

Ending The Menace of Building Collapse in Nigeria Through Collaborative Development Control

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Abstract- In addition to planlessness, inadequate development of control mechanism has contributed immensely to some of the environmental and physical planning challenges cities in developing countries face. The poor living environment, blighted communities, urban sprawl and the very recently talked about building collapse in the country have all lent credence to this development. To build an inclusive city void of or with the barest minimum sustainable development challenges, there is thus the need for collaboration and public participation not only at the level of development but also at the regulatory function of physical planning. The argument of this paper focused on entrenchment of professional collaboration in physical planning development control towards ending the menace of building collapse in Nigeria. Data were gathered through secondary sources and the analysis was content based. Findings revealed that the incessant reported cases of building collapse observed in the country were as a result of non-compliance to materials specification, lack of supervision/inspection during construction, avoidance of building permit, use of quacks among many others. The paper therefore suggested development control platforms through which collaboration can take place among the professionals in the building industry to end the menace.

Indexed Terms- Control, Collaboration, Development, Inclusive City, Professionals.

I. INTRODUCTION

The menace of building collapse is aggravating the environmental challenges some developing countries like Nigeria are having. This has seriously

compromised sustainable development in the country. Egunjobi and Adebayo (2016) observe that the devastation in loss of lives and property as well as disruption in national socio-economic and quality of life indices have been enormous. Between 1978 and 2013, Olatubara and Kasim (2013) discover about 135 cases of building collapse in Lagos only. Though, these figures are conflicting going by the 91 reported cases across Nigeria between 1974 and 2010 (Windapo and Rotimi, 2012) and about 40 cases across the country from 1970s to about the same time mentioned by Iyangba (2000), Fakere (2005), Nigeria Daily News Paper (2000-2003), Ogunsemi (2002) and Oke (2009) all cited in Babalola (2015); not less than 379 deaths, multiple injuries and loss of property worth billions of naira have been discovered across Nigeria in the last 25 years (Windapo, 2006 cited in Egunjobi and Adebayo, 2016).

The incidence of building collapse is not limited to Africa or other developing countries alone. There have been reported cases of building collapse since around 200BC. In the 1990s, a department store collapsed in South Korea, a palace in Brazil, sports hall in Germany and between 2000 and 2013; there were also cases of bridge collapse in Portugal, World Trade Centre in America, collapse of the roof of trade hall in Poland, stadium roof collapse in USA, shopping mall in Canada and a building under construction in Brazil (Wikipedia, cited in Chendo and Obi, 2015). What makes the difference are the factors responsible, methods and manner of managing the disaster and the process of urban development. The currently limited disaster management capacity of Nigeria leaves much to be desired regarding the prospect of overcoming building collapse in the near future, hence the need to begin to restructure the existing institutions saddled

with the responsibility of coordinating urban development.

Generally in Nigeria, regulation of urban physical development is the prerogative of planning authorities, statutory bodies empowered by law to exercise physical planning activities in their areas of jurisdiction. They exist as either government ministries, parastatals, agencies, local planning authorities or private institutions. Governments' institutions have been predominating. As observed by Oyesiku (2004), the absence of a definite policy at the national level discourages putting in place a good framework for control of development in the country. The Plans are articulated poorly as the processes involved are not properly followed due to existence of many planning authorities (Wapwera, 2013). Even though at the state level, the constitution provides that the state government should set up guidelines for physical planning matters using the planning authorities (Oyesiku, 2004), much of the environmental disaster like building collapse has still remained uncurbed partly due to state governments' lack of concern and understanding of the importance of town planning function in many states and local government areas as reflected in the way planning is frequently moved from one ministry to another and from one ad-hoc metropolitan board to another (Oyesiku, 2004 and Fadare, 2004). The existing planning authorities, in addition to being fraught with some of the challenges stemming from the above, also do not portray coalition of relevant building professionals. Most of the urban development control taking place are being carried out by few qualified Town Planning Professionals, hence, the frequent occurrence of urban and regional development challenges like building collapse in the country.

A lot of studies carried out, though identifying the challenges of development control in Nigeria, majorly focus on administrative and management issues and the process relating to public's response; not much work has been seen in the area of synergy building among the main stakeholders. In this regard, this paper argues that professional collaboration, starting with institutional overhaul, in development control exercise will play a significant role in ending the menace of building collapse and some other man-induced environmental challenges in Nigeria. The study

reviewed incidence of building collapse in Nigeria, identified factors responsible, examined administration of development control and suggests necessary policy direction.

II. CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Development Control

Development control has been defined as the mechanism through which the entire process of urban development is regulated to achieve the objective of promoting overall benefit of the society and creating a distinct image of the city. It includes guiding the development and use of land, curbing misuse of land and promoting rational and orderly development of built environment (Chandigarh, n.d). Regulating urban development, however, goes beyond just ensuring that development is carried out in accordance with the approved plan or that land is not misused; of course, control of developments that are likely to constitute nuisance is at the heart of development control. In other words, regulating "development" as defined in Nigerian Urban Regional Planning law (Decree 88 of 1992) appears to be adequate, that is, any building, engineering, mining or other operations in, on, over and under any land or demolition of buildings including felling of trees and the placing of free-standing erections used for the display of advertisements on the land. Building or other engineering operations' regulation will, therefore, imply that proper supervision of such operations, both at the levels of design and implementation, is required. This means that development control is beyond promoting the state of the art development and quality environment through architectural creation but also includes assurance of safety of the people through the control of man-induced environmental disaster and nuisances such as building collapse.

2.1.1.1 Development control tools

Drawing on development control practices globally, there are some instruments or tools employed by the planning authority or agency to control development. Prominent among these tools are building regulation/ building code, design statement, zoning, master plan etc. The ones adopted varies by country based on the development control structure. In England and Wales

for instance, the detailed requirements of building regulations are scheduled within 14 separate headings, each designated by a letter ("Part A" to "Part R"), and covering aspects such as "structure", "fire safety", "access", "electrical", "protection from falling", "drainage", and so on. Building regulations are distinct from planning permission; they control how buildings are to be designed or modified while planning permission is concerned with appropriate development, the nature of land usage, and the appearance of neighbourhoods. Within the United Kingdom, any significant development may require a variety of different consents from different agencies before commencement, such as approval of construction materials and methods under the relevant building regulations. Building regulations are statutory instruments that seek to ensure that the policies set out in the relevant legislation are carried out. There is also a design statement that must accompany planning applications for some deserving development which sets out, illustrates and justifies the process that has led to the development proposals under English and Welsh planning law. It does not just give a description of the development, but also explains how the design was arrived at, what local planning policies have been observed, how any public engagement has been reflected in the design, and how relevant principles of good design have contributed to the proposal. This is done with a view to letting the lay public understand how the finished proposal was arrived at, and acts as a check upon the quality of the decision making process which led to that proposal by the developer concerned (www.wikipedia.com). In Kenya, some of the tools used to control development include comment sheet, issued to the developer at the point of application submission raising a number of issues that determine whether approval, deferral or refusal of development permission notification will be issued; then in the case where approval is given, certificate of compliance is given to developer on completion of the building construction. These are worked within the framework of the elements of urban development control such as part development plans, sub divisions, change of user, extension of user, extension of lease, and the building plans. These elements of urban development are implemented leading to the way the towns spatially get organized (Job *et al*, 2014). The tools used by Ghana and Nigeria are more or less the same: building

regulation, enforcement notice, stop work order, contravention and demolition notices. Building regulation within Nigeria context sets among other things the various setbacks that the proposed building must observe from the property boundary lines. Zoning regulates among other things permissible height of building, the use that the building is expected to be put into. Enforcement, contravention notices, stop work order and demolition notice essentially stem from the planning law with the cumulative objective of defining urban form. According to the Act, enforcement notice is to be served on the developer asking him/her to make some alterations, vary, remove or discontinue with an unauthorized development premised on the grounds of public interest. Stop work order and contravention do not only apply to unauthorized development, they consider also non-compliance with the approval given. The last control tool to be applied by the planning authority is the demolition notice, which comes into effect after all the previous notices for amendment, removal, discontinuance have been defied by the defaulting developer. Within the application of these tools, the law supports that the dissatisfied developer makes an appeal. Unlike what obtains in England, the idea of integrating the public into development control process appears to be lacking.

2.1.2 Collaboration

Collaboration emerged as a strategy for addressing environmental and natural resource disputes in the 1970s. Since then, its use extends to a wide range of problems at state, regional, community, and neighborhood levels. These initiatives address a myriad of problems including economic development, urban sprawl, neighborhood empowerment, education, transportation, health care and governance. The Global Community of Information Professionals (2015) cited by Gunn (2015) define collaboration as a working practice whereby individuals work together for a common purpose to achieve business benefit. They identify the following as features of collaboration at the conceptual level: awareness, motivation, self-synchronization, participation, mediation, reciprocity, reflection and engagement. As an act, it could be interdisciplinary or intra-disciplinary. In the case of development control, because aspects of building construction involve many

professionals, inter-disciplinary collaboration, would therefore be the consideration of this paper.

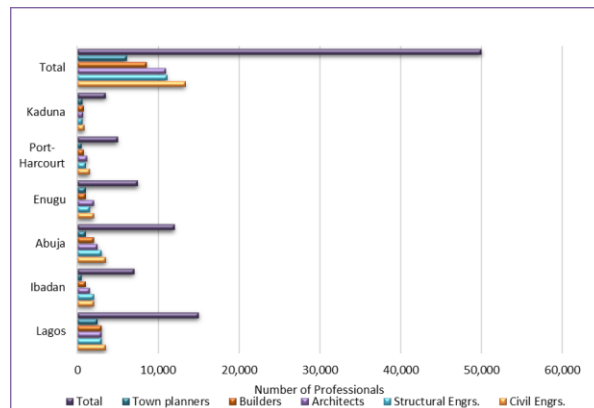
2.2 Literature Review

2.1 Factors Responsible for Building Collapse in Nigeria

Basically, factors contributing to building collapse can be classified into two groups: natural and man-made or human induced. The human induced factor, which is the concern of this paper, just like the natural factor, leads to building failure resulting in the final collapse of the structure. Failure in building can be defined as the incapability of the building components to sufficiently perform their expected functions (Babalola, 2015) of firmness, safety and comfort. Babatunde and Opaowole (2009) quoting Ayinnuola and Olalusi (2004) as cited in Babalola (2015) attribute building failure in Nigeria to 50% design fault, 40% construction site fault and 10% product failure. Arayela and Adam (1980) cited in Ojo *et al* (2013) observe that defects may have their inception from inadequate briefing and design deficiencies may culminate in problems such as design bearing support, calculation errors, deformation shrinkage, errors in assumed loading and changes in existing structure. Ojo *et al* (2013) further note that difficulties in construction can arise as a result of inadequate overall field inspection, poor mixing and placing practices, handling and erection especially with lift slab work and precast units, overloading vertically or horizontally, unstable bearing support from form work, pre-mature removal of form work, insufficient

cover for reinforcement or unsatisfactory quality of reinforcing materials. A number of reasons have been adduced to design and construction errors among which include poor/lack of communication between the client and designer or between consultants and contractors; poor supervision; low workers wage; few quality and control procedure (Groffin, 1990 cited in Babalola, 2015); use of unqualified professionals, avoidance of building permit and corrupt practices from planning officials. This must have informed the conclusion of Egunjobi and Adebayo (2016) that the problem of building collapse in developing countries with particular reference to Nigeria is a function of the negative contribution of the policy decision makers, the professionals and the public. Apart from inadequate information among the building professionals in Nigeria, the number of qualified ones is also another issue to contend with. For instance, in six cities: Lagos, Ibadan, Abuja, Enugu, Port-Harcourt and Kaduna; only 50,000 professionals consisting of Builders, Civil Engineers, Architects, Town Planners and Structural Engineers are registered members of Nigerian Institute of Building as at 2013 (Mba Okechukwu, 2014). From the distribution, Civil Engineers have the highest proportion of professionals constituting about 27% across the selected cities followed by Structural Engineers with about 22%. Architects and Builders have about 40%; ironically, the Planners who are at the approval end of development permit have the least number of registered members, about 12% (Figure 1).

Figure 1: Distribution of Building Professionals in Six Selected Cities in Nigeria



Source: Nigerian Institute of Building, 2013. Adapted from Mba Okechukwu, 2014

2.3 Administration of Development Control in Nigeria
Administration of development control was the responsibility of the entire Planning Agency/Board in charge of physical planning prior to 1946 Nigerian Town Planning law. The major instrument used was the ordinance with extensive focus on public health, sanitation, land acquisition and segregation of areas for development between the Europeans and the natives (Oyesiku and Alade, n.d, cited in NITP, n.d). Public health officers and clerks of the Planning Boards/Agencies were largely responsible for carrying out the development control. The drastic expansion of the development control activities with responsibilities being shouldered by Planners and other administrative officers started taking place with the promulgation of 1946 Town and Country Planning law. The law allowed for preparation of planning schemes and establishment of planning authorities. The law was perceived to be discriminatory in controlling development as concern was majorly on the European quarters to the detriment of native areas. In spite of its inadequacies, Planners depended on this law for about fifty years to be able to carry out development control throughout the nation. The rapid population and socio-economic growth of the country coupled with disregard for public participation accounted for the replacement of the 1946 law with Decree 88 of 1992 Nigerian Urban and Regional Planning law (Oyesiku, 2007 cited in NITP, n.d). Since the national adoption of the 1992 law with slight or no variations by some states, not much difference has been seen in terms of professionals in charge of development control, that is, development control has been within the prerogative of Town Planners majorly. In the work of Ibrahim and Toyobo (2014) on staff strength of Ogbomosho South Town Planning Authority, over 70% of the staff strength consists of planners with no special department in charge of development control. This is the typical structure of Planning Authorities in Oyo State and other Southwestern States of Nigeria, with the exception of Lagos. Though there are other lapses in operational mechanism inhibitory to her development control, the Lagos State Government has initiated a more harmonized activities of Ministry of Physical Planning and Development, the Lagos State Urban and Regional Planning (LASURP), the Lagos State Waste Management Authority, (LAWMA) and the Ministry of Environment regarding enforcement,

administration, approval of building documents and demolition of illegal structures (Obabori *et al*, 2007)

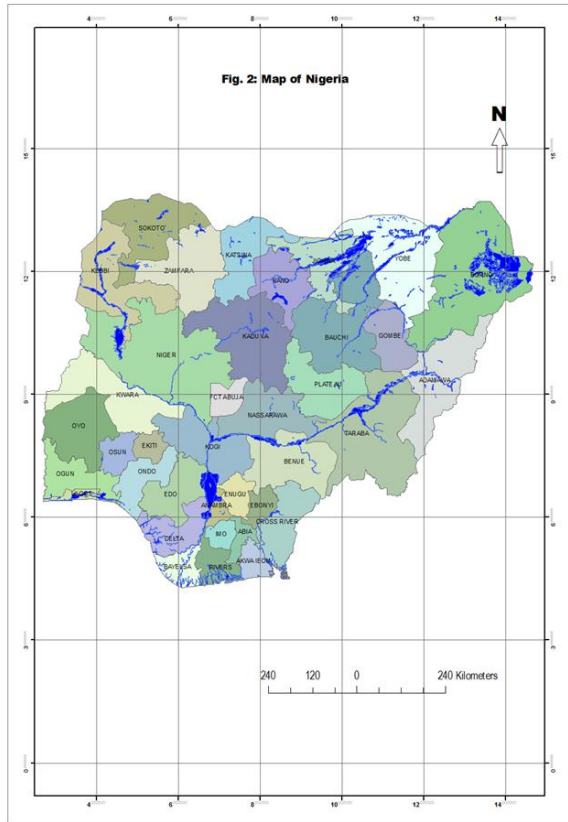
The case of Eastern part of Nigeria is not so different from the picture in the south west as observed by Okekeogbu (2011). In Enugu, his study area for instance, only few local planning authorities have Architects and Engineers. None has a Surveyor or Lawyer while other staff are predominantly Planners. As a result of this, the process of vetting development documents most time is not thorough, leaving the developers to take advantage of the process. The procedure has led to sub-standard practices in building production such as deficient structural drawing, alteration of approved drawings, building without development permit, approval of technically deficient drawings, illegal alteration of existing buildings and substandard materials (Mba Okechukwu, 2014). And with planners only taking charge, many sites are developed without permission as the process involved in obtaining this permission is cumbersome, rigorous and unending making it difficult and most at time utopia for the developer to obtain the permission (Ekop, 2007). This singular act has made it very difficult to control development by the numerous planning authorities which is a good reflection of what obtains in most developing countries and in the long run making such developments come up haphazardly, illegally or as informal settlement (De Soto, 2000; Parsa *et al.*, 2010; Wapwera, *et al.*, 2011 cited in Wapwera and Egbu, 2013).

III. RESEARCH METHODOLOGY

The focus of the study is Nigeria. The Federal Republic of Nigeria, commonly referred to as Nigeria, is a federal constitutional republic in West Africa, bordering Benin in the west, Chad and Cameroon in the east, and Niger in the north. Its coast in the south lies on the Gulf of Guinea in the Atlantic Ocean. It comprises 36 states and the Federal Capital Territory, where the capital, Abuja is located.

The study was carried out using secondary data on building collapse incidences in the country, factors responsible and administration of development control obtained from journals, books and other web resources. Content analysis was used. To complement the secondary data, observation was made and few

town planning officials in government planning authorities were interrogated through telephone chart to gather information on administrative structure of the planning authorities.



Source: Ministry of Works and Housing, Lagos, 2016

IV. DISCUSSION

From the preceding sections, it is obvious that some of the highlighted human factors causing building collapse are professionally related, though, not all the causes are the responsibility of the professionals in the building industry. According to section 27, subsections 1 and 2 of the Nigerian Urban and Regional Planning law, the planning authorities at the different levels of planning in Nigeria, that is, the Commission, the Board and the Authority shall each establish a department to be known as Development Control Department and the composition of the Departments shall be multi-disciplinary, meaning that different professionals in the building industry and related fields shall constitute the membership, charged with the responsibility for matters relating to development control and implementation of physical

development plans. These Departments as contained in section 28 subsections 1 and 2 and section 29 of the Law are so empowered that all developers including government agencies must obtain development permit before embarking on any development. During the course of application, all submitted documents and drawings will be thoroughly vetted by relevant professionals in the Control Department before certifying the deserving proposals worthy of development. It is important to also emphasize that it is not only the Control Department that must be multi-disciplinary in composition; it starts with the planning authority itself (Commission, Board and Authority). Sections 6, 8 and 10 of the Law spell out this.

The existing structure of the Control Departments in Planning Authorities in Nigeria, comprising mainly Planners, makes it safe to conclude that non-adherence to the provisions of Urban and Regional Planning Law on establishment of Development Control Department is largely responsible for some of the deficiencies which these Departments are characterized by with regards to discussion on building collapse. Though, some studies have observed shortage of personnel as one of the banes of development control, the bone of contention is not the shortage of the professionals in the planning authority but the actual equitable representation of other relevant professionals in such authority. Development control ought not to be limited to tool for implementation of master or other development plans. Definition of development (within built environment) as outlined in section 2.1 of the planning law shows its multi-disciplinary scope, so the approach to carrying it out ought not to be within the purview of a particular professional group.

Again, considering the findings of Groffin (1990) and Ojo *et al* (2013); lack of cohesion between Engineers and Contractors and other professionals coupled with the failure of relevant professional bodies to sanction the erring members or bring non-professional culprits into justice further re-emphasizes non-existence or inadequate synergy among the professionals in the building industry. Maintenance of the status quo implies that the menace of building collapse is likely to aggravate in the future considering the rate of population growth and urbanization with the resultant high demand for housing and other infrastructure.

When comparing to what obtains in other climes, one can conclude that development control is not fully effective in the country. For instance, the studies of some authors (Hayes and Chang, 1990; Healey, 1997; 2004; 2007; Pinto, 2000; Salet, *et al.*, 2003; Savage and Dasgupta, 2006; Nallathiga, 2008; Rydin, 20011; Hull, 2011 cited in Wapwera and Egbu, 2013) indicate clearly that there are organized structures for planning authorities in some countries, both developed and developing. In Greater London Authority for example, there is a mayor having executive role and Assembly members with oversight function. The authority apart from preparing statutory strategies on transport and spatial planning, economic and environmental development also provides services in policing, transport, fire, emergency planning among others. The Kolkata Planning Authority though not operating a mayoral system, offers a good platform for collaboration of stakeholders by drawing its members from both the municipalities and village councils. The activities of the Authority covers but not limited to preparation of development plans like perspective plan, draft development plan; traffic and transportation, water supply, drainage and sanitation, public infrastructure. The city of Johannesburg in South Africa also operates a mayoral system for its metropolitan municipality. The political head of the council is an executive mayor, who presides over a ten person mayoral committee. The council has a City Manager, along with executive directors for planning, in charge of community development, finance, municipal administration and contract management amongst others who heads the city's central administration. The heads of Metropolitan Police Department, emergency management services, and arts, culture and heritage services also report directly to city manager (Mawson, 2011 cited in Wapwera and Egbu, 2013). Undoubtedly, the structures in these countries are responsible for effectiveness of development control and minimization of environmental disaster like building collapse against what is experienced in a country like Nigeria with ineffective administrative and management structure. Ghana, despite having a structure that more or less functions like Nigeria, that is, operating local planning authority for urban development matters, has a special building inspectorate department comprising other professionals from allied field in built environment,

though bedeviled by shortage of manpower, still has a reflection of professional collaboration.

CONCLUSION AND RECOMMENDATIONS

The study has been able to show that building collapse has added to the environmental concerns developing countries are having especially in the recent time. While recognizing the inadequate capacity of the country in handling disaster management, it has also been highlighted in the paper that development control mechanism has been as well inadequate. Total disregard for the provisions of urban and regional planning law with respect to development control coupled with non-implementation of the law in some parts of the country are worthy of being mentioned. In addition to this, the lack of synergy among the relevant professionals in the building industry has added a notable dimension to the menace of building collapse as evident in factors leading to most building failure in Nigeria.

Given the spate of development across the country arising from high urbanization rate, it may be safe to conclude that environmental challenges particularly building collapse havoc may not have reached a bearable state of control, rather the tendency for its rise. In other words, the incidence will significantly rise as development pressures increase. This has serious implication for sustainable development.

Consequent upon this, the following recommendations are suggested:

1. The full implementation of Nigerian Urban and Regional Planning law by all the states, allowing for modifications peculiar to each state
2. Establishment of Development Control Department in accordance with the provisions of the URP law that is, encompassing all relevant professionals
3. Synergy building among relevant professionals in the building industry

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