



DEVELOPMENT CONTROL STRATEGIES FOR SUSTAINABLE AND RESILIENT URBAN DEVELOPMENT IN SUB-SAHARAN AFRICA

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Globally, development control (DC) is considered as an effective means for achieving the objectives of public health, safety, harmonious development and minimizing future expected losses in the built environment. However, efficient and effective controls remain a major fault line for countries in Sub-Saharan Africa (SSA). The challenges include haphazard developments, growth of slums, increased number and impact of disasters and chronic risk. Many researchers have explored various tools and strategies for ensuring orderly developments and the creation of sustainable and resilient neighbourhood. Through literature review, the study explores the major weaknesses in the implementation of key DC strategies in SSA and the barriers to their potentials in ensuring sustainable urban development. From the study, land use planning and building regulatory governance were identified as remarkable development strategies that could be leveraged as a means of ensuring safety and encouraging sustainable and resilient urban development. Inadequate Funding, Outdated Legislation, Inordinate delays, Weak Enforcement, Lack of Awareness, Corruption and Minimal use of ICT were recognized as key factors that account for ineffectiveness of DC in SSA. It was established that increased private sector participation, use of technology and contemporary urban management systems will benefit from the use of building regulations for sustainable and resilient urban growth in SSA. The paper therefore recommends the use of novel governance approaches such as smart building regulatory governance for sustainable and resilient urban development in Ghana and other countries in SSA.

Keywords: development control, regulatory governance, resilience, sustainable development

INTRODUCTION

The urban future possesses enormous capacity for human development and when managed efficiently, urban areas have the potential to provide more equitable access to services, quality environment as well as improved environment for humanity. Unfortunately, cities are faced with unprecedented demographic,

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environmental, economic, social and spatial challenges (Civil Society, 2013; Obia et al., 2015; UN-Habitat and Africa Planning Association, 2013; UN-Habitat, 2015). More than half of the world's population reside in urban areas alone and it is projected that 6 out of every 10 people will live in cities by the year 2030. According to UN-Habitat (2015), over 90 per cent of this demographic growth is expected to take place in developing countries alone. In 2010, the urban population of East Africa, West Africa, Southern Africa, North Africa and Central Africa were estimated at 21.7, 44.95, 48, 51.5 and 58.4 per cent of the total population respectively (UN-DESA, 2015). Research has indicated that the countries in SSA have a population growth rate of 2 percent, the fastest in the world. The rapidly increasing population of urban areas creates greater demand on the economy and constraints economic growth (Mutunga et al., 2012). As a result, many cities in SSA grow spontaneously without the requisite infrastructure, spatial and settlement planning schemes and the resource capacity to manage the growth. SSA recorded the highest proportion of informal settlements than any other part of the world (UNDP, 2012) and these settlements are characterized with inadequate access to basic services, precarious environments and slum conditions (Mutunga et al., 2012; UN-Habitat, 2015).

Ghana, like most developing countries in SSA is not an exception to the unprecedented urban population increase. According to Ghana Statistical Service (2014), the country's urban population constituted 50.9 per cent of the total population of 24,658,823 in the year 2010. Comparatively, the urban population of Ghana recorded a more rapid annual growth rate (4.6 %) than the rural communities. Although the growth of Ghana depicts an urban primacy situation, the monologue by Ghana Statistical Service (2014) on urbanization in the country revealed that the rapid urban growth is fraught with serious developmental challenges. It must be emphasized that these urban challenges are not peculiar to Ghana but evident in most countries in SSA and Africa as a whole (Dave, 2010; Mapuva and Chari, 2010).

According to Mutunga et al. (2012), SSA countries are not able to reap the benefits and prospects of rapid urban growth in contrast to developed countries where urbanization is often accompanied by massive infrastructural developments, improved concentrated urban services and economic opportunities. The challenge in SSA is that the scale of urban growth far outpaces the capacity to adapt and provide the needed services to support the growth. Notably, enormous deficiencies in housing and service provision, uncontrolled and unplanned urban sprawl, poor transportation and communication services and absence of appropriate response to anthropogenic climate change are evident in urban centres of SSA (Ogundele et al., 2011; UN-Habitat, 2015)

Despite the challenges, urbanization can be transformative and when deployed and planned effectively, it can ensure prosperity, development and wellbeing of society (UN-Habitat, 2015). To ensure that towns and cities in SSA are effective in meeting the needs and development of their inhabitants, research has demonstrated that urban development in such areas must be guided by the appropriate development control strategies (Dave, 2010; Ngetich et al., 2016; World Bank, 2016).

Although previous studies have highlighted the use of DC strategies for ensuring orderliness, public safety and welfare, there are ample evidence to assert that these strategies have failed to meet their intended goals especially in relation to urban sustainability and resilience. Through literature review, this study sought to identify the major weaknesses in the use of key DC strategies and explore the opportunities for achieving sustainable urban development in Ghana and SSA countries through building regulatory governance. The following questions underpin the study;

- What are the key DC strategies in SSA?
- What are the major weaknesses that hinders the effective and efficient use of these key DC strategies in SSA?

RESEARCH METHODOLOGY

The paper adopts literature review as a methodology to discuss development control strategies in SSA in relation to sustainable and resilient urban development. According to Onwuegbuzie and Frels (2016), literature review involves the identification, understanding, meaning-making and transmission of information pertinent to a topic of interest to the researcher. The study adopted the three phases of literature review methodology (Exploration, Interpretation and Communication) by Onwuegbuzie and Frels (2016) for the methodological framework. The seven research steps identified in the three phases for the study are as follows;

Step 1- Exploring beliefs and topics: Identifying a research topic of interest and the philosophical stance makes literature search more focused. The study seeks to understand why development control has failed in SSA and theoretically connect development control strategies to sustainable and resilient urban development. The research adopts the interpretivist-constructivist approach which seeks to interpret and construct knowledge based on what is known as well as exploring the potential of the unknown (Tuli, 2011).

Step 2- Initiating the research: The methodological selection of documents from academic database is very necessary in conducting a rigorous literature review (Osei-Kyei and Chan, 2015; Williams, 2018). For this study, initial screening and pre-search was carried out before the selection of the database to ensure reasonableness. Google scholar emerged as the appropriate option due to the wide coverage it offered for the search. However, Jstor and Science Direct were added to facilitate a comprehensive search. Journals were searched in the three databases in the areas of urban design, urban planning and sustainable urban development. The search was limited to peer-reviewed journals from 2008-2018. The following search schema was used for the search; TITLE-ABS-KEY ("development control" OR "development management" OR "urban development" OR "sustainable urban development" OR "resilient city").

Step 3- Storing and organizing information: All documents were downloaded and stored in separate folders for each database on the computer.

Step 4 – Selection and Deselection of information: The study is purely a literature review of secondary data from internet search. To ensure transparency and rigor in the literature search, a criterion was set for determining which source was relevant

to the review process. The data was sourced from internal and external sources. Thus, all journals that focused on development control and urban management of Ghana and SSA countries were selected. The rest were rejected. Out of the 157 journals that were assessed, 40 were found to be relevant to the study.

Step 5- Expanding the Search Using MODES: To avoid missing information and up to date reviews, Onwuegbuzie and Frels (2016) and Williams (2018) posit that relevant media, observations, documents, experts, and secondary data (MODES) should be added to make the review comprehensive. For this study, reviews from UN-Habitat and World Bank groups on urban development, sustainability and resilience on SSA and Africa as a whole were added to the selected journals. Additionally, Research Gate was used to locate experts who have researched in the subject area for inclusion in the list of journals.

Step 6- Results and Discussion: Data obtain from literature were discussed under the following themes; Contraventions of DC strategies for sustainable urban development and Opportunities for achieving sustainable and resilient urban development through building regulations.

Step 7- Presentation to Audience: Onwuegbuzie and Frels (2016) suggested four ways by which a literature review can be presented to an audience using the AVOW method; acting, visualization, oratory, written. Based on the philosophical stance and focus of the research, it was appropriate to present the findings in written format.

THEORETICAL OVERVIEW OF DEVELOPMENT CONTROL

Land has become more scarce and inaccessible for development purposes in cities because they are considered as the centre of all contemporary developments (Aluko, 2011; Jimoh et al., 2017; Ngetich et al., 2014). As a result, there is the convincing need to ration land supply, control and regulate its usage in order to ensure orderliness and avoid the nuisance of conflicting land uses as well as poor quality of infrastructural development (Jimoh et al., 2017;Ogundele, Ayo, Odewumi and Aigbe, 2011). Development control is considered as one of the most important planning instruments for effective management and planning of cities.

To properly grasp the meaning of development control, there is the need to understand the key words "Development" and "Control" in context of planning and management of towns and cities. Development may mean different things in different context but in planning and built environment sense, development as defined by the British Town and Country Planners Act of 1917 "is the carrying out of building operations engineering, mining and other operations in, on, under or over land; or other land". Keeble (1969) opined that development as defined by the Act should be extended to cover maintenance and alteration works as well as change in use of land or building. Therefore, the Black Law Dictionary as cited by Adeyeye, (2015) defined development as "a human created change to improved or unimproved real estate, including buildings or other structures, mining, dredging, filling, grading, paving, excavating and drilling; and also an activity, action or alteration that changes undeveloped property into developed property". Meanwhile, control was defined by Ogundele et al. (2011) as the exercise of power

over an area's jurisdiction in order to check development. Development control (DC) is therefore the planning instrument used by Local Planning Authorities (LPA) to regulate physical developments, plans and development proposals in accordance with goals and objectives depicted in spatial plans (Jimoh et al., 2017; Ngetich et al., 2016).

DC entails the regulation of land use and new buildings by ensuring that developers conform to approved building plans without any deviation from what has been approved. It is basically used by Planning Authorities to regulate and manage human activities especially in the built environment. It is therefore a statutory measure aimed at ensuring orderly development of land, sustainable development and the creation of conducive and healthy environment for living, working and recreation as well as other legitimate activities in human settlements. It is on the basis of this that planning authorities use DC as a means of approving or refusing development applications in their jurisdiction.

Historically, DC could be traced to the 19th Century where it was employed in New York (USA) to ensure effective master planning for certain areas through the use of different control mechanisms. It was legally used in Great Britain in 1933 through the enactment of Cap 54, the Town and Country Planning law. DCs have been used effectively by the developed countries to achieve orderliness and improve public health and safety of their cities (Memunatu, 2015; Jimoh, 2017). The Town and Country Acts are therefore considered as the ordinances that guide planning and development of towns and cities for many countries including SSA (Chigara et al., 2013).

Davidson (2002) as cited by Chigara et al. (2013) expressed concern that most of the instruments for town planning that governs development and planning in Africa are stereotyped on colonial laws. Although this was affirmed by a study by UN (2010), Chigara et al. (2013) posit that efforts are being made for improvement to suit specific requirements by individual African countries. For instance, although the Town Improvement Ordinance of 1863 which was applied to Lagos colony alone marked the start point of development control in Nigeria (Ogundele et al., 2011), other policies including Land Use Act of 1978, Urban Development Policy of 1992, Urban and Regional Planning Act 1992 and the Housing and urban development policy of 2002 have been enacted to control and manage development of land in Nigeria. In Kenya, the Physical Planning Act of Cap 286 enacted in 1996 was enacted to address challenges of the previous Acts on development control which focused on only gazetted areas (Ngetich et al., 2014). The situation is not different in Ghana where comprehensive development control started with the Town and Country ordinance (Cap 84, 1945), enacted to provide orderly and progressive development of land, towns as well as the preservation and improvement of amenities.

Countries in SSA have adopted various DC strategies because when used effectively, it ensures orderliness, improved city image as well as a healthy and aesthetic city (Aluko, 2011). In the wake of increasing call for proper management and safeguarding of the environment to arrest the ills of high cost and health implication of haphazard development, development control when deployed effectively can reduce these challenges to tolerable levels.

The value of development control to sustainable urban development

To ensure orderly development in the built environment, various countries throughout the world have adopted numerous strategies focused on sustainable urban development. According to Wheeler and Beatley (2014), the concept of sustainable urban development seeks to “create orderly development of cities and towns and improve the long-term health of human and ecological systems”. This explanation is an add-on to the initial definition of sustainable development by Butland commission as it seeks to assign equal prominence to both human and ecological systems. In addition to the establishment of a relations between man and his environment, the economic implications of this relationship must be accorded similar if not equal prominence.

In simple terms, Perveen et al. (2017) advanced that the concept of sustainable urban development is a contemporary paradigm that addresses the myriad of challenges in urban centres with the aim of attaining a desirable urban future without draining the natural resources. In the quest to minimize the impact of climate change, ensure equity and the creation of safe, sustainable and resilient built environment, many countries have adopted novel regulation and governance tools to control development in the built environment. Ultimately a sustainable building regulatory regime especially for urban areas will lead to the creation of sustainable cities and communities with minimal negative environmental impact, safe, sustainable, resilient and inclusive communities that offers equal opportunities and services for all in a cost effective and efficient manner (SDG 3 and 11). The sustainable management of urban growth is therefore very topical amongst scholars, urban planners and policy makers throughout the world. It remains relevant irrespective of the scale be it local or global. Wheeler and Beatley (2014) argued that local development patterns ultimately affect the prospects of long-term global survival, hence, there is the need to “think locally” but “act globally”. This is because local developments have ramifications on sustenance of the entire world.

As a result, many of the countries, facing rapidly growing urban population all over the world, are developing strategies to achieve urban sustainability especially in the built environment. However, the use and scope of contemporary urban planning and development concepts (including concepts such as the compact city, city cluster development, fringe city, corridor city etc as cited by Perveen et al. (2017)) in developing countries has been restricted to a ‘controlling one’ due to financial constraints (Johar, 2004). Consequently, it has been established in literature that the introduction of the element of ‘control’ is very critical in meeting sustainable urban development goals in the built environment of developing countries (Laubscher, 2011; Twum-Darko and Mazibuko, 2015). Although the control and management of growth in urban areas may vary in form, it essentially involves actions that guides the location, quality and timing of developments.

Generally, development controls are carried out to ensure efficient and effective land use that promotes wellbeing and safeguards public interest. Thomas (1997) classified the role of development control into two iterative purposes; “people purpose” and the “property purpose”. The people purpose is concerned with the satisfaction of the social and economic aspirations of the citizenry through land use in contrast to the property purpose which is focused on the coordination of

investments in land and developments by embracing the functional (quantitative adequacy and safety) and aesthetics considerations. Traditionally, this task forms a major part of the wider purpose of the town and country planning and can be categorized within the scope of town planning and environmental planning. (Thomas, 1997; 2013).

In an attempt to create a healthy urban environment, prevent conflicting land use and minimize the ills of unprecedented urbanization, statutory bodies (municipal / district planning authorities) in many countries have been tasked with the responsibility to prepare, implement, control and manage physical developments (Tasantab, 2016). Development control serves as the fulcrum on which town planning experts translate geometric forms to the ground through planning to engender harmonious balance for man and his environment (Ogundele et. al., 2011). These controls help in the creation of orderly and sustainable cities and guarantees that developments on the land do not compromise good practices by forestalling abuses and misuse of land (Ngetich et. al., 2014; Boob and Rao, 2014; Tasantab, 2016).

From the 19th century objective of controlling diseases and promoting public health, development control has evolved in the 20th and 21st century to include the use of proactive plans to regulate the built environment in accordance with specific strategies and objectives such as sustainability and resilience (Tasantab, 2016). Beside the use of nouns such as order, convenience, harmony, economy, health, safety and aesthetics to describe the role and relevance of development control in the creation of sustainable cities in literature, it is important that activities in the built environment are coordinated to ensure that decisions taken today will lead to the attainment of tomorrows objectives. From the ongoing discussion, it can be summarized that development control makes significant contribution to sustainable development through the protection of the natural environment, physical efficiency and cleanliness, protection against aesthetic nuisance, safeguarding of life and property as well as the original objective of safety and better health.

Development control strategies in sub saharan africa

Several strategies have been devised to control developments on land in SSA countries. They are mostly in the form of planning schemes and planning standards (Jimoh et al., 2017; Legal and Lacrosse, 2017; Ogundele et al., 2011; Owusu-Ansah and Atta-Boateng, 2016a). Planning schemes are used interchangeably with land use plans and development plans to represent statutory documents that make provisions for the use, development and protection of land in a particular jurisdiction. They are written documents, reports or plans; maps, drawings, diagrams, sketches etc that describe what is to be done on a particular site or area for harmonious co-existence (Jimoh et al., 2017; Lekwot et al., 2013; Ogundele et. al., 2011). Planning standards or regulations on the other hand are legislative benchmarks entrenched in building and zoning codes that are used as models of imitation during developments (Lekwot et al., 2013). Planning standards can be prescriptive or regulatory. Prescriptive standards require that developments are carried in accordance with a certain prescribed means or code and facilities provided at certain locations whereas regulatory standards provide benchmarks

that ensures that developments provided meets minimum standards such as daylighting, ventilation, setbacks, parking etc.

Despite the differences in the degree of success, there is the general consensus that land use and building regulation are the most widely used, efficient and effective contemporary tools for the management of cities and urban areas by both developed and developing countries (Baffour-Awuah et al., 2014; Matey, 2017; UN-Habitat and Africa Planning Association, 2013; World Bank, 2016). Thus, for countries in SSA and other developing economies, land use and building regulation remains the most effective and widely used tools for regulating developments in the physical environment.

As the most commonly used strategy, zoning seeks to regulate the use of land by specifying permitted and prohibited use of land. In simple terms, land use zoning answers the question of "what is to be built?". Despite the expansive use of land use zoning to achieve the objectives of urban planning, it has also been the subject of intensive criticism and analysis. Zoning has long been criticized for been used as a tool for exclusion, interfering with private property, driving housing cost and most recently as a tool for economic inequality and a setback for economic growth (Been et al., 2012). The lack of compliance by developers and the sloppy application of zoning regulations by planning authorities in SSA countries has been identified as a major limitation for its usage for sustainable and resilient development. Consequently, restrictive covenants, nuisance rules and fines have been proposed long ago as alternatives to zoning regulations (Owusu-Ansah and Atta-Boateng, 2016). That notwithstanding, land use and spatial planning laws are continually regarded as an effective means for control of development. However, a study on the state of planning in Africa revealed that most of these policies are yet to be approved by the legislature and in instances where they have been approved, actual implementation remains low (Goodfellow, 2013; UN-Habitat and Africa Planning Association, 2013; UN-Habitat, 2015).

The British Town and Country Planning Ordinance (TCPO) as inherited is still in place in a significant number of SSA countries. For instance, the TCPO of 1945 (CAP 84) and TCPO (1946) for Ghana and Nigeria respectively were modeled after the British planning principles (Owusu-Ansah and Atta-Boateng, 2016a). According to UN-Habitat and Africa Planning Association (2013), the use of these dated approaches and delay in approving newly formulated spatial planning and land use policies demonstrates the shortcomings of SSA countries in responding appropriately to new realities and complex nature of emerging urban challenges. Although some countries in SSA have recently introduced new and forward looking legislation for land use and spatial planning, the British planning systems and approaches forms the legal basis for most of them (UN-Habitat and Africa Planning Association, 2013; Owusu-Ansah and Atta-Boateng, 2016a). These approaches, however, have been criticized for not achieving the desired results especially in developing countries (Goodfellow, 2013; Owusu-Ansah and Atta-Boateng, 2016). In Kenya for instance, the Land Planning Act Cap 134 of 1948 was repealed in 1996 through the enactment of the Physical Planning Act to address the deficiencies inherent in the colonial statues (Ngetich et al., 2016)

Ghana's land use planning system like most SSA countries is a vestige of colonial British TCPO as indicated earlier. The current planning regime is the Town and Country Planning Ordinance (Cap 84) of 1945, now amended as Land Use and Spatial Planning Act (LUSPA), 2016 (Act 925) and the Local Governance Act, 2016 (Act 936) as amended. As a requirement in the LUSPA, all urban areas are covered by a Town Planning Scheme whereas the Local Governance Act mandates the establishment of Assemblies for the decentralization of the implementation of all planning and development policies (Ghana Statistical Service, 2014). These two laws are assisted by the National Building Regulations, 1996 (L.I. 1630) and a plethora of legislative instruments such as the National Development (System) Act, 1994 (Act 480), Lands Commissions Act, 2008 (Act 787), Volta River Development Act, 1961 (Act 46) as amended, Tema Development Corporation (Miscellaneous Provisions) Decree, 1966 (NLCD 108) and Bui Power Authority Act, 2007 (Act 740) etc) which may be applicable depending on the type of development to be undertaken (Alhassan, 2018; Baffour Awuah et al., 2014; Ghana Statistical Service, 2014).

Aside land use zoning or planning, Building Regulations and Codes (BRC) have been identified by many authors as an effective and efficient means of achieving the objectives of development control. Although building "regulation" and "code" may be differentiated semantically, some authors such as Laubscher (2011) as well as Twum-Darko and Mazibuko (2015) fail to distinguish one from the other by placing emphasis on the object and not the wording. According to Laubscher (2011), the building regulation or code can be defined as a statutory law which regulates the construction, alteration, maintenance, repair, and demolition of buildings and structures. The building regulations for many SSA countries just like the land use planning laws are rife with colonial statutes. Consequently, the regulations have not made the necessary impact since the transfer of statutes without specific adaptation to socio-economic and political context creates an implementation gaps (Baffour Awuah et al., 2014; Casa Associati, 2012; Owusu-Ansah and Atta-Boateng, 2016; World Bank, 2016).

In Ghana, the National Building Regulation (L.I 1630) had its genesis in the Town and Country Planning Ordinance (CAP 84) of 1945. Contrary to best global practices, the regulation has been in use for over 22 years without any revision. Apart from its mandate of meeting the health, safety and welfare of people, there were no provision for contemporary global issues such as climate change, sustainability and resilience. Ametepey et al., (2015) and Casa Associati (2012) had long advocated that the review of the regulations should include such emerging areas and adequate provisions for energy efficiency, accessibility and fire resistance. Some of these provisions have been catered for in the Ghana Building Code which was launched in November 2018. It remains to be seen if the provisions and their mode of implementation in the GBC will be fit for purpose and easily implemented. It must be noted that Ghana has a National Building Regulation and Ghana Building Code (GBC). According to Casa Associati (2012), the code serves as a "guiding document for reference by development authorities whilst the NBR derives its mandate from Act 462". A cursory look at the code shows attempts towards the harmonization of NBR with the GBC which was first developed by the Building Road Research Unit in 1988. That notwithstanding, the current NBR must be amended to include some new provision in the GBC. Both the GBC and NBR sets out the

minimum acceptable standards that regulates the planning, design, construction, operation and maintenance of buildings with the overarching aim of providing a reasonable level of safety, public health and welfare to occupants in a building.

Taking the discussion further, the granting of development permit, a major provision in building regulations and codes promotes consistent spatial development and structural integrity of new construction and extensions, alteration or redevelopment of buildings (Owusu-Ansah and Atta-Boateng, 2016). Although development permits are used to control building coverage ratio, densities, material selection, setbacks, easements, parking etc, the mere granting of these permits without enforcement is no guarantee to safe and sustainable buildings (see Amadu, 2014; Botchway et al., 2014; Ogundele et al., 2011; Tasantab, 2016). The incomplete monitoring and enforcement of building regulations and codes hinder sustainable and resilient development in SSA countries (Daye et al., 2018).

Contrary to the significant progress made by developing countries in achieving sustainable and resilient developments through matured building regulatory regimes, middle and lower income countries are saddled with numerous challenges (UN-Habitat, 2015; World Bank, 2016). Studies by various authors (Ametepey et al., 2015; Botchway et al., 2014; Casa Associati, 2012; Jimoh et al., 2017; Ngetich et al., 2016; Ogundele et al., 2011) reveal widespread violation of building regulations in SSA countries. Although these contraventions are not immune to developed countries, their prevalence in SSA affects the functionality of society (Jimoh et al., 2017) thereby threatening the creation of sustainable cities (African Institute for Development Policy, 2012; World Bank, 2016).

RESULTS AND DISCUSSIONS

This section focusses on the results and discussion on the major weaknesses identified in literature that hinders the use of the two main strategies (land use and building regulations) that are commonly deployed in SSA and their potential usage for sustainable development in SSA.

Contraventions of DC strategies for sustainable urban development.

Although a significant number of SSA countries have formulated planning laws and have building regulations in place, their implementation is very poor (UN-Habitat and Africa Planning Association, 2013; UN-DESA, 2015; World Bank, 2016). Comparatively, land use and building regulations has been implemented with little degree of success in SSA countries as against developed economies. The implementation of development control strategies in urban areas in SSA is fraught with numerous challenges with far reaching socio-economic and spatial implications such as poor housing, squalid environmental conditions, incompatible use, congestion, exposure to chronic risk and increased impact of disasters (Aribigbola, 2018; Owusu-Ansah and Atta-Boateng, 2016; World Bank, 2016).

Many researchers have identified several reasons why development control has not made the expected impact in SSA countries. In most instances, the factors are location specific and differ slightly from country to country. For instance, Alabi (2010) combined Ahp and Delphi techniques to prioritize ten (10) factors that had resulted in the failure of urban development control in Nigeria. Although all ten

factors were significant, three factors were identified to be the most significant factors that needs to be prioritized. The seven major constraints identified from the review of literature which is common to most SSA countries are discussed below.

Lack of awareness of DC strategies

In SSA countries, lack of awareness is one of the major reasons why development control strategies are violated. In the city of Akure, Nigeria, 79.5 percent of the people were not aware of the master plan that guides the development of the city. There was clear evidence to suggest that the Planning Authorities had failed to involve the people in planning decisions. The absence of public enlightenment was identified as the second most significant factor to be prioritized if the challenges with the contravention of DC was to be resolved in Nigeria (Aribigbola, 2018). Jimoh et al. (2017), established that the level of compliance with DC regulations was higher amongst persons with higher education compared to persons with lower level or no formal education. Researchers such as Botchway et al. (2014) and Jimoh et al. (2017) maintain strongly that Planning Authorities can improve the effectiveness and efficiency of development control by creating awareness and educating stakeholders on the need and relevance of permit approval prior to construction and the permit process itself.

Inadequate and poor funding of planning authorities

In many SSA countries, the Planning Authorities who are the frontliners in DC are faced with difficulties in the initiation of plans and development schemes for sustainable and resilient development due to poor and inadequate funding. According to Aribigbola (2018), government in developing countries cripple their Planning Authorities by failing to budget consciously and adequately for activities related to land use and city planning. In some instances, governments allocation to these departments are able to cover only staff salary and emoluments. World Bank (2016) opines that beyond the granting of development permit, the low level of funding makes it challenging for Municipal Authorities to cover expenses on site inspection, monitoring and evaluation of DC activities. They are also unable to attract and retain the qualified personnel due to their low levels of compensation given a competing private sector with better offers than the public entities (Daye et al., 2018). Again, Jimoh et al. (2017) established a link between income levels and compliance to regulations. In instances where income levels are low, violation of DC regulations were high and vice versa. Thus, people are more likely to circumvent DC regulations given the limited resources at their disposal. Judging from the above, the effectiveness of DC for sustainable and resilient development in SSA requires a strong financial base for the development and implementation of integrated programmes and policies (African Institute for Development Policy, 2012). That said, the limited resources available to SSA countries can be deployed efficiently to minimize the dangers and risk of unregulated development.

Poorly formulated regulations

As a measure to achieve effective regulatory governance, Organization of Economic Corporation and Development (OECD) countries were mandated to check their current regulations and design new one to meet contemporary demands such as sustainability and resilience (OECD, 2010). As indicated earlier, DC regulations of SSA countries are based on colonial laws. Although these laws may be relevant, the absence of up-to-date and dynamic regulations remains a

major setback in SSA countries (Aribigbola 2018; Owusu-Ansah and Atta-Boateng, 2016b). That said, poorly formulated and poorly communicated building regulations compromises both the enforcement by authorities and compliance by developers.

Inordinate delays and bureaucracies

In addition, inordinate delays and bureaucracies were identified as one of the major setbacks to DC in SSA countries. It was established that DC regulations in SSA countries are cumbersome and complicated (Alabi, 2010). As a result, developers ignore the many unsuitable organizational structure and procedures to build without the necessary approval. The unnecessarily complex, costly and time consuming procedures to obtain land titles, development permit and habitation permits is a hindrance to code compliance (World Bank, 2016).

Lack of capacity of planning authorities to enforce land use and building regulations

From literature, land use and building regulations in SSA cities are ineffective as a result of weak implementation and enforcement regimes. Although a survey by Commonwealth Association of Architects (2018) and World Bank (2016) suggest that the regulations in general may seem comprehensive and at least fit for purpose, the absence of sufficient frameworks for enforcement of these regulations renders them ineffective. From Figure 1 although respondents agree that at least their regulations are about 70% fit for purpose, the effectiveness of the regulations in terms of implementation was 40 – 43 %.

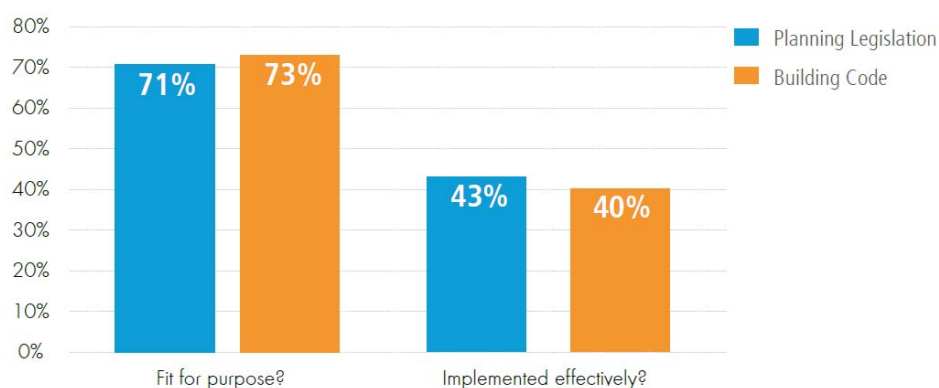


Figure 1: Effectiveness of Planning Legislation and Building Codes

Source: CAA (2018)

According to Daye et al. (2018), municipal authorities in developing economies operate under tight financial budgets and limited resources that makes it difficult for them to enforce their regulations. The failure to mobilize private sector resources undermines the capacity of SSA countries for effective implementation of DC regulations as they are saddled with severe backlogs in planning, development permitting and inspections(World Bank, 2016). Studies on SSA (Ametepey et al., 2015; Aribigbola , 2018; Botchway et al., 2014; Duah, 2013; Ngetich et al., 2016) highlighted the inadequacy of qualified personnel for DC code administration in SSA countries. According to World Bank (2016), the sole reliance on inefficient public resources in developed countries deprives them of the benefits of collaboration with private built environment professionals who could offer more

productive, innovative and effective code compliance systems. An extensive study by Daye et al. (2018) established that private sector involvement in building regulatory governance has a direct positive impact on the achievement of regulatory goals. That notwithstanding, it is recommended that conscious efforts must be made to safeguard the high cost and propensity for conflict of interest associated with private sector participation in regulatory governance.

Corruption in the management of urban growth and development

Corruption has been identified as a serious bane in the management of urban growth and development of SSA countries (UN-Habitat and Africa Planning Association, 2013). The construction industry is the most corrupt sector of the world. It is on record that about 83% of deaths from collapse of buildings during earthquakes occur in countries with high anomalous corruption (Bilham and Ambraseys, 2011). In a study by Ametepey et al. (2015) on the assessment of factors affecting the implementation of NBR, corruption was ranked as the most significant factor by local authority staff, building practitioners, and building owners. Although Land and its development is considered a vital resource for the sustenance of life in SSA, it is heavily prone to the menaces of corruption (Transparency International, 2014). The different streams of corruption linked to government projects, theft and circumvention of regulations undermines good regulations, quality construction and maintenance (World Bank, 2016). Corruption seems to be an intractable canker and a threat to efforts geared towards robust building regulatory compliance in developing countries (Bilham and Ambraseys, 2011; World Bank, 2016). If governments are able to minimize corruption, there would be enough resources to ameliorate the challenges of inadequate funding in regulatory governance

Low uptake of information communication technology

Although slow adaptation to solutions offered by Information and Communication Technology (ICT) was not captured in literature as a constraint, the striking recommendation for its usage in SSA countries by Botchway et al. (2014), Ngetich et al. (2016), Somiah and Aidoo (2015), Twum-Darko and Mazibuko (2015) and World Bank (2016) gives clear indication that its absence is a major challenge for effective implementation of DC regulations. Out of the 19 countries identified in 2015 for using electronic platform for administration of building code and development permitting, only 2 out of 3 countries in SSA have an operational online platform (Doing Business Database, 2015).

Opportunities for achieving sustainable and resilient urban development through building regulatory governance

Member states of the United Nations in 2015 adopted an agenda for sustainable development that included 17 ambitious Sustainable Development Goals (SDGs) with targets aimed at transforming the World by the year 2030. Particularly related to the sustainability and resilience of the physical environment are SDGs 3 and 11. Goal 3-Climate Action, seeks to strengthen resilience and adaptive capacities of member countries against the impact of climate change, risk and natural disasters. Goal 11- Sustainable Cities and Communities also seeks to make cities and human settlement inclusive, safe, resilient and sustainable (UNDP, 2019). In an effort to achieve these goals, member states accepted the Sendai Framework for Disaster Risk Reduction (DRR) which postulates bold and coordinated efforts aimed at

reducing risk in the built environment. The framework makes ample reference to the use of land use and building regulations for sustainable and resilient urban development. It has been established earlier that these tools are the main strategies used by SSA countries for development control. According to the World Bank (2016), these regulations when deployed efficiently and effectively would reduce large and rapid-onset risk like earthquakes, cyclones etc. as well as more contained but deadly risks such as fires and spontaneous collapse of buildings.

Compared to land use planning, building regulations have received little attention in regulatory, urban planning and management literature (Visser et al., 2010; Van der Heijden and Jong, 2013; Twum-Darko and Mazibuko, 2015; World Bank, 2016). Despite the gap in success for developed economies with more advanced and matured regulatory regimes, developing countries have also made incremental improvement in sustainable development, risk reduction and hazard adaptation through building regulatory systems. It is no fluke that there is a broad consensus by many countries on the crucial role of building regulatory governance in reducing underlying risk of developments before their management if disaster occurs.

Governments throughout the world have the ultimate responsibility for the effective leadership and oversight of building regulatory governance (OECD, 2010). Van der Heijden (2014) identified three major governance problems that hamper meaningful urban sustainability and resilience. He first highlighted on the slow reaction from government to sustainability and resilience challenges. This is attributed to the inordinate delay and bureaucracies in the implementation of regulations. Secondly, new regulations introduced by government are mostly inconsequential in that cities especially in developing countries develop faster for new legislations to become meaningful. Thirdly several “wicked” market barriers such as cost, conflicting interest and accountability competes with the benefits of resilient and sustainable regulations by government.

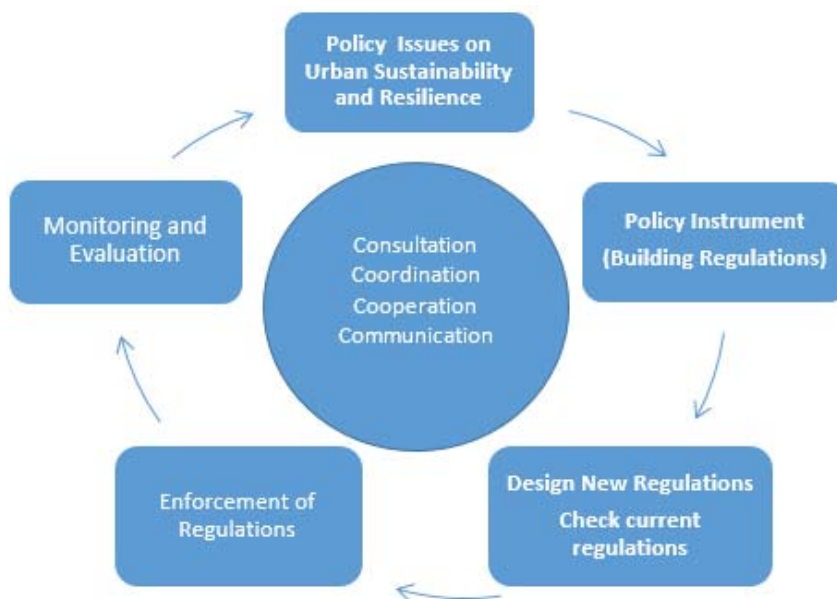


Figure 2: Achieving effective regulatory governance
Source: Adapted from OECD (2010)

A regulatory cycle developed by OECD (2010) as adapted presents some solutions to help government achieve regulatory goals. From Figure 2, the success of the cycle is dependent on how governments can close the loop and ensure a stronger connection between the design, implementation and evaluation phases of regulatory governance. Preliminary studies by Botchway et al. (2014), Ngetich et al. (2016), Agyeman et al. (2016) as well as Twum-Darko and Mazibuko (2015) focused on building permit acquisition but the granting of building permits does not necessarily guarantee safety of buildings (World Bank, 2016; Ghana Institute of Architects, 2012). Although no government is strong in all aspects of the cycle, at the centre of it is the 4Cs (consultation, coordination, cooperation and communication) which are prerequisites for successful regulatory governance in the built environment (OECD, 2010).

In addition to the above, the discussion below highlights some of the factors identified from the review of literature which favours the use of building regulatory governance for achieving sustainable and resilient development in SSA.

Private sector participation in enforcement of regulations

Regulatory governance in many sectors of SSA countries is a bipartite process that involves government agencies as the regulator and the citizenry as regulated entities. In recent times, such direct government intervention has incessantly been criticized for being unable to achieve meaningful urban sustainability and resilience goals on time and a scale capable of addressing the major problems caused by climate change (Gunningham and Sinclair, 2017; van der Heijden, 2014). The implementation of building regulations must go beyond just the state by making use of third parties who may act as surrogate regulators. This is because third party participation in regulatory reviews, inspection and enforcement yield more efficient and better quality control compared to traditional mandatory governance (Daye et al., 2018; Gunningham, 2015; UN-Habitat and Africa Planning Association, 2013; van der Heijden, 2014). In this regard, Twum-Darko and Mazibuko (2015) insist on the redefining of the roles of various stakeholders involved in the building regulatory governance in developing countries.

Use of ICT to advance sustainable and resilient development

The world is a global village now thanks to technology. Its introduction has brought about a lot of innovation, simplicity and high output in various sectors of the world. The building industry is not immune to this development. The increased availability of technology such as GIS, GPS and cell phones can be used as a clout to advance sustainable and resilient development in SSA. Authors such as Botchway et al. (2014), Agyeman et al. (2016) as well as Twum-Darko and Mazibuko (2015) have proposed the use of ICT to minimize the bureaucracies and delays and ensure effective delivery of development permits.

Urban growth management systems to be synchronized with existing regulations

The integration of new forms of urban growth management with provisions for contemporary issues such as climate change, sustainable and resilient development into existing or new technologies is crucial for SSA countries. The once and for all regulatory policies with no provision for periodic revisions will ultimately result in the governance challenges identified by Van der Heijden (2014).

Review of regulatory mechanisms to meet contemporary trends and technology remains very crucial to the meeting specific regulatory goals such as sustainability and climate change adaptation. UN-Habitat and Africa Planning Association (2013) has emphasized that the adoption of new systems for managing urban growth and development must be in consonance with available local resources, capacity, context and prevailing trends.

From the ongoing discussion and the challenges that have been identified as barriers to the use of building regulations for sustainable urban development, this paper proposes smart regulation for use by Ghana and countries in SSA. Smart regulation is a more flexible, imaginative and innovative forms of regulatory governance which apart from integrating new policies to meet contemporary demands, seeks to harness not just governments but also business and third parties for effective and efficient implementation of building regulation (Gunningham and Sinclair, 2017).

CONCLUSION

The purpose of this paper was to understand why development control strategies have not been effectively deployed for sustainable and resilient urban development in SSA. From the review of literature, it has been established that land use planning and building regulations are the most effective strategies that could be leveraged for achieving sustainability and resilience goals in SSA. In particular, the paper emphasized the crucial role of building regulation or code implementation which hitherto had not received adequate attention in regulatory literature in providing safe and sustainable buildings. Again, the paper agrees to the unique role of building regulatory systems in shifting focus from disaster management to disaster risk reduction.

Seven major barriers were identified in literature as contraventions that could limit land use and building regulatory systems for achieving regulatory goals. They include lack of awareness, inadequate and poor funding of planning authorities, poorly formulated regulations, inordinate delays and bureaucracies, lack of capacity of planning authorities, corruption and low uptake of ICT systems. It is proposed that smart building regulatory system which embraces innovative, flexible and imaginative approaches that maximizes the use of private sector and third parties as surrogate regulators in the implementation of regulations for sustainable and resilient urban development.

Practically, governments in SSA countries must put measures in place to rectify the ineffectiveness and inefficiency in their building regulatory regimes. There is the need to prioritize urban sustainability in order to ensure the safety and well-being of the urban populace. Strict adherence to building and land use regulations and an efficient enforcement regime for the building industry will be very beneficial to many countries in SSA. Theoretically, having in mind that there are no perfect systems and the existence of difficulties in extrapolating findings from developed to developing economies due to differences in context, future research should focus on how smart regulations could be harnessed to achieve sustainable and resilient urban development in Ghana and SSA countries.

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