

Sustainable Housing Development in Africa: Nigerian Perspective

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Abstract: The subject, 'Sustainable development' is relevant and applicable to all areas of development and management. Its grand characteristics are its abilities to enhance, protect as well as sustain growth in all ramifications. This paper aims at defining sustainability or sustainable development by emphasizing the importance and implications of cultural values, which is believed to be a source of a sustainable development, by positioning 'cultural values' as a critical key to sustainable development in Africa. It seeks to promote the blend of low-cost indigenous practices and high technology of the contemporary building practices (trado-modern architecture) for mass housing development for low income earners. In order to address the ever growing concern of housing poverty, it is a vital necessity to review cultural legacies embedded in society. Sustainable strategies which dictate a new direction in this mainstream will bring a positive impact on environmental, social and economic systems. The paper reviews literature on African developments in relation to low-income mass housing provision in Nigeria. It is relevant in sustainability in its emphasis on adherence to cultural values which is believed to be a pillar for sustaining any development. The paper is a developmental discourse on Nigerian perspective with an overview of Sub-Saharan Africa for low-cost (affordable) mass housing development.

Key word: Africa; Nigeria; culture; Indigenous architecture; Sustainable development

INTRODUCTION

The word "sustainability" is a very diverse subject. It is not limited to the environment. It equally has its relevance in all spheres of life including socio-cultural, economic and all development policies. The path to a truly sustainable society begins with the objective of improving and sustaining efficiency and safety in all forms of development. It is however a long-term process. The focus is on enhancing and sustaining an existing system or development over a period of time or life-span; thus the term sustainable development. The division for sustainable development of the United Nations defines a sustainable development as a development that meets the needs of the present without compromising the ability of future generations to meet their needs.(UNDESA, 1987). It is described as a development that reaches or maintains a sustainable state (Ott, 2003). It is the guiding principle for international environmental policy and decision-making in the twenty-first century (Braithwaite and Osof, 2010). The core or emphasis of sustainability or any sustainable development is observed in its ability to enhance efficiency in its entirety.

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Adams (2006) describes sustainable development in terms of economic growth, environmental protection and social progress known as the core of mainstream sustainability thinking, drawn in a variety of ways as pillars, concentric or interlocking circles of sustainable development. The resilience of a development in harmony with the environment makes it sustainable. In architectural terms, a "sustainable building" is such that enhances environmental protection, economic growth and social progress. It holistically complements the three pillars of sustainable development.

Socio-economic development and climate change mitigation are two significant yet conflicting challenges facing Sub-Saharan Africa (Okwo, 2008). One major challenge of socio-cultural development relating to housing is lack of access to land, which has been a major challenge of housing development in Africa. Land problem occurs as a result of several factors including over-population resulting from continual influx into urban areas. Consequently, it gives rise to high cost of land, making access most difficult for low income earners, resulting in housing poverty.

Reaching the millennium development goals for development is vital to building better, healthier and decent lives. However, implementing existing commitments must be prompt in order to achieve these goals in our own generation (UNMDG, 2008). Priority must be given to efficient use and even distribution of available resources in order to walk the path of sustainability. When all developmental efforts are geared toward providing necessary infrastructure which stands as a platform for developing initiatives, then will any system begin to find its path in sustenance.

AFRICA, POVERTY AND SUSTAINABLE DEVELOPMENT

Poverty is the greatest global issue. It is much more devastating than the impact of climate change. The subject of sustainability of human race should be the focal point of every major development, and sustainable development generally should begin from here. Poverty, its associated issues and how to combat them are best viewed and understood in the South (third world) countries. Hapanyengwi-Chemhuru (1998) asserts that, "*poverty, unemployment, landlessness, homelessness, environmental degradation and a host of other problems continue to plague developing countries*". According to World Bank's World Development Indicator, "*1.4 billion people are living in extreme poverty—more than one-quarter of the population of developing countries. But countries and regions that have reduced their poverty rates are no less successful by the new measurements. In 1990, at the beginning of the period tracked by the Millennium Development Goals, 42 percent of the people in developing countries lived on less than \$1.25 a day. Over 15 years global poverty fell by an average of 1 percentage point a year*" (WBWDI, 2008). In nations where poverty is prevalent, the challenges to achieve the objectives of sustainable development are far greater owing to issues ranging from limited resources and management, high rate of urban influx resulting in over-population, unemployment and social vices.

According to United Nations Educational, Scientific and Cultural Organization, Sub-Saharan Africa and South Asia are the largest regions with the concentration of people in extreme poverty in the world (UNESCO, 2009). Poverty is a major challenge making sustainable development elusive for many African countries and most countries on the continent do not fully benefit from the opportunities of globalization. This has further exacerbated the continent's marginalization. Achieving sustainable development in Africa has had its constraints evident in situations including limited access to market opportunities and insufficient investment, (United Nations World Summit for Social Development (UNWSSD), 2002). For instance, Ajanlekoko (2001) has observed that house ownership is one of the first priorities on the micro-level for most households which represents the largest single investment for most (between 50% and 70% of household income). In addition, since most of these households belong to the low income earning group, it has become increasingly difficult to own their own houses from their insufficient, meager financial resources. Many as a result have reverted to self-help housing development with the use of sub-standard building materials without employing the services of building professionals. These self help projects with little or no professional supervision due to economic downturn (poverty) have hampered the level of development across the continent. In order to achieve sustainable development in Africa, the issue of poverty must be a priority. Thus, government development initiatives must focus on alleviating poverty in order to pave way for a self sustained society. However, except by the implementability of sustainable

policies—in a long-term, achieving sustainable development might remain elusive. The need for sustainable development especially in relation to environmental and socio-cultural perspectives cannot be over-emphasized.

POPULATION, URBANIZATION AND SUSTAINABILITY

Nigeria's urban population, (as revealed by the 2010 report of the trio of African Development Bank Group (AfDB), the African Union Commission (AUC) and the United Nations Economic Commission for Africa (UNECA)), has nearly caught up with its rural population with its reported mid-year urban population of 49.1% (from 45% in 2004) of its entire population in 2009 (AfDB, AUC & UNECA, 2010). Urban influx (migration from rural to urban settlements) occurs in an alarming rate as people continue to seek green pastures in the face of continual economic crises. The impact of urban influx includes inadequate infrastructure, increased rate of unemployment, poverty, environmental pollution, and housing problems. According to United Nations (UN), half of global population (of the world's 6.7 billion people) was expected to live in cities by the end of 2008, and the fastest growth rates were found to be in the cities of Africa, such as Lagos (Nigerian commercial, largest and former capital city) and Kinshasa (Capital of the Democratic Republic of the Congo). Although they are not yet megacities, they have been predicted to be in the future (UN News Centre, 2008). With a population of over 17 million (out of a national estimate of 150 million), the UN has predicted that at its present growth rate, Lagos metropolis will be the third largest mega city in the world by the year 2015 after Tokyo in Japan and Bombay in India." *Current demographic trend analysis revealed that the State population growth rate of 8% has resulted in its capturing of 36.8% of Nigeria's urban population World Bank, 1996 estimate at 49.8 million people of the nation's million population. The implication is that whereas country population growth is 4 to 5% and global 2%, Lagos population is growing ten times faster than New York and Los Angeles with grave implication for urban sustainability*" (Lagos State Government, 2009).

Urbanization (movement of people from rural to urban areas with population growth equating to urban migration as defined by UN) is attributed to population increase of urban influx. While population increase could enhance urbanization, it could also be a major cause of degradation and urban crisis in the forms of unemployment, housing poverty (over-crowding and lack of sufficient housing) among others. Hence, without commensurate development put in place, the issue of sustainability will only be a mirage. Sustainability is only ensured with a balance in supply and demand of resources. When demands increase in terms of urban influx for instance, there is over-population which in turn puts pressure on available infrastructure, then a struggle for survival ensues. This has been a typical case especially in the Nigerian commercial city of Lagos over the years. Inadequacy in housing provision, for instance, is a major challenge posed by unprecedented urbanization in the developing countries. According to Ayininuola and Olalusi (2004), in many areas of Nigeria, population expansion and urbanization are some of the problems encountered with buildings, in addition to monetary delays in completing building projects (poverty) and lack of good design and professional supervision on most housing constructions.

Government's efforts in meeting the needs of the people have continued to be inhibited (as a result of large population in the case of Nigeria) where a considerable proportion of its resources is being consumed rather than accumulated as capital for development purposes. Thus, the lagging rate of development which is an impediment to the fight against poverty has continued to trigger stagnation in social service delivery (Onwuka, 2006). The increasing impact of population growth (urban influx) and urbanization has not only been felt on development alone. It is equally being felt on the environment. For instance, the urban heat island (which is a result of industrial and urban developments that produce tremendous heat) has been a growing concern in cities. With ever decreasing vegetation and increasing development in various forms in cities, rather than solar energy evaporating water from the soil and water (as in rural areas), it is absorbed mostly by structures which have littered almost the whole available spaces. Hence, surface temperatures keep rising with less cooling during the day. In addition to the heat produced in this process are the industrial (factories), transportation (auto-mobiles) and domestic (heating and cooling devices) release, (Park, 1987). The need for continued efforts in ensuring sustainable development through sustainable policies from an incumbent government to another in transition is necessary to sustain any initiatives of

development. It is also important that stakeholders co-operate with incumbent governments to achieve the objectives of sustainable development in all ramification.

HOUSING DEVELOPMENT AND HOUSING POVERTY IN NIGERIA

Since 1960 (Nigeria's independence), several housing policies have been adopted. Such provider-oriented public-driven strategies include Federal and State housing programs, slum clearance and resettlement, as well as public-international donor-assisted settlement upgrading and services (Ogu, 1996). In spite of attempts to provide low-cost housing through emphasis on public housing schemes, for decades, Nigeria's housing policies have had little success since most of them have failed to meet the housing needs of the most vulnerable low-income households. It is this class of people at the lowest level of the pyramid who require accommodation most (Ogu & Ogbuozobe, 2001). Thus, there have been such a limited impact on housing development and improvement in the country (Ogu, 1996). The National Social Housing Scheme (NSHS) (offered as an alternative, for the low income earning citizens) across the country could encounter a recurring problem of effective implementation to make it work according to its stated goals (Etim et al, 2007). *"Inadequate housing is a major problem facing cities in the country and often manifests in the inability of supply to cope with demand, poor housing conditions, and paucity of basic infrastructure services and amenities (FRN, 1997)...No evidence of improvement in the housing conditions of lower income groups in terms of affordability, tenure, standards and access to service as observed by (United Nations Centre for Human Settlements (UNCHS), 1996)"* (Ogu & Ogbuozobe, 2001). The economic recession of the 1980s and attempts to restructure the economy under the International Monetary Fund (IMF) stabilization programs, did not help housing provision either. The structural adjustment policies that were formulated to tackle broad economic problems were drawn up with little regard to the adverse effects on the housing sector (World Bank, 1993). Largely, the number of housing units provided by the government (on state or federal levels), developers or individuals have been insignificantly small relative to an ever growing demand in Nigeria. While continual rise in Urban population constitutes to the magnitude of housing problem in Nigeira, it is equally true that many of the housing (development) policies have not been capable of solving at least one-half of the housing problem in Nigeria. Thus, lack of access to good or decent housing (housing poverty or disadvantage) has continued to be a major challenge facing the country.

The political and administrative structures of African cities and the major challenges faced in providing social and physical infrastructure services (known as urban management in African context) need to be enhanced. The challenges include urban economic resources management, particularly land and the built environment assets. However, enumerating these challenges alone does not necessarily specify how urban management would achieve the goals of improving the quality and quantity of goods and services (Clarke, 1991), (Kadmiel, 1997). It is crucial to take steps further by tackling one challenge after another with priority given to the basic social and physical infrastructure such as housing development, water supply, electricity and transportation. For instance, in order to solve housing poverty, governments might have to begin by acquiring land, making layouts as well as servicing them with other basic infrastructure before making them available for sale. In addition however, it is essential that land areas are acquired beyond the present demand and developed to meet the required (growing) and anticipated population growth (Olayiwola et al, 2005). Focus on land management is essential to ensure its efficient and sustainable usage in Africa. Government agencies and stakeholders need to accept the responsibility for maintaining or managing available resources in order to achieve sustainable goals.

AFRICAN CULTURE AND SUSTAINABILITY

Culture is a contributing factor to economic development and it plays a major role in all forms of development and the subject of sustainability. Its role and importance in sustainable development cannot

be over-emphasized. *"The paradox of Africa's poverty lies in the fact that the indigenous peoples and local communities often have highly sophisticated knowledge, which can be successfully implemented to manage ecosystems' sustainability"* (Viriri, 2009). According to (Furusa, 1998), "each culture has operative value systems and behaviour patterns it has generated for the achievement of its agenda". Knowledge is the cornerstone of every form of development; hence development must be integrated by promoting indigenous knowledge (Viriri, 2009). Indigenous knowledge viewed from an indigenous philosophy of any given community therefore, cannot be isolated in view of any form of developmental planning, if a truly sustainable development is an objective. With Africa's rich and diverse culture, it is possible to integrate its socio-cultural system in order to contribute to enhancing development. For instance, the United Nations Conference on Trade and Development (UNCTAD) (2009) advocates for strengthened intra-African integration for development. It suggests that Africa's share of its multi-diversified cultural values could promote developmental initiatives, and development in general terms should begin under traditional auspices, possible with respect for tradition. Hence, the level of development in a community is rooted and traceable to the degree of value accorded its cultural system and practices. While learning from foreign cultural values, it is necessary that Africa enhances its traditional systems to promote technological progeny and not a total jettison of its viable and sustainable values rooted in its culture. With a blend of traditional approach and contemporary practices, Africa's development could be well enhanced in this millennium. A proper account into cultural dimensions peculiar to individual communities would, in a broad sense, complement the United Nations Millennium Development Goals.

The benefit of incorporating culture in development is immense, especially with a hybrid of indigenous and modern practices. Change in cultural value system is observed in the sense that the shared practice of indigenous potentials is given an expression which is approved and rewarded accordingly. It is an added value for the cultural system when a society becomes proud of their (viable and sustainable) culture. This will find further expression in the people's satisfaction with their met needs. It revitalizes indigenous practices. Awareness is enhanced as society advances in profitable adventures bringing about productivity through green-indigenous (hybrid) technology. It spurs morale and creativity, while ensued healthy competition results in a revolution. Just like the culture of Africa, building practices are equally exceptionally diverse. Many ethno-linguistic groups throughout the history of Africa have had their own architectural traditions. Indigenous buildings had their typical sustainable features noted in their eco-friendly components. However, almost in all African regions, there have been a uniform use of materials like wood (as beams, braces or columns), red clay (adobe), thatch or palm leaves/fronds stones and straw as major components in their building features.

INDIGENOUS AND MODERN ARCHITECTURE: A BLEND FOR SUSTAINABLE DEVELOPMENT

While Africa has a diversified but unique cultural and building practices, its indigenous architecture shares the same objectives with green architecture, even though it has remained undeveloped and systematically not applauded. As a direct evocation of its own environment or climate, African indigenous architecture, observed from its building materials, favors the requirements for utilization of environmental resources and its conservation. It is sustainable. However, over the years, indigenous buildings have been subject to various external influences traceable to pre-colonial inter-regional trades, colonial invasion, as well as cross-cultural and religious practices. (Alemayehu, 1999) has simply grouped buildings (housing) into two categories: traditional and modern buildings. This study however focuses on both building types with emphasis on the relevance of traditional buildings. Except in most remote rural settlements, contemporary (modern) architectural practices have taken the tone for buildings in Africa. The era in the trend of African Architecture began with predominantly indigenous (traditional) building practices linked to the pre-1955 of the early tropical architecture (first phase of the early departure from the predominant traditional building practices), followed by mid and late tropical architecture, and the contemporary (modern). (Uduku, 2006) categorizes tropical architecture as early-tropical (pre-1955), mid-tropical (1955 to early 1960), and late tropical (late 1960s to early 1970s). While tropical architecture that evolved around the mid 20th century paid emphasis on climatic conditions in the design of housing, current attention should be on enhancing the

suitability of indigenous architecture in providing affordable housing for low-income earners. The cost effectiveness, energy efficiency, sustainability, and availability of local resources call for re-adoption and re-integration of the indigenous values of housing provision in Africa. Acceptance and wide use of these suitable, climate responsive resources, with simple designs for residential buildings, is therefore paramount to African development, in terms of sustainable mass housing. This will require a rethinking of commitment to cultural identity in Africa. A holistic commitment to cultural values could help achieve a sustainable African society.

Studies reveal that building materials generally constitute a large proportion of total capital investment up to 80% of total value of construction and five to eight percent (5-8%) of total imports (ECA in Alemayehu, 1999). The contribution of the sheer size of building materials to the economy means that the development of construction and building materials industry can generally enhance economic development (Alemayehu, 1999). The use of local materials and building methods will cut costs to its barest minimum. The impact of green technology on the state of economy observed from the standpoints of cost saving/effectiveness is immense. Household revenue in terms of disposable income increases as housing expenses reduce. Maintenance cost and general bills are minimized. Percentage of house ownership will increase as well as optimization of the national domestic economic performances. Green designs within the framework of blended indigenous and contemporary practices for development could help Africa achieve the objective of sustainable housing development.

African indigenous Architecture is sustainable. For instance, its indigenous building materials show-case qualities and properties that are tropical climate responsive. Promoting alternative strategies and policies for public housing schemes, through enhanced indigenous architecture, could effectively help meet the ever growing housing demand and submerge housing poverty, beginning with rural development. However, while African architecture is argued to be sustainable, it has been highly under-developed as well as unmatched with the contemporary, as a result of its low technology. Indigenous architecture is sustainable with enhanced technology. While encouraging the practices of indigenous architecture, it is however necessary to review and enhance its technology in order to gain acceptance by the populace. Building practices depend largely on the available materials and climate of a locality. Mud for instance, is a building material in serial use in typical African rural areas, which when continually improved upon, could help achieve a sustainable housing development.

The United Nations Environment Program's Atlas affirms that *"in rapidly globalizing economy, access to scientific and technological information has a critical role to play in sustainable development"* (UNEP 2008). Innovations in science and technology have brought major advancements globally. New discoveries in technology would make tremendous contributions towards sustainability, while making local resources integral in development processes would facilitate innovative ideas in developing countries. The Nigerian Building and Road Research Institute (NBRRI), which integrates applied research and development (R&D) in the building and construction sectors, has made tremendous improvements towards indigenous technology on local building construction. A larger scale effort in this direction would be necessary to promote sustainable development. Adoption of green technology will promote research findings and advance indigenous technology while improved (enhanced) Indigenous technology will result in industrialization of Africa. Green developments' eco-friendliness, climate responsiveness and organic protective measures safe-guard as well as minimize environmental impact of hazards. Healthy in-door and out-door environment is secured. The thermal insulation, energy saving of green buildings, and green roof's ozone pollution reduction capacities all reduce negative environmental impact. Extensive use of recycled materials help conserve, restore, and preserve the eco-system. Green buildings' waste management ensures resources and energy efficiency. The proximity or accessibility of local materials will always save costs and promote development in general. Buildings with a blend of indigenous material features could help achieve sustainable mass residential housing in Africa.

CONCLUSION

This paper suggests that the duo of "trado-modern" approach of building practices (trado-modern architecture) is a path to African sustainable housing development. With a focus on climate responsiveness or eco-friendliness of building designs, the environmental friendliness and sustainability, this blend could

help promote the United Nations global developmental objectives for developing countries, especially as it appertains combating poverty from its grass-root level.

Culture has a huge role to play in development. Housing development tailored to local needs, climate and way of life will enhance sustainable development in Africa. The hybrid approach to building practices could help the goal of sustainable development. It puts into consideration the easily affordable local resources and the development of concepts that sustain the socio-cultural value system within the building sector. Green or sustainable Architecture approaches building construction with the aim of minimizing harmful effect on human health and environment. It attempts to conserve environmental factors such as air, water and the earth by employing eco-friendly building materials and construction practices. African-indigenous Architecture, synonymous with sustainable Architecture, takes into account the extensive use of tropical climate-responsive local materials. The use of local resources for advancement in its technology, through a re-visit of indigenous based practices to leverage contemporary technology, is relevant for sustainable development. The duo (blend or hybrid) of traditional and modern architectural practices could therefore be a key to a sustainable housing development in Nigeria and Africa as a whole. The concept of green or sustainable building construction practice is inevitable in sustainability discourse particularly in the perspective of the three pillars of sustainable development: environmental, economic and socio-cultural development. A sustainable building is measured in terms of resource use and management e.g. water, energy, waste/recycling as well as building designs or construction practices. It could be evaluated by its environmental, social and economic values measurable by the impact and trade-offs. A sustainable building is a value-added product. From this perspective, African indigenous architecture is sustainable as it focuses on the potentials of available local resources for enhancement of the building industry for the provision of sustainable mass housing development in developing countries.

The degree of adherence to sustainable principles will determine the effectiveness and implementability of policies needed to enhance any anticipated development in Africa.

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