

# **KeSEBAE NEWS**



Newsletter of the Kenya Society of Environmental, Biological and Agricultural Engineers

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### **Housing the Rural Population**



### 1.0 Introduction

Housing is one of the essential human needs and the constitution guarantees every citizen the right to access adequate housing, and reasonable standards of sanitation. Kenya has an annual housing demand of 250,000 units with an estimated supply of 50,000 units leading to a housing deficit of 2 million units or 80%. Many families are at high risk of diseases such as malaria, respiratory infections or parasitic jigger infestations which can be accounted to inadequate or poor housing. Housing delivery is the responsibility of county governments, which often lack adequate resources. 68% of Kenyans are without land documentation and tenure security.

The Kenya National Bureau of Statistics first volume census report published in 2019 November, presents the country's population at 47.5 million people with 12.2 million people and average household size of 3.9. 61.3 % of people owned homes while 38.7% were renting. In Urban areas, 21.3% owned homes while 78.75 were renting.

### **DEAR READER**

Welcome to KeSEBAE Newsletter.

A fortnightly Newsletter touching on topical issues affecting our environment.

KeSEBAE NEWS is a Newsletter of the Kenya Society of Environmental, **Biological** and Agricultural Engineers (KeSEBAE)

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In Kenya, field surveys conducted in rural areas indicated that most houses are constructed with low-grade building materials such as unprocessed clay, wattle and grass which most often do not provide sufficient shelter from rain, wind or disease bearing insects like mosquitoes and require high maintenance work. These dwellings lack basic sanitation facilities and sufficient living space of the size of the families living in them.

Housing has a significant role in national development. Investment in residential construction promotes economic growth by encouraging savings and investments. Secondly, housing plays a key role in the living standards of the people since it helps in keeping families healthy in order to participate in economic activities with close to maximum productivity. In the third way is that housings other benefits of investing in housing will be creating wealth, providing employment to the youth in rural areas. This will therefore limit the massive ruralurban migration usually steered by unemployment. The government therefore needs to develop and implement robust housing policies that will serve as a macro-economic stabilizer and an additional driver, apart from agriculture to economic development. The government involvement in improvement of housing in Kenya has been experienced through creation of policies and plans. A good example is the affordable housing plan and project launched in 2019 by the President that targets to provide homes to 500,000 homes across the country and the national housing policy enclosed is the national session No. 3 paper that give the policies for both rural and urban

Rural population refers to people living in rural areas. It is calculated as the difference between total population and urban population. housing. Majority of rural houses have been community built and are socio-culturally appropriate. The types of houses in rural areas include the manyattas by maasai community, semi-permanent huts by the Kalenjin community, the kikuyu huts and the newly improved permanent structures.

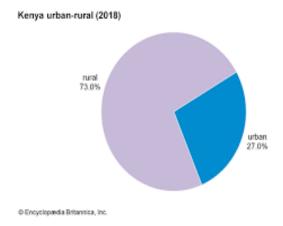
The government in partnership with other agencies such as Habitat a program of the United Nations and other public private partnerships has made efforts towards the affordable housing goal. It has been evidenced in Muranga'a where the county government is building homes to 2,000 people, in Kitui county the affordable housing project geared to provide 8,888 units, Lukenya and many others. Funding for housing through microfinance loans such as Nyumba smart loan by Kenya Women Trust Fund available to low-income earners particularly for housing.

### 2.0. Housing, Population and Poverty.

Housing refers to the job of providing houses for people to live in. Housing is one of the essential human needs and the constitution guarantees every citizen the right to access adequate housing, and reasonable standards of sanitation.

The Constitution in Chapter four under Article 43, sub-article 1 (a) guarantees every Kenyan economic and social rights by stating that, "Every person has the right to accessible and adequate housing, and to reasonable standards of sanitation".

According to the World Bank collection of development indicators, rural population was 7% of the total population in Kenya reported in 2020.



**Figure 2.0**: Rural and urban population in Kenya **Source**: Britannica

Rural population is significant as it is the backbone and primary source of agriculture in the country. Agriculture is key to Kenya's economy. It contributes to 26 per cent of the Gross Domestic Product (GDP) and another 27 per cent indirectly through other sectors linked to the agriculture. The sector employs over 40 per cent of the total population of which, more than 70 per cent is rural population. Agriculture accounts for 65 per cent of the export earnings and provides the livelihood and security for more than 80 per cent of the Kenyan population.

In Kenya, 35.5 per cent of the population is living below the poverty line. The overall poverty incidence remains highest in rural areas. According to the U.S Census Bureau, the 2016 official poverty rate was at 16 per cent unlike urban areas which represented 12 per cent of the poverty incidence.

It is therefore quite intriguing that the rural areas, from where the country's agricultural proceeds are grown, suffers the highest level of poverty. This clearly provides a gap that indicates with increased developments in the rural areas, could lead to increase in the agricultural production thereby increase in the

country's GDP while concurrently alleviating poverty.



**Figure 2.1**: Severe Housing Conditions in rural Kenya **Source:** Compassion International

Shelter, food and clothing are basic human needs as are fundamental elements that people require for survival and normal mental and physical health.

Shelter for the most times is very significant to economic development. This is because, the driving force behind production are human beings. Humans provide labour, this requires them to be strong physically. Thereby, housing the rural population, may have an impact in the increased in productivity of the country's economy.

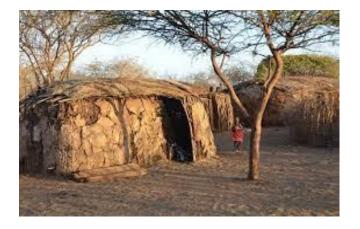
### 3.0 Current Situation of Rural Housing In Kenya

The main organising framework of rural housing in Kenya, is homestead/compound culture rather than village culture. Unlike other African countries like Tanzania, where one can boldly talk of ujamaa village, in Kenya, the concept of a village is an elusive one. It is not an apparent notion since people dwell in several scattered homesteads within a geographical area occupied by people of a lineage clan or other kinship group.

The decision to build in a traditional setting was a collective responsibility of the extended family and/or friends.

### 4.0. Types of Houses in Rural Kenya

Buildings in Kenya have had a common characteristic in their construction determined by many factors. Buildings in rural areas are quite different from houses in urban areas. Rural buildings in Kenya are in two categories, temporary and semi-permanent structures and permanent structures. In rural Kenya, building types and styles are influenced immensely by the region and traditional culture of the people living in the area. For example, The Maasai and Samburu tribes construct temporary 'Manyattas¹' to match their pastoralist lifestyle. Manyattas are made from twigs tied together by dried tree-bark or strings to make walls with thatched roofs.



**Figure 4.1:** Manyattas in Narok **Source:** Citizen Digital

The Kalenjin tribe construct semi-permanent huts with twigs and posts joined together using nails. Mud or clay is plastered on the twigs to make the walls and

floor and the roof is constructed of long grass or reeds.

The Kikuyu use timber for the walls, with poles and lattices made from saplings and filled with mud, brushwood walls or planked with hewn depending in the hut and iron sheets for the roof or thatched with grass. A layer of grass is added before the beginning of each rainy season and the number of grass layers indicates how old the house is.



**Figure 4.3**: Kikuyu hut of the 3<sup>rd</sup> wife in Kikuyu village at Bomas Kenya **Source:** Wikimedia.org

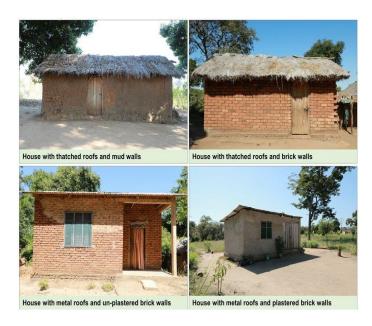
The Kisii group construct a round house without windows made from a frame of thin branches, mud walls and a conically-shaped thatched roof. In luo Nyanza, traditional semi-permanent houses are rounded huts made of twigs and mud with a little mixture of cement for the walls, grass thatched roofs or iron sheet roofs.

Permanent Structures are quickly replacing temporary structures. Permanent houses are made of stones and mortar. For those who find stones and mortar, bricks are utilised. Bricks are made by mixing clay with sand, straw, stone, concrete and lime, and

https://ezinearticles.com/?Building-Types-and-Styles-of-Kenya&id=8974583

<sup>&</sup>lt;sup>1</sup> James EHarrison (March 2015) Building Types and Styles of Kenya.

then shaped into blocks that are either air dried or dried in in kiln. The bricks are used for walls and pavements. In several homesteads, bathrooms and kitchen are often built-in separate locations from the main house.



### 5.0 Characteristics of Good Housing

Good housing conditions comprise of the following aspects:

- Type of house in terms of shape and nature of building materials
- Size of the house and the homestead in terms of in- and outdoor living space per person
- Available amenities such as kitchen, toilet, water, electricity and proper sewerage system.
- Availability of and access to infrastructural and community services such as health, education facilities and public transport.

### **6.0 Role of Housing in Economic Development**

Improvement of shelter in the rural areas can help reduce the poverty levels. The term shelter encompasses; a sheltered space for living, working and production-related functions, physical infrastructure including water and sanitation, access

to basic health, educational and other essential services.

Poverty is a state of material deprivation in respect to basic needs of which includes shelter. Provision and improvement in shelter contributes to qualitative and quantitative improvements in poverty reduction among the people in rural areas.

Improvement of shelter results in improvement of health as this emphasises increase in sanitation facilities and drinking treated water.

Considering agriculture is the main steer in rural economy, improvement of shelter must also encompass improving grain storage facilities. In most rural homesteads, in Africa, annual post-harvest losses are adversely felt from poor storagefacilities. These losses are as high as 10 to 29 per cent of the total harvest. Therefore, careful attention in improving grain storage facilities can improve food shortages in rural areas.

The construction sector is a major player in improvement of housing or shelter. It can be utilised as a basis for sustained economic growth. It can have an impact on economic production and providing employment, as most of the required processed and semi-processed inputs can be provided by labour-intensive domestic suppliers and basic industries such as cement and steel.

Housing projects will make use of the readily available labour, building materials, water and appropriate technologies.

For low-income communities, few imported inputs are required for shelter production. Housing is not an internationally tradeable good, therefore it does not depend on the international market. Henceforth, the manufacturing of building materials and construction

of low-cost housing and settlement infrastructure is a self-reliant development that benefits a country individually.

Good housing improves the living conditions of the labour force and leads to higher productivity.

### 6.1. Challenges in Housing Improvement

Housing, despite being a basic need to people, the finances required to improve the housing conditions of the masses are of such magnitude that governments of the third world countries are unable to substancially contribute to solve the problems. Therefore, housing improvements should be based on the activites of the inbitants with only marginal assistance from the government.

### 7.0 Kenyan Government Involvement on housing

The housing policies for Kenya are enclosed in the National Housing Policy for Kenya<sup>2</sup>, sessional paper No. 3 of April 2016. The major elements of Sessional Paper No. 3 of 2016 on National Housing Policy fall under two broad areas namely: - the policy targets and housing inputs.

## 7.1. Efforts currently undertaken to improve rural housing in Kenya

About 2,000 Murang'a residents from poor backgrounds were set in October 2019 to benefit from affordable housing units from the county government to save them from adverse weather. This initiative was after the loss of lives of several citizens including an elderly lady two years ago who died and her house caved in Kigumo constituency after a landslide caused by heavy rains. For a long time, residents in

Murang'a have been known to inhabit timber houses that a few houses cave during heavy rains.



**Figure 7. 1**: Affordable housing project plan in Murang'a **Source**: Construction line

The program is set to run up to 2022. The county government intends to set up a two-roomed permanent house at a minimum cost of as low as 100,000 per unit. Residents are only required to provide labour and land where stabilized block house units will be constructed. Kenya's Affordable Housing Programme (AHP) was launched in December 2017 as one of the national government's four pillars of growth, in the President's big four Agenda. The AHP promises to deliver 500,000 affordable homes over a five-year period, which involves a number of incentive and supports to enable the delivery of affordable housing in Kenya. Among these are the affordable housing project in Kitui county and Lukenya, Athi River.

Kitui county affordable Housing project, Kalawa road is a public private partnership between the Kitui county government and Tecnofin Kenya ltd, a local real estate company.

<u>content/uploads/2019/10/Updated-Sessional-Paper-No.3-of-2016-National-Housing-Policy.pdf</u>

<sup>&</sup>lt;sup>2</sup> Updated Sessional Paper No.3 of 2016- National Housing Policy <a href="https://www.housingandurban.go.ke/wp-">https://www.housingandurban.go.ke/wp-</a>



**Figure 7.2:** Kitui affordable housing plan **Source:** Added Value Group

It is located along Kalwa road, opposite WARMA offices within Kitui town. Kalawa housing will provide modern, unparalled residential community with inbuilt amenities for comfortable organised living at a fraction of the market rate. This plan was launched in December 2020, and is set to be complete in 24 months from then.

In November 2019, the President launched the Habitat heights development in Lukenya as part of Kenya's broader national affordable housing programme which aims to build 500,000 homes. The Habitat heights project aims to deliver 8,888 unit.

Housing microfinance has been employed as a major contributor to affordable housing plan. Here, people are allowed to access loans from different premierships for constructing their own homes. This has an advantageous edge since the people are able to build their houses to their own specifications, designs and preferences. This strategy targets low-income people in Kenya.

A good example is a project that is a partnership between Habitat for Humanity's Terwiligier center for innovative shelter and the Mastercard Foundation. This project helped finance institutions to develop housing microfinance products and services. Habitat Terwilliger center worked with Kenya Women Microfinance Bank (KWFT) to develop the housing microfinance product Nyumba Smart Loan. A report, which surveyed 1,250 women who benefited from the initiative by accessing loans, individuals who due to their low earning as little as US\$50 dollars were excluded from banking and financial services, have experienced an overall housing satisfaction of 15% increase. They accessed Nyumba smart Loan and have been able to invest in water and sanitation including improvements such as flushing toilets and installation of safe water sources.



**Figure 7.3**: A happy woman, a beneficiary of housing micro-financing loans **Source**: Housing microfinance Africa

Habitat, an office of the UN has offered assistance by meeting the need for housing through providing housing to orphans and vulnerable group housing, community infrastructure, advocacy and livelihood empowerment.



**Figure 7.4:** Housing Project in Laikipia **Source:** NTV Kenya

Habitat Kenya mobilizes global and local volunteers and community/corporate partners to help build affordable, low-cost houses and promote home ownership for the vulnerable groups minimizing poverty. Habitat Kenya provided solutions that benefit and impact whole communities such as water and sanitation and energy solutions, construction of schools and other community infrastructure.



**Figure 7.5:** Houses constructed through UN Habitat Programme **Source**: UN Habitat

Through Habitat's advocacy program, women and other vulnerable groups have been empowered to secure land tenure through formal and informal mechanisms of land ownership. It also assists government policy makers to promote policies, law and systems that advance access to adequate and affordable improved housing conditions and living standards. Habitat also provides training to women, youth and other communities on financial literacy, production and marketing alternative building blocks

such as interlocking stabilized soil blocks and training of construction artisans on appropriate building technology and quality standards.

#### **8.0 New Trends in Construction Materials**

Sustainable development is a key issue in our world. New and increased developments should not be at the expense of the environment. Therefore, to achieve this goal, new and appropriate technologies have been invented to assist in this. The newly emerged construction materials<sup>3</sup> with lower environmental impact are Compressed Earth Blocks (CEBs), Interlocking Soil Stabilized Bricks (ISSBs) and Compressed Agrofiber Panels (CAF). Other technologies were found to be 3D Printing, Expanded Polystyrene Panels (EPS), CAF and Prefebricated steel frame (SF) Structures



**Figure 7.6:** Construction of houses using soil stabilized blocks in rural areas **Source**: Engineering for Change

https://www.engineeringforchange.org/research/affordable-housing-kenya-performance-based-analysis-available-technologies-kenya-abroad/

<sup>&</sup>lt;sup>3</sup> UB HABITAT (2019) AFFORDABLE HOUSING IN KENYA: A PERFORMANCE-BASED ANALYSIS OF AVAILABLE TECHNOLOGIES IN KENYA AND ABROAD

### 9.0 The future Plan of Rural Housing in Kenya: Policies and Plans

The National Spatial Plan (NSP) is a national spatial vision that guides the long-term spatial development of the country of thirty years (30) from 2015-2045. It is a flagship project identified under Kenya Vision 2030. One of the specific objectives of the National Housing Plan is to create livable and functional human Settlements in both urban and rural areas

The Big Four Agenda; **Affordable Housing Plan**, seeks to provide two housing types namely: "affordable housing" and "social housing". Social housing also refers to housing in informal settlement. The government plans to develop one (1) million housing units in the next five years. Out of these 800,000 units are categorised as low affordable housing while 200,000 as social housing. In reality, discussions with government officials indicates that the housing actual target is 500,000. That would mean that Social Housing target is about 100,000 units in the next five years.

# 9.1 Loopholes in the Housing Policies, Strategies and Plans of the Affordable Housing Plan

The national government and county governments lack a precise housing policy to drive these initiatives. Having these policies will enable the two levels of government to focus on their constitutional roles in regard to housing. National government's role is to provide overall frameworks for housing delivery. The counties have the role of delivering the actual housing units while conspicuously lacking proper implementation policies and strategies, except a few such as Nairobi, Mombasa and Kisumu which developed county policies supported by the national government and development partners.

## **9.2.** Emergence of Informal Settlements in Rural Areas

Improved housing will lead to the development of rural areas and therefore spiralling urbanisation. Many rural shopping centres will upgrade to towns. The increased economic activities will lead to improved living standards of individuals and increased population. Urbanisation has a possibility of having a two-sided effect. In as much as there will be improved housing conditions for majority, it holds a possibility of causing the rise of slums or informal settlements in these rural shopping centers.



**Figure 9.2**: Informal Settlements in Kenya **Source**: Route to Food

Throughout history, urbanisation of areas has been seen to led to rise of slums. This is because the urbanisation of an area attracts people from their rural counterparts seeking for better opportunities to increase their lives. This poses a challenge to the national and county government to ensure creation and implementation of policies, strategies and plans that foresee the rise of informal settlements as a flip side effect of affordable housing provision and curb the possibility thereof



### CALL FOR PAPERS TO THE NEXT EDITIONS OF JEAE

# **JEAE**

Journal of Engineering in Agriculture and the Environment

The Journal of Engineering in Agriculture and the Environment (JEAE) is a Publication of the Kenya Society of Environmental, Biological and Agricultural Engineers (KeSEBAE) through which researchers in the fields of Environment, Agriculture and related fields share research information and findings with their peers from around the globe.

The JEAE Editorial Board wishes to invite interested researchers with complete work in any relevant topic, to submit their papers for publication in the next editions of the Journal.

Manuscripts may be submitted online or via email to:

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Priority in the selection of articles for publication is that the articles:

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- c. Have not been previously published elsewhere, or, if previously published are supported by a copyright permission
- d. Deals with theoretical, practical and adoptable innovations applicable to engineering and technology in agriculture, the environment and biological systems
- e. Have a 150 to 250 words abstract, preceding the main body of the article

- f. The abstract should be followed by the list of 4 to 8 "Key Words"
- g. Manuscript should be single-spaced, under 4,000 words (approximately equivalent to 5-6 pages of A4-size paper)
- h. Should be submitted in both MS word (2010 or later versions) and pdf formats (i.e., authors submit the abstract and key words in MS Word and pdf after which author uploads the entire manuscript in MS word and pdf)
- i. Are supported by authentic sources, references or bibliography

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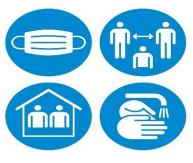
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Kenya Society of Environmental, Biological and Agricultural Engineers

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Theme: Engineering for Transformation

### **Sub-themes**

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Members	8,000	3,000	
Non-Members	10,000	4,000	
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Abstract Submission: Monday, 11 October 2021

Paper Submission: Wednesday, 10 November 2021 **Key Dates** 

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The KeSEBAE NEWS is a Newsletter of the Kenya Society of Environmental, Biological and Agricultural Engineers

Contact: Ezekiel Oranga

The Kenya Society of Environmental, Biological and Agricultural Engineers

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