

# Design of Low- Cost Houses For Civil Servants in Tanzania



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## **Introduction**

Accommodation for civil servants in Tanzania has become a real need in the country. For several years now no critical solution has been reached to enable a large number of civil servants to solve accommodation problems in finding a way of either renting or owning houses. In Tanzania, generally 79.8% of the urban citizens do not own houses. For many years, the civil servants have been victims of life because of unaffordability to rent, buy or build their own houses in the market rates. In practise a civil servant will built a house when receive a retirement portion. The basic salary of a civil Servant in Tanzania ranges from Tshs. 195,000/= (US \$ 150.00) to Tshs. 1,040,000/= (US \$ 800.00) per month. Due to the low wages, financial institutions like banks, providence funds, and insurances do not offer any type of loan or mortgage to civil servants. There are few savings banks that offer small loans; (CRDB, Akiba Commercial, TPB, Standard Chattered etc), however, the amount offered by the bank (ranges between Tshs. 5,000,000/= to 10,000,000/= (US \$ 3,850.00- 7,690.00)) is not enough to enable one to purchase a house from a private investors. As a result, most of the civil servants feel discouragement from borrowing.

Tanzania Buildings Agency (TBA) is an executive agency under the Ministry of Infrastructure and Development. The main function of the agency is to provide safe office buildings and accommodations to civil servants, to sell houses to civil servants, to provide consultancy services to the government housing projects. TBA low cost house proposal is aimed at permanently solving accommodation problems encountered by civil servants by ensuring that the agency is selling houses in a loan bases to civil servants

(amortisation); and utilising and cooperating with other regulatory bodies to formulate accommodation scheme to all citizens.

This report, which is part of the “Shelter Design and Development” course, is highlighting initial stages of the TBA’s low cost housing project proposals, problems that may be encountered during execution, remedies and recommendations to the government. The experience which will be attained during “Shelter Design and Development” course at HDM Lund and Manila, will be taken as a step forward toward the implementation of low cost housing projects for civil servants in Tanzania.

## **Design of Low- Cost Houses for Civil Servants in Tanzania**

### **Medium Rise and Incremental Houses Solution**

#### **1. Shelter Situation Analysis**

##### **1.1 Basic General Data**

###### **1.1.1 Location and Size**

Tanzania is located in Eastern Africa between longitude of 29<sup>0</sup> and 41<sup>0</sup> East. Latitude 1<sup>0</sup> and 12<sup>0</sup> South. Tanzania has frontier to the following countries; *North*: Kenya and Uganda. *West*: Rwanda, Burundi, and Democratic Republic of Congo. *South*: Zambia, Malawi and Mozambique. *East*: Indian Ocean.

###### **1.1.2 Geography and Administration**

Tanzania is the biggest of the East Africa countries (i.e. Kenya, Uganda). Have a spectacular landscape of mainly three physiographic regions namely the Island; the inland; and the highlands. The rift valley runs to South of Tanzania splitting at lake Nyasa; one branch runs down beyond lake Nyasa to Mozambique; and the other branch to North-west alongside Burundi, Rwanda and the Western part of Uganda. The valley is dotted with unique lakes which included lakes Rukwa, Tanganyika, Nyasa, Kitangiri, Eyasi and Manyara. The Usambara, Pare, Meru, Kilimanjaro, the Ngorongoro crater, and the Oldonyo Lengai, all form the Northern highlands. The country’s political capital is Dodoma and country’s commercial capital is Dar es Salaam.

### 1.1.3 Climate

Tanzania has a tropical type of Climate. In the highlands, temperatures range between 10<sup>0</sup>c and 20<sup>0</sup>c during cold and hot seasons respectively. The rest of the country has temperatures never falling lower than 20<sup>0</sup>c. The hottest period spreads between November and February (25<sup>0</sup>c - 31<sup>0</sup>c) while the coldest period occurs between May and August (15<sup>0</sup>c - 20<sup>0</sup>c).

Two rainfall regimes exist over Tanzania (December – April) and (March - May).

### 1.1.4 Land Coverage

<i>Area:</i>	Mainland;	881,000 sq km
	Zanzibar;	2,000 sq km
	Water;	62,000 sq km
	Forest and woodlands	3,000 sq km
<i>Total area:</i>		945,000 sq km

### 1.1.5 Political system

Multi party democracy

### 1.1.6 Administration

26 administrative regions (21 Mainland and 5 Zanzibar)

130 administrative districts (120 Mainland and 10 Zanzibar)

The national language is Kiswahili

### 1.1.7 Population

Estimated at 35 million people (2005);

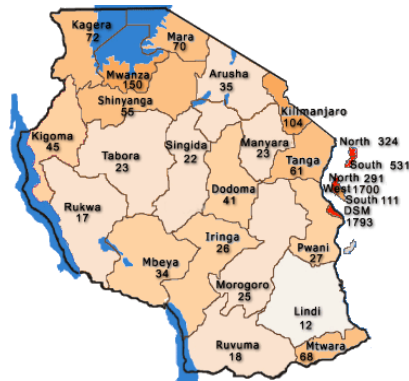
49% are men,

51% are women,

46% are under age of 15 years.



Africa



Tanzania

### 1.1.8 Natural resources

*Minerals*- gold, diamonds, tanzanite and various other gemstones, natural gas, iron ore, coal, spring water, phosphates, soda ash and salt.

*Wild life and tourism*- 12 National Parks, 13 game reserves, 38 game controlled areas, 120 National heritage sites.

*Fisheries*- three large lakes; Victoria, Tanganyika and Nyasa, the Indian ocean. Rivers and wetlands. Potential yield of fish from natural waters is estimated to be 730, 000 metric tons annually, present catch is 350,000 metric tons.

*Forest and Beekeeping*- non reserved forest-land is 1,904 sq km, forest/ woodlands with national parks are 200 sq km and forest reserves are 1,252 sq km.

### 1.1.9 Economy

Tanzania is one of the poorest countries in the world (Word Record Book 2005).

The economy depends heavily on agriculture, which accounts half of the GDP.

GDP per capital, estimated at US\$ 700 per annum (2005)

## 1.2 Shelter Related Facts and Figures

### 1.2.1 Access to Shelters

*Poverty*: About 36% of Tanzanians are living below poverty line. Inflation rate was put at 4.3% per annum (2005 est.) but increasing due to increase in world prices of fuel, persistence drought and declining value of the Tanzanian Shilling. Many Tanzanians are not living in standard houses with all services like electricity, water, access roads etc.

### 1.2.2 Housing Stock and Housing Deficit

The rural and urban Authorities have been unable to cope up with the growth in provision of basic infrastructure and affordable housing. By the year 2002 the housing backlog was 2.3

million housing units in urban areas. To cope with the shortage, individuals have been constructing houses in informal/unplanned areas. In Tanzania with about 35 million inhabitants, 70% of its population lives in unplanned areas. In Dar es Salaam, there are about 54 large informal settlements. Out of about 500,000 housing units, 400,000 units are built in unplanned areas.

### **1.2.3 Occupancy**

According to recently study conducted by Ardhi University (ARU), the occupancy rate is 3 persons per room.

### **1.2.4 Housing Standard in Tanzania**

The current standards and costs are very high. Tanzania still follows the colonial planning regulations and building standards. The requirements are very high in such a way that poor households cannot afford access to housing in such conditions as a result they end building in informal settlements. Privately rented accommodation is most common in the country. The government has now established the land acts on which an individual can be able to survey his plot and apply for the registration to the Commissioner of land and hence, acquire a title deed of the plot to lease for 99 years (land act 2004).

### **2.1.5 Land Ownership (formal and informal)**

Formal land refers to surveyed and serviced plot with official documents (land titles) while informal is spontaneous or unplanned area where people occupy without official papers. Almost 90% of the land in Tanzania is owned by the Government. Individuals can be granted a land lease of a maximum of 99 years which can be renewable. The Government compensates any land which forfeit for its use, the compensation mainly based on the assets and investments on that land, however, the value of empty land in 2004 was Tshs. 217,000/= (US \$ 167.00) per hector (75x75 sq m).

### **1.2.6 Housing Affordability in the Country**

Affordability analysis has been conducted considering the capacity to pay for the cost of building materials and infrastructure i.e. cement, sand, aggregates, corrugated iron sheets, roofing tiles, timber, infrastructures development like access roads, water, electricity, telephone etc. The

amount that a family can allocate from its monthly savings for housing payment would be no more than Tshs. 50,000/= (US \$ 38.00) per month which will take 10 years to build two bedrooms of 25 sq m. this has been compared with a family with a minimum wedge of Tshs 150,000/= (US \$ 115.00) per month at a construction rate of Tshs. 240,000/= (US \$ 185.00) per sq m.

Affordability for a civil servant to pay a house loan taking into consideration their income, liabilities, available funds, willingness to pay loan e.t.c. is very low. For a successful micro-finance project, affordability is a central issue, which is related to land, services, house design, construction and finance conditions of the housing loans. The effort of TBA is to create incremental and medium rise designs solution by constructing a demo houses, however, incremental houses will not be a best solution because it will not cater for the majority of the civil servants, only few are able to build a start up house and recover the loan for a maximum of 10 years.

The organisation does not have correct data of the affordability of civil servants loan recovery because TBA lack of proper system and mechanism to assess income and expenses of civil servant. TBA need to incorporate with the President's Office Public Management Services and the Ministry of Finance in order to come up with the realistic data.

### **1.2.7 Housing Construction and Building Materials**

Tanzanian norms require all construction works to be done by a registered with Contractors Registration Board (CRB) construction company (building/ civil) Only 30% of the private construction works are using registered contractors because of the high construction prices. Individual households are engaging engineers or technicians to construct their individual houses. The contractor will charge between 40% - 60% higher than the cost of the building in order to pay taxes, profit and overhead of the company/ firm.

Building materials widely used in the construction industry in urban areas is cement, sand, aggregates, stone, steel, glass, iron sheets, roof tiles, floor tiles, plastic sheets etc. in rural areas mud, thatch, timber logs are widely used. The industrial building materials are very expensive for low income people to afford. The construction industries are facing critical problem of water, building materials and building techniques to assist the low house projects.

### **1.3 Actors in Shelter Development**

The following are main actors in shelter development in Tanzania;

- 1.3.1** National Housing Corporation (NHC)  
State organization under the Ministry of Land and Human Settlement Development that finance and construct houses for rental for all citizens, recent years NHC have stated to sell apartment to individual ownership.
- 1.3.2** Real Estate Developers (private)  
Private registered real estate developers who are constructing houses for both rental and sell to all citizens.
- 1.3.3** Central Government (TBA)  
State agency under the Ministry of Infrastructure Development that finance and construct houses for rental for civil servants, recently years TBA stated to sell house in a loan bases to its tenants civil servants.
- 1.3.4** Financial institution- (Public Service Pensions Fund- PSPF, National Social Security Fund- NSSF, Public Pensions Fund-PPF, Local Authority Pensions Fund- LAPF etc)  
Public financial institutions under the Ministry of Finance that are now financing houses for both rental and sell to all citizens
- 1.3.5** Local Government Municipals  
State authorities that in past years they financed and constructed houses for rental for civil servants in category “C” (medium income), they are now no longer actor of housing development in the country.
- 1.3.6** Individual  
Individual citizens who have managed to secure the land and constructed their own residential houses.

Table No. 1 below shows the contribution in percentage of actors in shelter development in the country.

S/N	ACTORS	CONTRIBUTION
1.	Un-surveyed dwellings	70.0%
2.	Individual surveyed Dwellings	13.5%
3.	National Housing Corporation	5.1%
4.	Real Estate Developers	3.9%
5.	Central Government	3.0%

6.	Financial Institutions	2.4%
7.	Local Government	2.1%

## **1.4 Shelter Design**

**1.4.1** In 1990s Urban Management approach changed from Master plan which was rigid to Strategic Development Plan. Nowadays the land is properly laid out based on clear zoning system like residential, public services (like schools, religious, health care centre, market, open space and circulation). The road connections form the link with the surrounding environment. Plots are categorized into high density 400- 600 sq.m, plot coverage 40%; medium density 601- 1200 sq.m, plot coverage 25% and low density 1201- 1500sq.m, plot coverage 15%.

## **2 Organisation**

2.1 Tanzania Buildings Agency (TBA) is an executive agency under the Ministry of Infrastructure Development established under the Government Agencies Act 1997.

The main function of the TBA is as follows;

- 2.1.1 To provide safe buildings to civil servants
- 2.1.2 To sell buildings to civil servants
- 2.1.3 To provide consultancy services to the government housing projects
- 2.1.4 To cooperate with the parent Ministry in the formulation of Government Building standards
- 2.1.5 To cooperate with other Regulatory Authorities/ Bodies to ensure that they are existing a conducive environment for the practice of Architecture, Quantity Surveying and Engineering in the country
- 2.1.6 To cooperate with the Ministry of Natural Resources and Tourism to identify and establish conservation programme/conservation criteria to the government buildings
- 2.1.7 To undertake environmental impact assessment for the government buildings projects



- 2.1.8 To monitor consultancy services provided by private firms/ professional firms to the government projects

**2.2 TBA is led by the Chief Executive and has three Directorate as follows;**

- 2.2.1 Directorate of Real Estate – led by the Director
- 2.2.2 Directorate of Consultancy – led by the Director
- 2.2.3 Directorate of Business support – led by the Director
- 2.2.4 Regional representatives – led by Regional Managers (21)

**2.3 To achieve its function TBA has set the following goals;**

- 2.3.1 To achieve a reputable accommodation to civil servants by the year 2020.
- 2.3.2 To achieve a reputable consultancy services firm to government buildings project by the year 2010.
- 2.3.3 To ensure that all government buildings are functional and properly utilized

**2.4 Performance and Achievements**

- 2.4.1 TBA has been able to design, supervise and construct residential houses through open tender procedure more than 900 various residential houses in the country from the year 2003 – 2007. Its target is to build 100 houses yearly by using fund obtained from the houses, which have been previously sold to the civil servant in loan bases (6,000 units). TBA is in the preparation and is communicating with the Parent Ministry in the formulation of Government Building Standards, and is cooperating with the Building Unit to formulate the Government Buildings Policy.

**3 Shelter Problem**

- 3.1 Tanzania is considered to have approximated 800,000 permanent employed civil servants. During last past 5 years, the Government was not involved in the development of housing projects. Most of the government houses were either colonial quarters or houses built by donors for special projects and later on transferred to the Government custodian (TBA). Accommodation problem for Civil servants in Tanzania has become a crucial demand in the country. For several years, no critical solution has been reached to enable civil servants to solve

accommodation problem. Beyond 2002, the Government of Tanzania used to have only 6,000 residential houses to accommodate more than 800,000 civil servants entitled to be facilitated with accommodations. It has been noted that the ratio of the houses to the number of civil servants was approximate 0.01 to which is extreme low. Experience revealed that less than 10% of the Civil servants managed to build their own houses during their employment, 20% of the civil servants build their houses during their retirement by using their pension funds instead of investing to other business, and 70% of the civil servants becomes victims of household because of unaffordability they cannot manage to rent a house in the market rates.

3.2 The proposed TBA low cost house project is aimed in solving the accommodation problems to civil servants by ensuring that government build houses with low construction cost however, the houses are function and properly utilized; the government sell buildings in a loan bases annually; the government utilises and cooperate with other regulatory bodies in formulating house policy in Tanzanian.

## **4 Proposal for Change and Improvement**

- 4.1 To introduce design solutions by creating a cost effective type of a residential houses this will be affordable for all low income generation in rural and urban areas. The design will consider two (2) aspects; minimum effective area, and alternative low cost materials.
- 4.2 To conduct research for alternative low- cost construction materials such as pre-cast construction panels, hydro form blocks, hollow concrete blocks, slabs and beams, light weight concrete tiles, compressed earth block in rural areas.
- 4.3 To strategize to assist to solve the problem of infrastructure development such as water, electricity and access roads in the country.
- 4.4 To propose to the National Banks, National Financial Institutions to introduce and give loans and mortgage to civil servants to purchase houses.

### **4.4.1 The Design**

For the civil servants housing for loan, the report is proposing to the agency to offer two types of houses in which the first one is an incremental house design in which the residents will agree to participate in a later process of expansion of the houses. Initially education is

necessary for them to know what is expected of them during the construction process, how they and their families are supposed to be involved, what support they can receive from the agency during extension, how much this support will cost, how they will pay those loans and other cost such as for materials, equipment and other resources used in the construction process.

On the other hand the agency must be certain that the civil servants are prepared to construct their incremental houses on the basis of self- help in future.

The families must know and understand the design of the project (incremental houses) and what level of finishing the house will be completed when commissioned to them, as well as their efforts in terms of resources to be used and payments after the incremental house commissioned to them.

The architectural design of the building will include the following factors;

1. *Layout*; two layouts will be proposed single storey and double storey buildings of 30- 36 sq m built up area. The single storey design will consider two options either to increase vertical or horizontal. The house will be completed only a half portion which will be habitable and the rest of the house will be expanded by the owner after completing repayment of the house. The load bearing interlocking or hollow block wall will be used externally with hollow blocks internal partitions. The double storey incremental house will consider the layout of the whole building and construct the core house with a flat roof made of hollow concrete slab. This is being done to allow flexibility of the expansion, however, inside circulation spaces will be considered during the design stage. The partitions wall will be developed by the residents expect for the wet areas like toilet, bathroom and kitchen. The design of the house will include three bedrooms houses with front and rear verandas, combined dining room and lounge, kitchen, toilet and

bathroom, a total of 88.5 sq m on completion. The core house will cover only 33 sq m and 52.5 sq m will be built by the owner.

2. *The Construction;* The construction stage will focus all activities of the construction integrating the building components and TBA staff defining training need. This includes quality control, monitoring plans, work progress and schedules from TBA experts. The choice of building materials is one of the most obvious factors affecting the cost of the house. All building materials will be full specified during the design stage, the use of hollow and interlocking concrete components like blocks, beams, columns and slabs. The agency will procure a contractor to build the core house of 30- 33 sq m, this layout will include a lounge 12 sq m kitchen 9 sq m toilet combined with bathroom 6 sqm. and start up 6 sq m bedroom which will be a space for a stair case for vertical extension. The roof will be composed of light mounted or assembled steel structure such that during the extension stage they can be easily removed and re-used.

#### **4.4.2 The Building Materials Research**

The agency has a Building Research Unit. The unit will make a research of alternative building materials which have been proposed to be used in this project.

#### **4.4.3 Infrastructure Development**

The agency will make a proposal to the central government to put in the budget of the development of infrastructures. The Ministry of Land and Human Settlement Development to be responsible for the provision of surveyed land, the Ministry of Infrastructure Development to be responsible for infrastructure services like road and communication installation, the Ministry of Water and Irrigation to be responsible for water services, the Ministry of Mineral and Energy to be responsible for electrical services.

#### **4.4.4 The Finance**

The construction of core houses will be financed by the agency (TBA).

The cost of the core house inclusive of land is expected to range from Tshs. 13,000,000/= - 15,000,000/= (US \$ 10,000.00- 11,600.00). The agency proposed to convince the National Banks, the National Financial Institutions, and donors to give loan to civil servants. The methodology that the agency is going to use will be to enable a civil servant to pay at least 30% of the core house construction cost including infrastructures at the beginning. After the initial payment of 30% of the construction cost, the residents will be required to pay monthly amount to be calculated such that the full payment to be achieved in a duration of 10 years. The families will be anticipated to use their resources “efficiency and competitive” in terms of cost and finance management after the project implemented.

On the other hand, recently the Managing Director of the Southern African Commercial Bank “ABSA” had an official discussion with the TBA officials and they showed interest in funding TBA housing projects. On this concurrence the low cost housing project will be proposed to be one of the projects to be implemented.

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