

# Financing for low-income housing: Appropriate approach in Tanzania

N.D. MAKOBA\*

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## ABSTRACT

Today's tenants expect to be tomorrow's home owners. However low-income earners have found housing ownership to be a problem. One of the problems hindering home ownership, whether own built or purchased is finance. It is the aim of this paper to determine the appropriate approach of housing finance for low-income housing. Simulation models have been used to determine the appropriate approach of financing low-income housing considering different financing options available.

Three approaches have been considered, which are: own financing, loan financing and rent as a subsidy to finance housing. A combination of the approaches have been used in the simulation to find a suitable method. A suitable method have been measured by period required to complete a house. A combination of financing options of Save and Build" "Save, Borrow and Build", "Save, Build, Rent and Build" and "Save, Borrow, Build, Rent and Build" have been considered. It has been concluded that a combination of own financing, loan financing and rent as a subsidy is a more efficient approach. Rent as a subsidy have been shown to has a bigger impact on completion period of a housing unit.

**Key Words:** Housing finance, Affordability, incremental housing

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## INTRODUCTION

Research on tenants shows that 'today's tenants expect to be tomorrow's owners' believing rental to be a temporary housing solution exhibiting an almost universal desire for ownership (Datta, 1995). Almost 90 percent of housing tenants in Tanzania prefer owning a house rather than remaining tenants (Kabwogi, 1997). The main driving force for many dwellers to struggle for home ownership in Tanzania is difficulties and uncertainties in paying rents, unwarranted landlords intervention against quiet enjoyment of the demised lettings, low cost of building in informal areas around towns and the everlasting problem of overcrowding as landlords further construct additional rooms to existing house.

"The main challenge to housing the urban poor is housing finance. Public funds are meager

and private funds are not accessible to the poor due to lack of collateral security and inability to service the loans" (Gumbo, 2010; Adebamowo, et. al., 2012). Finance is an important factor in housing provision, as it dictates the availability of other resources such as land, building materials etc. Currently there are a number of financial institutions offering housing finance in Tanzania, however the lending conditions do not support low-income earners.

Without housing loan finance, people build using their income, which makes construction take too long especially for low-income households, and/or housing occupied before being complete to an acceptable condition hygienically.

It is the aim of this paper to search for an appropriate housing finance for low-income households in Tanzania. This has been done by modelling housing finance and simulating the models to show the appropriateness of the housing financing models. The appropriateness of financing options in this study are to be measured by the time taken to

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\*Dr. N.D. Makoba is a Lecturer, Department of Building Economics, Ardhi University, Dar es Salaam, Tanzania. His contact address is P.O. Box 35176, E-mail: makoba@aru.ac.tz.

complete a building. The simulation is based on different approaches used in Tanzania by low-income households. Incremental housing has been seen to be appropriate as means of construction process for low-income earners (Makoba, 2008), and thus has been used in the model.

### **Low income housing financing**

House builders in developing countries have numerous sources they use to get finance for housing. These include loans from employers, advance use of pension funds, participation in rotating credit schemes and borrowing from friends. The Household Budget Survey for 1977-78 indicated that only about 1-2% of household who spent money on house construction utilised loans from THB and other loan sources (Mghweno, 1994). It is worth noting that the private sector supplies almost 98 percent of all new houses in a year and there is an emerging class of private developers who provide residential and commercial units for sale or rental (PADCO, 1998). This makes housing finance an essential input in housing provision in Tanzania. The fact that formal housing finance institutions in Africa finances less than 20 percent of the value of urban housing, (Okonkwo, 2002) it remains an obstacle to provision of housing in urban centres.

Housing in South Africa got a dramatic change in 1994 after the release of the white Paper on Housing. The key source of housing finance in South Africa remains government funding through housing subsidy programme, though it was expected that the private sector would participate in partnership with the government and communities (Omenya and Talukhaba, 2005)<sup>1</sup>.

In Kenya, housing finance has been left almost totally to the private and semi-private state organisations, a fact that makes housing finance out of reach of the low-income households. The exchequer allocation of funds

for housing, including rural housing loans, has collapsed (Republic of Kenya, 2003). The housing policy of Kenya envisages a Slum and Low-Cost Housing Infrastructure Development Fund, but it is not clear whether this fund will be capitalised. (Omenya and Talukhaba, 2005).

The major players in this formal housing finance in Kenya include the Housing Finance Company of Kenya (HFCK), East African Building Society (EABS), Savings and Loans (S&L) and National Housing Corporation (NHC). The first two give long-term mortgage, Savings and Loans gives commercial loans, while the NHC is used to channel government funds in housing (Syagga et al, 2001).

Mortgage financing has been seen to be the most viable means of accessing housing, but a recent study says that the percentage of household operating savings and or current account in Tanzania fell from 43 percent in 1991 to 19 percent in 2001. As this is a requirement to access mortgage financing, a possibility to use it for housing will benefit very few.

### **Methods of housing finance**

#### ***Own Financing***

The simplest method of housing finance is through “own financing”. This is where a house is constructed with no external assistance, but may be some assistance from friends and relatives. The finance obtained in this manner is usually small to let a house be completed and therefore other sources such as sale of valuables like furniture, animals etc. are used. It is only the high income households who can easily construct housing through own financing within appropriate period, otherwise it takes too long to have a house.

#### ***Loan Financing***

Mortgage lending is associated with a standard package of terms and conditions which specify the contribution of deposits, on some occasion the period of savings, the interest rate to be charged on the loan, the period of the loan and

<sup>1</sup> The Financial Services Charter is being discussed between the banks and the government to work out modalities of availing funds to the low-income after failure by the banks to lend in this sector from 1994 despite the state's efforts to make them do so.

a loan to value ratios. Another important factor is the amount the loan institution is willing to lend in relation to borrowers' income. High interest rates considerably increase the cost of borrowing and make housing investment unaffordable for many families.

Omenya and Talukhaba (2005) sees that relying on private finance to provide housing for the poor is likely to fail in Kenya. Mortgage and micro-finance in South Africa and Kenya are both inadequate and inappropriate for low-income households (*ibid.*). In the South the percentage of those who cannot afford mortgage loans is significantly higher in many countries, it is estimated that these numbers may be over 70 percent. (UNHCS, 2005). The problem with conventional financial arrangements is that they are too logistic, standardized, rigid and outdated.

A year 2003 report by Tanzania Bankers Associations (TBA) indicated that as of March 2003, access to credit amounted to approximately 36 percent of total deposits while pool of loanable funds was TAS 740 billion (\$ 738 million)<sup>2</sup>. This confirms that lending by banks in Tanzania is not good because lenders are reluctant to provide loans fearing defaults and also fear of borrowing by potential borrowers. Banks have collapsed because borrowers did not honour repayments; therefore bankers are not willing to lend fearing defaults. In South Africa, despite of a number of supportive measures taken by the government since 1994, commercial banks still find it difficult to extend lending to the low-income households (Pillay and Naude, 2006).

Although loan financing have problems, it can still be used to support housing finance for the low income.

### ***Rent as a Subsidy***

A research in Botswana (Datta and Jones, 2001) showed that the time lag between acquisition of a plot, construct incrementally and the letting of a first room was 7 years;

suggesting that renting was not an option in incremental construction until the initial core house was consolidated, however subsequent rooms were added in much shorter period of time. This shows that owners do occupy the core house first and consolidation takes some time, but the rate of consolidation becoming faster as rental income starts coming in.

Depending on the quality of the rooms, rooms may be booked while still under construction (Kombe and Kreibich, 2000; Sheuya, 2004). This is true as renting has been a major source of housing in Africa and Asia, and to some extent in Latin America. While more than a half of the urban populations are tenants in Africa and Asia, it is around one third of urbanites in Latin America renting houses (Gilbert et al 1997). Renting is used as a subsidy in the completion of houses paid. Rents in Tanzania are usually paid in minimum of three months instalment and this goes up to two years; this gives the house owner means to finish up the house.

### ***Incremental Construction and housing financing***

Incremental construction supports tenancy and especially single room tenancy. In a study conducted in 1998 indicated that tenant households constituted 70% of the total households, while 29% were house owners. About 70% of the tenant households were renting only one room, 22 percent had two rooms and 4 percent had three rooms. Only 4 percent rented four rooms (Nguluma, 2003).

In fact houses are never "finished" especially among the poor who extend and improve their houses as funds become available (Mostrales and Tusalem, 2002; Tipple, 2000). This is because their incomes do not allow purchasing the least expensive commercially built new houses (Fergusson 2004). They usually accumulate building materials to suffice whatever part of construction is to be started, goes on until the building is completed. Smets (1999) argues that middle and other upper classes are inclined to construct complete housing units in one go, while the urban poor tend to build their houses step by step.

<sup>2</sup> The East African, July 26 – August 1, 2004

Housing for low-income earners should be considered to be a process and not a product (Verschure, 1991). In fact housing goes through three main stages, initial construction, improvement and consolidation (Wiesenfield, 1997). In totality, this is incremental construction. Ward, (Quoted by Byarugaba 2003) reasons that the benefits of incremental housing are:

- The instability of family incomes. The family takes the advantage of transitory “peaks” of financial prosperity to consolidate and enlarge their housing units
- Savings achieved for the country in the production of necessary housing incorporating under-utilised manpower, cheap materials and lower administrative costs.
- Progressive house development acts as a positive factor in uniting community for the process of social organisation.

With incremental construction, the key principle must be to provide “housing finance” incrementally and in ways that support urban livelihoods and asset formation rather than increase vulnerability through debt, and which build social capital rather than individualism and mistrust (Datta and Jones, 2001; PADCO, 1998).

Observations of lending patterns in South Africa records that the housing loan beneficiaries preferred small loans that they could periodically take out and quickly pay off rather than one large loan, mainly because they are better able to control their financial situation when exposed to economic shocks like retrenchment (Tomlinson, 2003). Incremental construction has been used in the simulations as it is the mostly used construction process for poor households in developing countries.

Each financing option has been considered in the study. A combination of the different options have also been considered in determining the best option(s).

### **Saving ratios for housing**

It is usually being assumed that 20 to 30 percent of income can be used for housing (Smets, 1999), but these figures may not be realistic across. These ratios are increasingly being criticized, because of the inaccuracy in defining the actual income of a household and predicting the willingness of the beneficiaries to allocate a specific part of the budget for housing (*ibid.*). The standard 25 or 30 percent is very high burden for large low-income households, because it leaves them very little for other necessities (Thalman, 2003). While in Iran or Turkey, a household can devote more than 50 percent of their income to housing, due to climatic conditions (Tym, 1984), it has been noted that households can save up to 30 percent in Kenya (Rust, 2004). Such figures need careful evaluation in the light of prevailing social, cultural, and economic circumstances.

*“The poor opt for an incremental construction process with only short or medium-term obligation. In other words the poor opt for a link between incremental building and incremental financing, but with reference to term of the loan and not the size of instalments”.* (Smets, 1999). *“Repeated short term loans enable the borrower to adjust periodically the outstanding debt to available household income, so that the debt/income ratio is not excessive”.* (Merret and Russel, 1994)

### **Methodology**

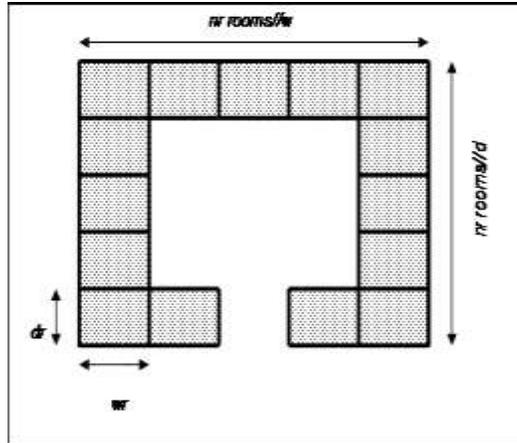
Simulation models have been used in this article to determine an appropriate financing mechanism. What is modelling? This is a symbolic representation of some observable system which exists or is proposed, and which in terms of its significant cost, features for the purpose of display, analysis, comparison and control (Ashworth, 1999). Models provide the scaled down version of things. They have been used to demonstrate the characteristics of real things (Curwin et al, 1996). Simulation is the manipulation of a model in such a way that it operates on time and/or space to compress it, thus enabling one to perceive the interactions that would otherwise not be apparent because of their separation in time or space. This compression also provides a perspective on

what happens within the system, which, because of the complexity of the system, would probably otherwise not be evident.

Simulation models attempt to imitate reality in a number of times under varying conditions and let the consequences studied. Simulation is very quick and effectively addresses “*what if*” type of questions (Curwin et al 1996).

**Description of the Model**

A house mostly used by low-income households, a house that allows growing and house that allows part renting has been used for simulation. An abstract design has been used as shown in Figure 1.



**Figure 1: The simulation typology of an incremental house**

A flexible model with a number of input parameters like income, amount that can be saved, borrowing rates, saving rates rent,

and construction costs have been used. The input parameters also include phasing option and their costs, size of the building for simulation.

The interim results also include monthly saving from income and rent from completed rooms and the cost of next expansion. The final output of the model is the periods for which each phase (if phased) is to be completed in relation to input parameters.

**Simulation**

The simulation typology has fifteen rooms; phased construction of two rooms for six phases at a time, with the last phase having only one room. To see the effect of number of rooms in each phase, phase of one room at a time has also been considered. The total cost of the simulation building at self-help rates

(2014) is TAS 36,750,000.00 based on the trend in housing for low income earners who

construct by self-help complimented by hiring a *fundi* where it is inevitable. With incremental construction, considering the increments of two rooms per phase, and the following phase joining the built up rooms, the costs for the phases will be 5,348,322 for phase one, TAS 4,831,027 for phases two to seven and TAS 2,415,514 for the last phase.

The financing options for housing that has been considered in this analysis include “Save and Build”; “Save, Borrow and Build”; “Save, Build, Rent and Build” and “Save, Borrow, Build, Rent and Build” models. Input data varies, but for comparison purpose, fixed input parameters have been used in all financing options and household that can save TAS 175,000 per month has been considered which in the model has been considered (25% of the total income). Other assumptions are: borrowing interest at 15%, saving interest at 5%, growth of income is 5%, growth of rent is

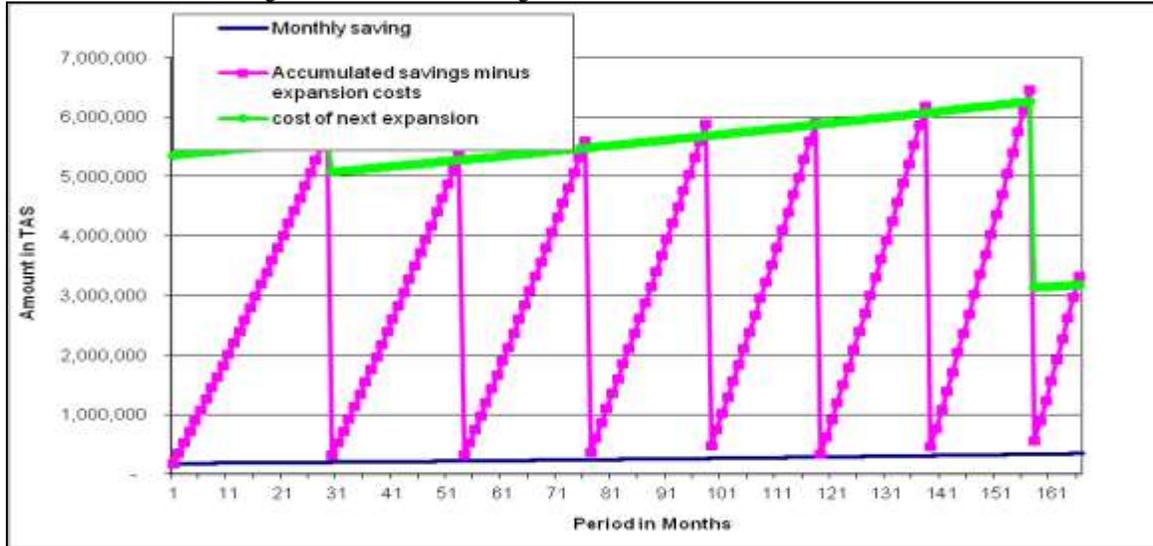
5% and the growth for construction costs is 2%.

income until when the amount suffices to build the next phase. The simulation on Save

and Build option of financing for the incremental construction on the typology used for simulation, gives results as on Figure 2.

### ***Save and Build (SB) Model***

This is the basic financing option which can be used for house building. It is based on saving



**Figure 2: Save and Build Model Results for the Simulation Typology**

This financing option will take 166 months to complete the house.

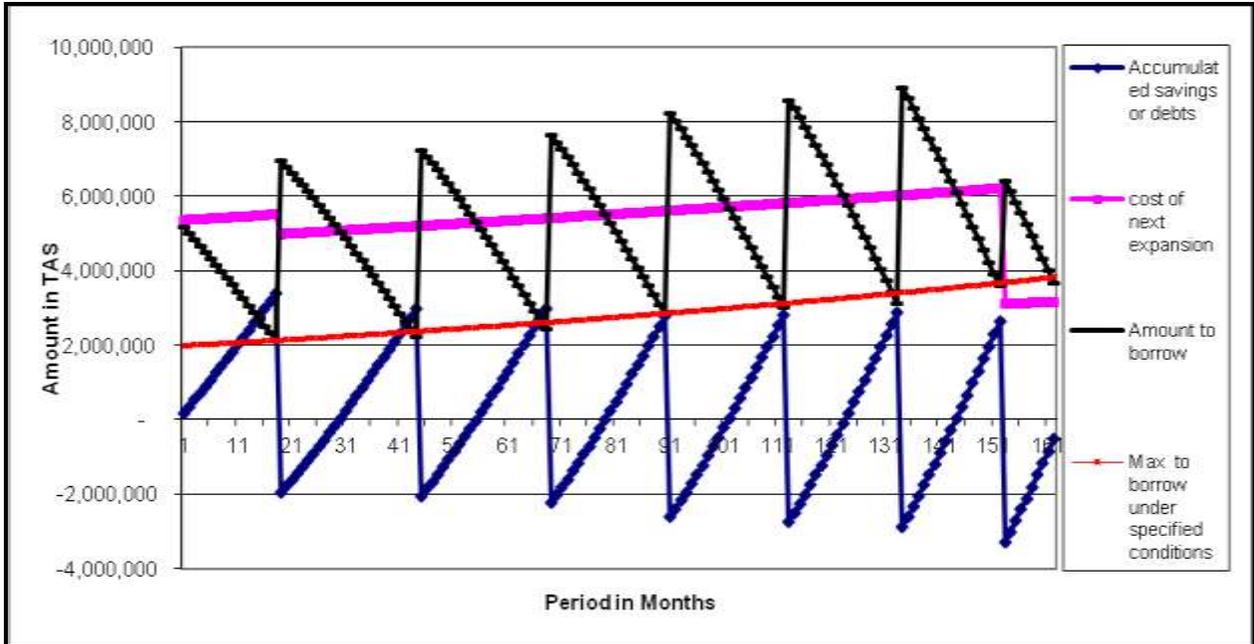
### ***Save, Borrow and Build (SBB) Model***

This financing alternative is similar to the previous one (Save and Build), but borrowing has been included to supplement finance for construction. The loan to be taken depends on two major items. First of

all is the difference between what has been saved and the cost of the next expansion. This is again limited with the amount of loan that can be serviced for a period of 12 months, which is the repayment period considered. The 12 months has been taken in this case based on a fact that low-income earners prefer small loans with short maturity periods. (UNCHS, 1978)

The model calculates the total saving that a household can have at the end of a saving period. This saving is compared to the construction costs to see if it suffices to build the next phase. This difference is then compared to a pre-calculated maximum loan that a household at a pre-determined income can afford if he/she can save some percentage of income for housing. The cost of the house less the saving at any time considered less the maximum loan that can be afforded indicates if the household should now take a loan to supplement his saving for the house construction or not. The loan can be taken when the sum of the saving and maximum loan that can be taken exceeds the total house construction cost.

The simulation of this alternative gives results as shown in Figure 3.



**Figure 3: Save, Borrow and Build Results for the Simulation Typology**

The graph shows a relationship between the debts and savings made to get what is called accumulated savings and debts. These are a result of savings made from the income, and debts that need to repay a loan that has been taken to supplement the savings.

With this mode of financing the construction, the eighth phase will be completed after 162 months. There is a saving of 4 months from the last mode of financing. The change is only 2.4 percent.

***Save, Build, Rent and Build (SBRB) Model***

This financing model eliminates the issue of borrowing, in addition to normal income, the model utilises rental income on completed rooms as a source of income for re-investment.

A rent of TAS 25,000 per room has been considered in this simulation. Rent in some cases go as high as TAS 50,000. The actual rent depends on the location.

The results of the simulation are seen in Figure 4. The completion period for all the eight phases in this case is 120 months. The period has dramatically come down because rent is an assured income and this is deposited in a bank to earn interest before it is being used for construction. The change by introducing rent compared to the drop would have been bigger if the model would take into consideration that rent is paid some months in advance, which is a norm in Tanzania.

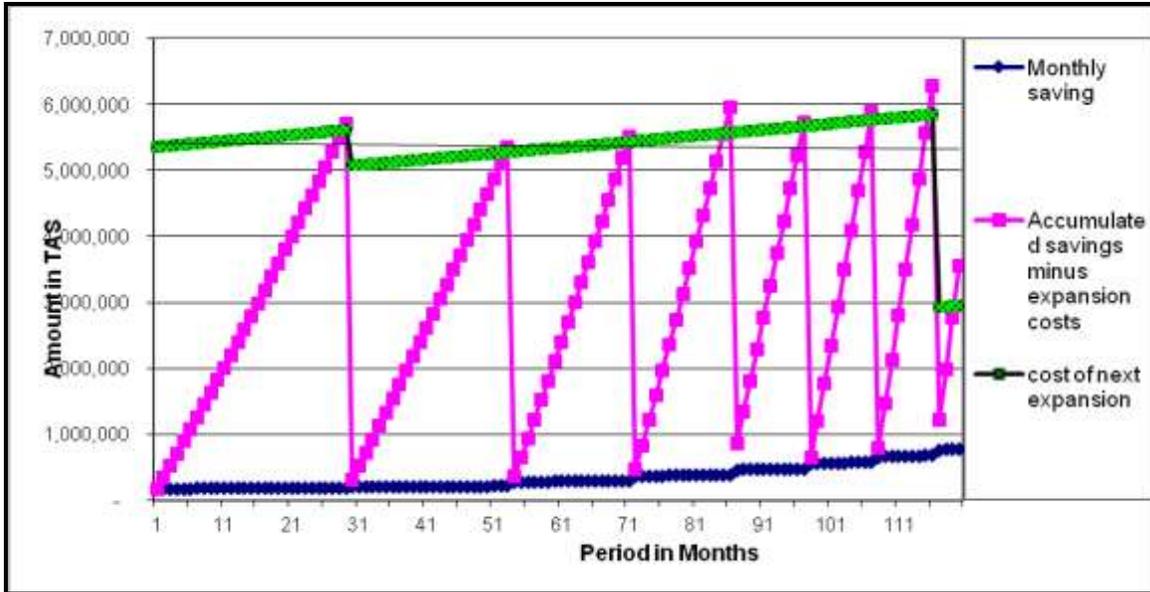


Figure 4: Save, Build, Rent and Build Results for the Simulation Typology

*Save, Borrow, Build, Rent and Build Model (SBBRB)*

After the first phase is built, rent is added to the monthly saving from income and this

continues for the other phases. The results of this simulation are shown in Figure 5.

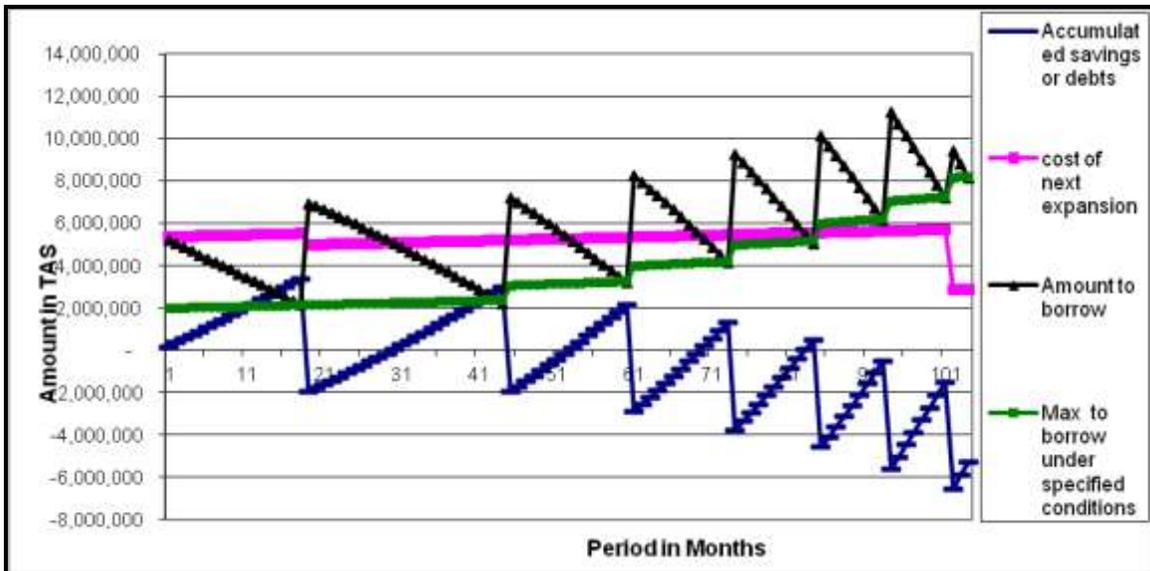


Figure 5: Save, Borrow, Build, Rent and Build Results

This model has combined all financing options and it is expected that it will take the shortest period to complete the simulation house. The period taken is 104 months. The change is

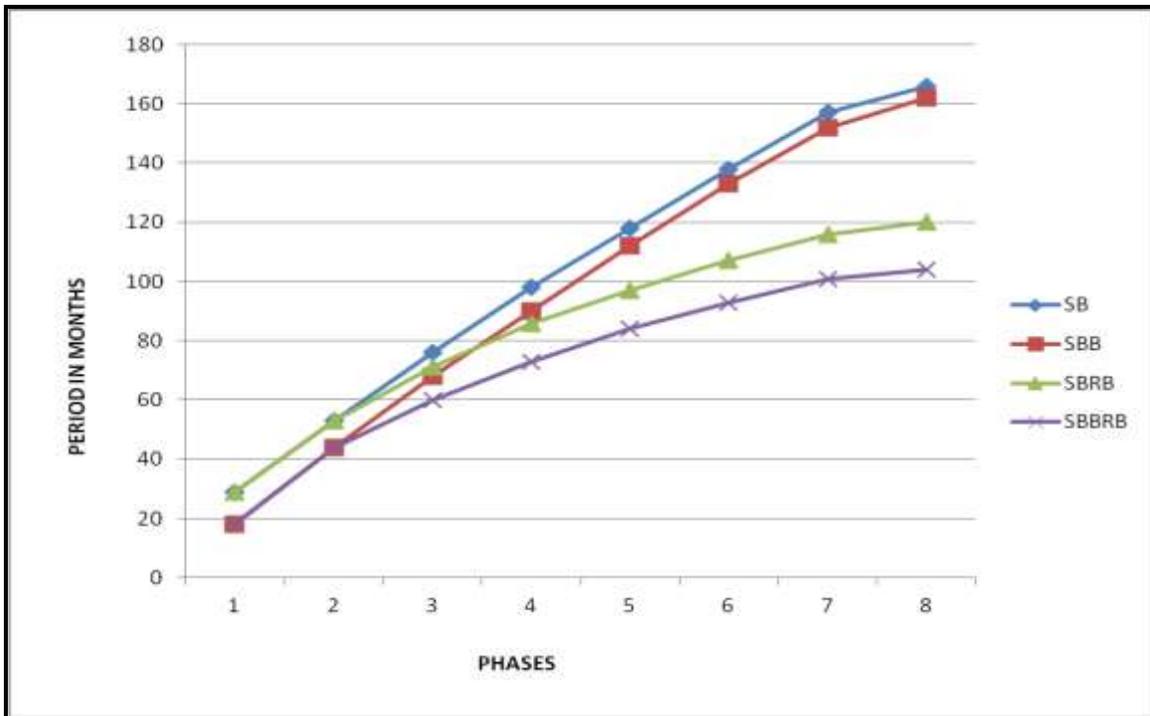
37.3 percent compared to the save and build model.

**Table 1: Comparison of Completion Periods of the Different Models**

S/N	Financing Mode	Completion Period (Months)	Difference with Basic Mode (Months)	Percentage Change from Basic Mode (Months)	Impact of Borrowing (Months)	Impact of Renting (Months)
1	Save and Build (Basic Model) SB	166	0	0		
2	Save, Borrow and Build - SBB	162	4	2.4	2.4	
3	Save, Build, Rent and Build - SBRB	120	46	27.7		25.3
4	Save, Borrow, Build, Rent and Build - SBBRB	104	62	37.3	9.6	

From Table 1 above, the option that takes too long to complete the simulated house is Save and Build and the fastest financing mode is one that combines saving, borrowing and renting. Borrowing, has no big impact to completion periods since the change from SB to SBB is only 2.4 percent and 9.6 percent from SBRB to SBBRB. Why is the impact so

small? This is because interest has to be paid on borrowed money, which reduces the absolute amount available for building. The addition of renting gives a significant change (25.3 percent of the completion period) and this is because rent paid is saved into a bank and gets interest, until when the money is used for building.



**Figure 6: Completion Periods for Phases in Different Financing Models**

Figure 6 shows the completion periods for phases in different financing modes. The SB and SBB have the similar trends and SBRB and SBBRB have the similar trends. But the completion periods are decreased in SBRB and SBBRB. This implies that where renting is considered as a option to finance building a house, the completion period is reduced.

## CONCLUSION

Four models have been looked at starting with simple models that have few input parameters to models that have many input parameters. The first model was "Save and Build" and it has been seen that it takes the longest period to complete a house. The last two models incorporating incremental construction with an added option of renting reduce the completion period tremendously. They also provide accommodation before the building is fully complete. It is not common for financial institutions to lend money to low-income households, and if there are no borrowing possibilities, still the model incorporating incremental housing but with no borrowing saves time.

The ultimate result of incremental construction of a house may be that it is more expensive than the construction of the same unit all at once. This is due to inflation and need to demolish, or prepare existing structure to receive new items. However, with the construction of complete dwelling units, large loans are involved leading to financial obligation over a long period of time. This is exactly what the low-income households try to escape as much as possible. It is therefore good to incorporate incremental construction with saving, borrowing and renting completed parts of a building to finance further construction of housing if borrowing is possible. Otherwise, saving to commence the initial rooms, renting them and using the rent to expand more rooms is a feasible option for house construction for low-income earners. A very important feature in these financing models is to incorporate incremental construction.

## REFERENCES

- Adebamowo, M.L., Oduwaye, L. and Oduwaye, O.S. (2012). "Problems Mitigating Housing Finance Through Primary Mortgage Institutions, In Lagos" *In International Business and Management Vol. 4, Iss. 1, pp 126-134*
- Ashworth, A. (1999). *Cost Studies of Buildings*, Addison Wesley Longman Ltd. New York.
- Byarugaba, A. (2003). "A Study on Incremental or Progressive House Development in Tanzania. Case Study Dar es Salaam", Unpublished BSc Thesis, Department of Building Economics, UCLAS.
- Curwin, J. And Slater, R. (1996). *Quantitative Methods for Business Decisions*, International Thomson Business Press, London.
- Datta, K. And Jones, G.A. (2001). "Housing and finance in developing countries: Invisible issues on research and policy agenda", in: *Habitat international*, (25) 3, pp 333-357.
- Datta, K. (1995). "Strategies for Urban Survival? Women Landlords in Gaborone, Botswana", in: *Habitat International*, (19) 1, pp 1-12.
- Ferguson, B. (2004). "Housing Finance Options for Low and Medium Income Families: Analysis of the Latin America Experience", in: *Housing Finance International*, (18) 3, pp 3-10
- Gilbert, A., Mabin, A., Maccarthy, M. And Watson, V. (1997). "Low income Rental Housing: Are South African Cities Different?" In: *Environmental and Urbanisation*, (9) 1, pp. 133 – 147.
- Gumbo, T. (2010). "Eccentric housing finance sources by the urban poor in Zimbabwe: case of Cowdray Park low income self help housing scheme in Bulawayo", In *Economia: Seria Management Vol. 13, Iss. 1 pp 89-105*
- Kabwogi, C. (1997). *The Implementation and Impact of Rent Control in Tanzania*,

- Unpublished PhD. Thesis, University of Sheffield.
- Kombe, W. J. and Kreibich V. (2000). *Informal Land Management in Tanzania*, Spring Research Series, No 29, Dortmund.
- Makoba, N. D. (2008). *Enabling Affordable Housing for Low-income Households in Tanzania: An Integrated Cost Modelling Approach*. Unpublished PhD Thesis, Katholieke Universtat, Leuven.
- Meret, S. And Russel, K. (1994). "Non-conventional Finance for Self Help Housing", in: *Habitat International*, 1994, 18(2) pp.57-69
- Mghweno, J. (1994). "Tanzania's surveyed plots programme", In Payne, G. K. (Ed.) *Low-income housing in developing World*, John Wiley & Sons Ltd.
- Mostrales, D. And Tusalem, B. (2002). In Kimberley Clarke (ed.) *Basin News, Building Advisory Service and Information Network*, No 24
- Nguluma, H. M. (2003). *Housing Themselves: Transformations and Spatial Qualities in Informal Settlements in Dar es Salaam, Tanzania*. Unpublished PhD Thesis, Royal Institute of Technology, Stockholm.
- Okonkwo, O. (2002). "Financing of Housing for Low and Middle Income Groups in Africa: The Role of Government", Paper presented to an International Conference on Financing Social Housing; Baotou, China.
- Omenya, A. And Talukhaba, A.A. (2005). "Bottlenecks of Access to Housing Finance by the Low-income in Kenya and South Africa", Paper presented to the Construction Industry Development Post-graduate Conference, Johannesburg.
- Padco (1998). "Next Steps towards Finance in Tanzania", Report presented to USAID and National Housing Corporation, Dar es Salaam.
- Pillay, A. and Naude, W. A. (2006). *Financing low-income housing in South Africa: Borrower experience and perception of banks*" in *Habitat International*, (30) 4, pp 872 - 885.
- Republic of Kenya (2003). "National Housing Policy for Kenya", Unpublished Sessional Paper, Nairobi.
- Rust, K. (2004). "Doing It for Themselves, Hopes and Challenges in Incremental housing", in: *Housing Finance Resource Programme, an South African Urban Programme funded by USAID, Occasional Paper no 13*.
- Smets, P. (1999). "Housing Finance Trapped in a Dilemma of Perceptions: Affordability Criteria for the Urban Poor in India Questioned", in: *Housing Studies*, (14) 6, pp. 821-838.
- Sheuya, S. (2004). *Housing Transformations and Urban Livelihoods in Informal Settlements; The Case of Dar es Salaam*, Spring Research Series 45, Dortmund.
- Syaga, P. M., Mitullah, W. and Karirah, G. (2001). "GoK/UNCHS Slum Upgrading Initiative: Nairobi Situational Analysis", Nairobi.
- Thalman, P. (2003). "'House poor' or simply 'poor'?" in: *Journal of Housing Economics*, (12) 4, pp. 291-317.
- Tipple, G. (2000). *Extending Themselves: User-initiated Transformations of government-built housing in developing countries*, Liverpool University Press.
- Tomlison, M. R. (2003). "Efforts and Errors: South Africa's Search to Extend Housing Finance to Low-income Households", in: *Housing Finance International*, (17) 2, pp. 8-14
- Tym, R. (1984). "Finance and Affordability", In: PAYNE, G. K. (ed.), *Low-income housing in developing world*, John Wiley & Sons Ltd.
- UNCHS (1978). *Non-Conventional Financing of Housing for Low-Income Households*. Nairobi,

UNHCS (2005), Financing Urban Shelter, Global Report on Human Settlements, Abridged Edition, Earthscan, London.

Verschure, H. (1991), Report and Proceedings for Workshop on Housing, Nairobi.

Wiesenfield, E. "Construction of the Meaning of a Barrio House: The case of a Caracas Barrio", in: Environmental and Behaviour, 1997, (29) 1.