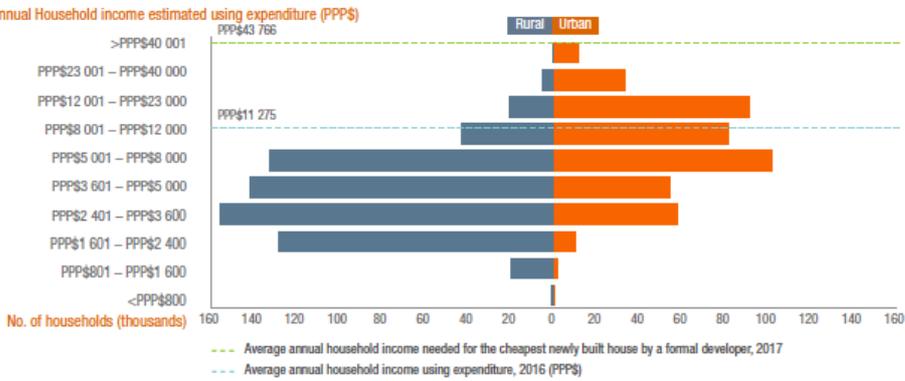
Urbanisation Rate (% p.a.)
1.94

Cost of Unit (PPP\$)
255 395

% of urban households
that can afford this house:
10.5

SIERRA LEONE

Annual Household income estimated using expenditure (PPP\$)



Population:
7 396 000

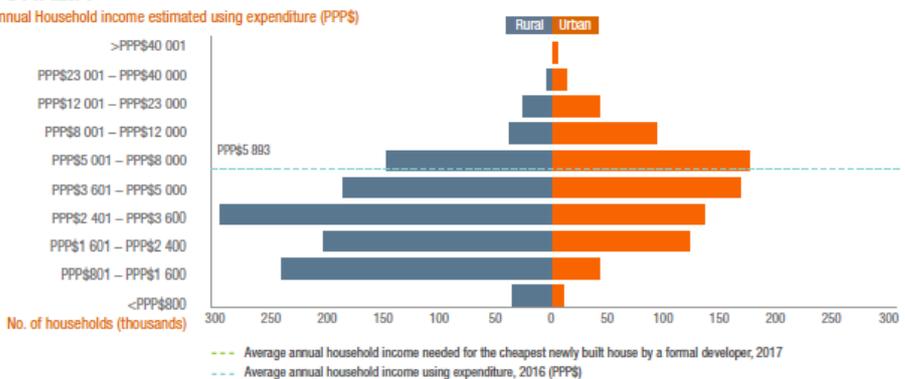
Urbanisation Rate (% p.a.)
3.11

Cost of Unit (PPP\$)
132 834 (2016)

% of urban households
that can afford this house:
2.6

SOMALIA

Annual Household income estimated using expenditure (PPP\$)



Population:
14 318 000

Urbanisation Rate (% p.a.)
4.11

Cost of Unit (PPP\$)
-

% of urban households
that can afford this house:
-

SOUTH AFRICA

Annual Household income estimated using expenditure (PPP\$)



Population:
55 908 953

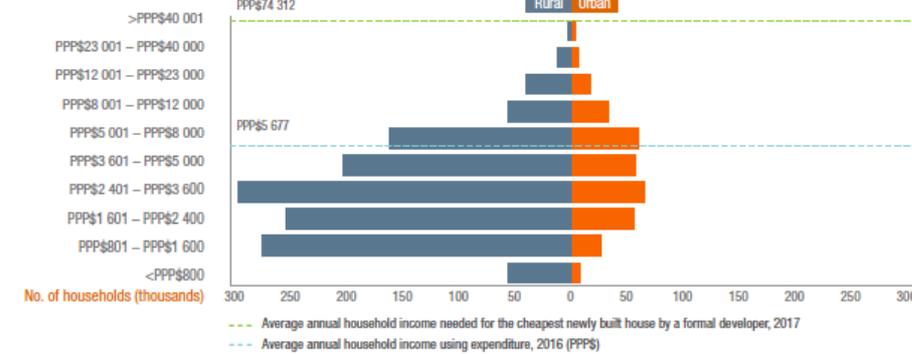
Urbanisation Rate (% p.a.)
2.38

Cost of Unit (PPP\$)
64 631

% of urban households
that can afford this house:
31.6

SOUTH SUDAN

Annual Household income estimated using expenditure (PPP\$)



Population:
12 230 000

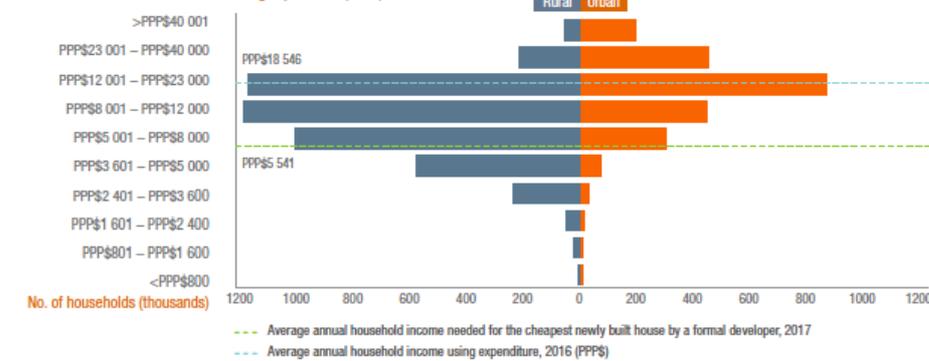
Urbanisation Rate (% p.a.)
4.09

Cost of Unit (PPP\$)
88 966

% of urban households
that can afford this house:
0.7

SUDAN

Annual Household income estimated using expenditure (PPP\$)



Population:
39 578 000

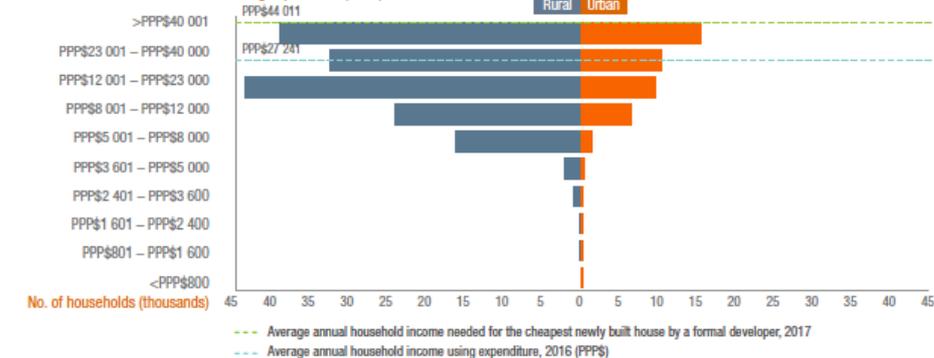
Urbanisation Rate (% p.a.)
2.97

Cost of Unit (PPP\$)
10 437

% of urban households
that can afford this house:
95.3

SWAZILAND

Annual Household income estimated using expenditure (PPP\$)



Population:
1 343 000

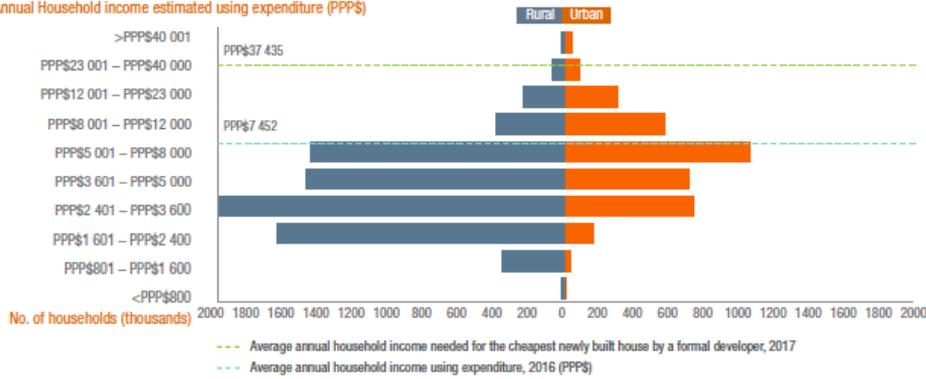
Urbanisation Rate (% p.a.)
1.84

Cost of Unit (PPP\$)
130 502 (2016)

% of urban households
that can afford this house:
35.5

TANZANIA

Annual Household income estimated using expenditure (PPP\$)



Population:
55 572 000

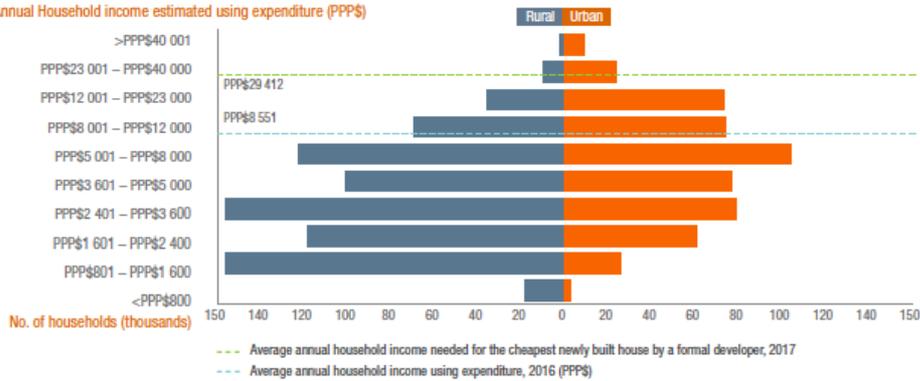
Urbanisation Rate (% p.a.)
5.31

Cost of Unit (PPP\$)
56 848

% of urban households
that can afford this house:
1.0

TOGO

Annual Household income estimated using expenditure (PPP\$)



Population:
7 606 000

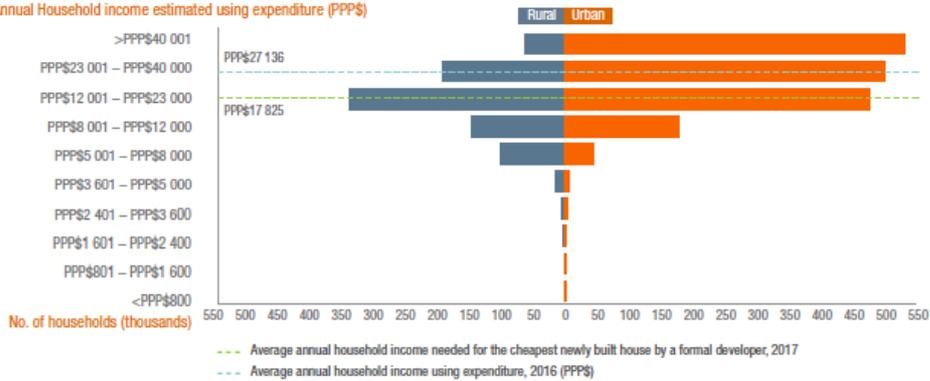
Urbanisation Rate (% p.a.)
3.76

Cost of Unit (PPP\$)
44 432

% of urban households
that can afford this house:
6.2

TUNISIA

Annual Household income estimated using expenditure (PPP\$)



Population:
11 403 000

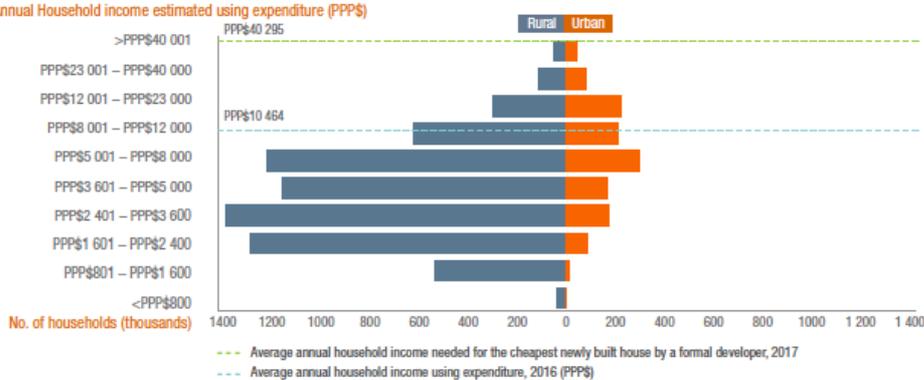
Urbanisation Rate (% p.a.)
1.45

Cost of Unit (PPP\$)
67 955(2013)

% of urban households
that can afford this house:
59.0

UGANDA

Annual Household income estimated using expenditure (PPP\$)



Population:
41 487 000

Urbanisation Rate (% p.a.)
5.40

Cost of Unit (PPP\$)
65 418

% of urban households
that can afford this house:
3.3

ZAMBIA

Annual Household income estimated using expenditure (PPP\$)



Population:
16 591 000

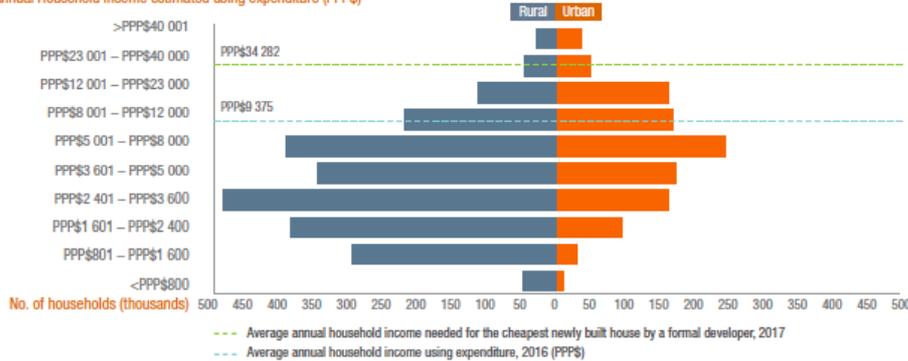
Urbanisation Rate (% p.a.)
4.11

Cost of Unit (PPP\$)
172 673

% of urban households
that can afford this house:
5.0

ZIMBABWE

Annual Household income estimated using expenditure (PPP\$)



Population:
16 150 000

Urbanisation Rate (% p.a.)
2.03

Cost of Unit (PPP\$)
48 733

% of urban households
that can afford this house:
3.2

Data and analytics for market development

A key challenge facing investors and policy makers, is the availability of sound data and market analytics over time. This deprives market participants of the capacity to target, plan, cost and execute projects, presenting a specific problem for low cost and affordable housing, where thin margins offer inadequate cushion for weak data. Better data, that is collected and stored more efficiently, would make the housing and housing finance markets in Africa work better for all market participants, including the poor.

Specific gaps include:

- **Market overview data** on who is investing in which parts of the housing delivery and financing value chains, for which types of residential real estate, in which countries or regions, targeting which submarkets, and with how much money or with which sorts of interventions. Quantification of volume and amounts being invested in each country in affordable housing and finance.
- **Market performance data**, segmented by target market, housing type or investment intervention, geography, etc.
- **Competitive market horizon:** the size, financial capacity, geographic reach and market share of participants in the housing sector and in the housing finance (mortgage, home equity, personal loan, consumer loan, microfinance and housing microfinance) sectors.

Data and the ability to quantify, track and analyse market activity is necessary market infrastructure to support increased investment in affordable housing across the continent. This is an ambitious focus – market infrastructure takes time to develop and is dependent on

political will and investor interest. Government, the public sector and civil society all have a role to play in championing open data, creating a self-reinforcing cycle of market information, market interest, better information, more interest, and so on, which in turn will build market and investor support for affordable housing on the continent.