



REVIEW AND CHALLENGES OF IMPLEMENTING SUSTAINABLE BUILDING CONSTRUCTION POLICIES, LAWS AND REGULATIONS IN DEVELOPING COUNTRIES

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ABSTRACT

There is a recognised need for effective implementation of sustainable building laws and regulations in response to building failure, the global energy shortage and climate warming. The aim of this paper is to review and contrast the status and extent of implementation of sustainable building policies in selected countries (England, Nigeria, Ghana, Cameroon and South Africa). It also aims at identifying the trends, gaps and good practice in implementing Building Regulations. In a case study like exercise, the authors carried out a desktop review of building laws, regulations and policies of the selected countries and conducted three focus group discussions with 19 key stakeholders of the building construction field in Cameroon. The results analysed using the thematic method illustrate that although developed countries have moved to the development, adoption and effective implementation of innovative building codes, developing countries still lack behind and building policies, laws and regulations developed in those countries are not effectively implemented. Implementation of these policies and strategies is generally rated as being poor. The reasons highlighted for this include lack of accountability mechanisms, poor or inadequate processes, lack of policy coherence, lack of collaborative framework, resistance to cultural change and qualitative and quantitative understaffing. We conclude that contextual realities and local cultures significantly affect not only the development of building policies but also their implementation. Good practices learnt from developed countries are noted and suggestions including reinforcing the role of government in policy coordination, establishment of strong policy processes and effective collaboration between stakeholders and development of an effective building control system to enhance the implementation of building laws and regulations are made. The review focuses on policy implementation and does not consider aspects of policy planning and development even though they impact upon the implementation. The review highlights the best practices for implementing building policies, laws and regulations and gives a food for thought for policymakers and practitioners. It sets the ground for the development of a global implementation framework dedicated to building construction laws and regulations for developing countries.

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INTRODUCTION

Over the past decades several incidences of building failures and fire outbreaks have been observed worldwide and the trend is continuing. Amongst other reasons advanced is cited the non-implementation or non-adherence to building laws and regulations. It is observed that where building policies, laws and regulations have been developed following the traditional policy development cycle and where they are specifically tailored to the local customs and needs they have better chances of being adhered to by the populations. Several theories about strategies that could be applied to achieve

greater implementation of a policy or legal and regulatory instrument are advocated. One of the most prominent policy one known as “Stick-Carrots-tambourine” according to which combining sticks (regulations), and carrots (incentives), with tambourines (measures to attract attention such as information or public leadership programs) would increase the chances of achieving the set policy goal (Warren 2007 in UNEP SDCI 2007). Meeus and Delarue (2011) who also sustain that view submit that whatever the policy or regulation that is being developed, it would be better implemented where the three specific ingredients are used together as implementation strategies. In the context of building construction, the idea would be to have building laws and regulations (the stick) to ensure that there is a minimum standard to which buildings must be constructed; Because

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there is an international agenda on green buildings for the fight against global warming and energy shortage, the policymaker must in addition take appropriate step to ensure that anybody who is complying or exceeding the minimum standards set gets a reward (carrot). That could be in the form of fiscal benefits, subsidy or grants. Finally, the third ingredient (tambourine) will mainly be driven by the government and local authorities who should take appropriate steps to sensitize the populations and make transparent the benefits of building sustainably. This will typically be reinforced by the introduction of recognition badges such as energy performance certificates and other certifications. The chaotic situation of building failures and fire outbreaks persisting in various countries push us to review the existing building laws and regulations in various jurisdiction in order to establish their implementation strategies and to holistically assess whether those strategies are appropriate and if not why. To achieve that aim we carried a desktop review of building laws and regulations in England, Nigeria, South Africa, Ghana and Cameroon and the outcome of the study is summarised in part 1 of this paper. Drawing from the desktop review of building policies and regulations part 2 of the paper presents the finding of a case study conducted in Cameroon to analyse the causes of non-implementation of building laws and regulations in developing African countries and what is subjectively perceived by stakeholders of the building construction field as solutions of the causes identified.

Desktop review of Building laws and regulations and their implementation strategies in selected countries

In this part we present the desktop review of building laws, regulations and policies of several targeted countries focusing on their policy and regulatory framework before analysing their respective implementation strategies. We start with England, followed by South Africa, Nigeria, Ghana and Cameroon respectively.

England

England is one of the front runner and international leader on the promotion and implementation of safe building laws and regulations.

Overview of the regulatory and legal framework

The current legislation in the England and wales is the Building Regulations 2010 (SI2010/2214) made under specific sections of the Building Act of 1984. Alongside the above main instruments regulating the building construction field also operates the International Green Construction code 2012 which aims at enhancing sustainability. The sustainability side is reflected through the implementation of the European Energy Performance of Buildings Directive (EPBD) passed in 2002 and reviewed in 2012 (inserted in the English's building regulations as Part L).

The aim of the Building Act 1984 is to ensure that the health, welfare and convenience of persons living in or working in or nearby building is secured, whereas, the purpose of building regulations is to set the minimum standards of design and building work for the construction of domestic, commercial and industrial buildings. Overall, Building Regulations ensure that new developments or alterations or/and extensions to buildings are carried out to an agreed standard that protect the health and safety of the people in and around the building. (Ray Tricker, 2005).

The Building Regulations 2010 is a comprehensive instrument supported by separate documents called the Approved Documents which contain practical and technical guidance for meeting the requirements of schedule 1 and Regulation 7 of the Building Act 1984. Those regulations are complete in detail and procedure and deal with all aspects of the building construction cycle from the planning permission to occupancy. A thorough review of those Regulations reveals that they have been designed in a thoughtful manner and that the implementation stage was duly considered by the policymakers at the policy conception stage. That is reflected by the fact that the BR 2010 provide guidance for administration that makes it very easy for any user to apply to any building construction in order to be compliant.

Implementation strategy

The strategy adopted by England and Wales for effective implementation of building laws and regulations draws from three tenets of motivation (Carrots, Sticks and Tambourines) advocated in all policy school of thoughts (Warren 2007 in UNEP SCDI 2007 and Meeus and Delarue 2011) and consists in the use of (1) Legal and Regulatory Instruments (sticks) through technology-based standards (i.e mandatory standards with emphasize on the design and use of preventive methods); Performance-based standards (i.e mandatory standards which set the goals it must achieve, focusing on the outcome and avoiding overt prescription and non-compliance fees such as payments imposed under civil and criminal law (Sections 2, 7, 35, 36, 38 and 112 of the Building Act 1984) on those who do not comply with building regulations and environmental requirements); (2) Financial and economic instruments (Carrots) such as payments for the cost of collective services primarily used for the financing of local authorities and third party building controllers, and environmental subsidies such as soft loans and grants to those using sustainable technologies such solar energy in their building construction; (3) Information tools (Tambourines) such as Public information campaign reflected by the Environmental labelling schemes which provide information on the environment-related performance of products which is certified by third parties or the producers themselves according to predetermined criteria and Research and development tools characterised by support for the research and development in the private and public sectors through the financing of the activities of the national research council.

Those strategies for effective implementation of existing laws and regulations are traduced in practice by the sheer number of penalties, incentives and other mechanisms for improving compliance, insertion of penalties for non-compliance with energy provisions in codes, fines and rejection of building permits. In addition, stakeholders are encouraged to go beyond minimum required performance standard and for example building constructed to achieve net carbon emissions of zero over the year are exempt from the stamp duty tax.

The review also reveals that to ensure that the building laws and regulations are fully implemented, thorough building control services conducted by both the local council and approved third party agencies operate for the technical and physical side of the building construction and material used whereas for the energy part the country has developed a software for compliance checking. That software is known as Standard Assessment Procedure (SAP) for dwellings with a

total floor area up to 450m² and Simplified Building Energy Model (SBEM) for public buildings such as schools, churches, airports, offices and others.

Beyond the legislative and regulatory framework, the policymakers recognise that to achieve the aim and effectively implement the designed policies and regulations for building to be compliant and perform better, the quality of building materials is central. As such, in order to assure design performance of buildings strategies have been developed for all building materials to be tested and certified as meeting the published specifications. A network of accredited materials testing laboratories necessary to certify the quality of building materials as well as several deeply assessed self-certification methods have been developed to support the initial policy and regulations. This strategy works in concert with the other implementation ingredients identified above to ensure an effective implementation of building policies, laws and regulations in practice.

Furthermore, the policymakers in England recognise that local authorities are in the front line of risk prevention in planning and building construction and as such have taken adequate ground setting strategies to provide them with adequate tool for success. For instance, staff training and adequate budget are made available for the smooth running of these services who take charge of planning and control of all development. Appropriate academic programs targeting the training and qualification of planning officers are validated and included in various university programs.

Beyond the policy developed, adequate steps are taken to enforce the legislative and regulatory provision related to breaches in practice. For instance, there were 219 prosecution cases in 2016/17, resulting in 206 (94%) with a conviction for at least one offence and almost £16 million in total fines as revealed by the HSE enforcement data.

Finally, in addition to those strategies and implementation methods, the country has also taken the lead in recognising that successful implementation of laws and regulations cannot be achieved without adequate and relevant processes and as such it developed and deployed the RIBA plan of work aiming at setting the best practice within the building construction field. That tool provides guidance at the main building construction phases from the pre-conception and design phase to post occupancy. That instrument is periodically reviewed and the current version was last reviewed in 2013. Arguably the level of implementation of laws and regulations of the building sector has been enhanced by the stakeholders' adherence to the recommendations of the RIBA plan of work. In the same light effort is made for the planning permission process to be clear, transparent and foreseeable whereas the same applied to the processes involved during the building construction phases. For instance, the various inspection stages of any single project are known in advance and agreed with the project owners well in advance. The cooperative framework between all stakeholders is firmly established with clear data accessible to all concerned.

Also, it is worthy of a note to highlight that in this jurisdiction the policy development and implementation strategies applied by the policymakers, are a mixture of Top-down and Bottom-up methods judging by the law development strategy. Indeed prior to developing statutory or regulatory instruments and

framework, consultations with stakeholders are initiated at streams before the white paper is finally drafted for the process leading to the legal or regulatory promulgation of the instrument to kickoff.

The strategies used appear to yield positive outcome and meet the policymakers' objective as all regulations and laws in the building sector are well embraced and implemented by all stakeholders. That is evidence by the minimum level of building collapses/ fire outbreaks in the country over the past 5 years (196 fatalities over five years leading to 2017). Indeed, statistics of the HSE show that for the level of injuries and death caused on building site has been reducing steadily which implies that building regulations have been implemented at higher rate. The successful implementation rate is also traduced by the reduced level of energy consumption in building (household consumption) between 2010 and 2016 as shown by the data collected by BEIS ECUK as shown in the below figure.

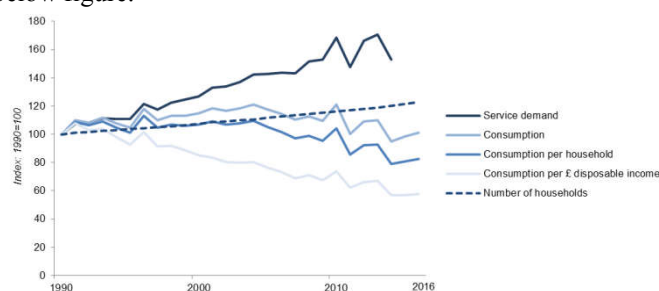


Figure 1 Factors impacting on domestic consumption (source BEIS ECUK).

South Africa

A desktop review of the building laws, regulations and policies of the Republic of South Africa suggest that amongst the African countries below the Sahara, South Africa has arguably the better organised building construction system. Drawing from its strong history of environmental protection, which is indeed enshrined in its constitution in Chapter 2, the country has clear building policies, building regulations and standards. As early as in 1977 the country developed and adopted a global agenda on green building and it has been accommodated within the country's institutions and daily practice.

Overview of the regulatory frameworks

The South Africa republic has set minimum building standards encapsulated into its National Building Regulations and Building Standards Act (No.103 of 1977) amended in 2011 (NBRBS hereafter) in order to incorporate the Energy use in buildings within the existing building regulations. In the perspective the South African National Standard (SANS) was also introduced in 2011 and supports the application of the National Building Regulations. The SANS is based on the international building code model and therefore fully meets the sustainable building code criteria. SANS determines the minimum legal standards for energy efficiency in buildings per climate zones and rules for environmental sustainability. It is worth noting that those standards are not compulsory but they merely set the goals the country should be aiming at to achieve its sustainability targets. The Department of Building Control of the local municipalities has the overall implementation of those standards in practice. To ensure that the regulations are effectively deployed the South African Bureau of

Standards (SABS) is entrusted with supporting the regulatory framework by ensuring a uniform understanding and implementation of the NBRBS at the national level. In the execution of that duty in 2011, they introduced the South African National Standard 10400 (SANS 10400), which sets out the minimum standards for building construction. The application of these rules is not yet mandatory. It is the responsibility of the building owner to take all appropriate steps to ensure that his building satisfies the requirements of the regulations.

In furtherance of the green building policy, an energy part has also been developed and added, and is referenced as Part X and Part XA. Part X deals with environmental sustainability, whereas Part XA deals with energy use in buildings.

As to its nature, the South African building regulations can be defined as a mixture of prescriptive and performance based given the provisions of Paragraph 4.2.1(a) of the SANS 2004 (Performance route to prove compliance and Paragraph 4.2.1(b) (for the prescriptive route to prove compliance).

Below is an overview of the South African building regulatory framework.

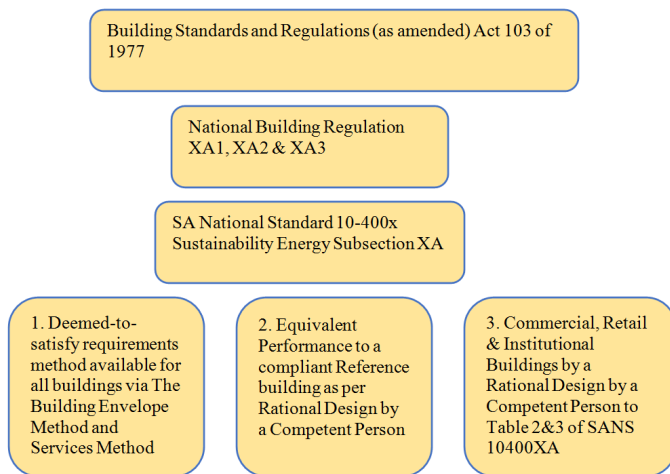


Fig 2 Overview of the South Africa building regulatory framework

Overall in term of policy, the government of South Africa also has a number of policy and strategy documents related to sustainable development and which address the role of buildings including: (1) Energy Efficiency Strategy of the Republic Africa (2005); 2) National Climate Change Response Strategy for South Africa (2004); National Framework for Sustainable Development in SA (2008). The below table summarises the country’s building policies including laws, regulations and standards as well as their aim.

Table 1 Overview of the regulatory frameworks that are applicable to the building industry in South Africa. These comprise legislation, national policies and industry standards (Adapted from Greencape Market Intelligence Report 2014: Greening South African Buildings)

Year	Legislation/policy/standard	Objectives
		Legislation
2008	National Building Regulations and Building Standards Act, Act 103 of 1977 as amended in 2011	Outlines a set of functional guidelines for anybody building any type of structure in South Africa.
		Policies and government strategies
		Social housing policies
2004	Breaking New Ground (BNG) - a comprehensive plan for the development of sustainable human settlements	Outlines an extensive plan to promote densification and integration of urban areas through enhanced regulatory mechanisms, planning functions and financial incentives. Objectives Include Using housing provision as a job creation strategy

		Ensuring that property can be accessed by all as an asset for wealth creation and empowerment Accelerating growth in the economy Supporting the functioning of the entire single residential property market to reduce duality within the sector by breaking the barriers between the first economy residential property boom and the second economy slump Using housing as an instrument for economic development.
2005	Social Housing Policy for South Africa	Provides an overview of the national housing programmes for the development of social housing in South Africa. (Refer to appendices for an overview of social housing programmes.)
2009	National Housing Code	Outlines the national norms and standards for the construction of standalone residential dwellings, which apply to all units built through one of the National Housing Programmes. (Refer to appendices for full schedule of programmes.)
Year	Legislation/policy/standard	Objective
	Western Cape policies	
2005-2014	Rental Housing Strategy (Building Sustainable Communities)	Presents a 10-year strategic plan for the roll-out of rental stocks in the province. This strategy focuses on three tiers of the rental market: social housing rental housing for low- to medium-income households; community residential units or CRUs, including former hostels that have been converted into low-income family units and other public housing stock; and backyard dwellings, which form a large part of the rental market in townships and informal settlements.
2012	Information and guideline documents on the implementation of green procurement in the City of Cape Town (CoCT)	Provides information and describes the preferred ways to implement green public procurement and environmental legal compliance in the CoCT.
Year	Legislation/policy/standard	Objective
	Green building framework	
2011	National Framework for Green Building in South Africa (NFGBSA)	Promotes the objectives of green building in the public sector. These include: Proactively inform and support development of plans and programmes Identify opportunities and constraints Identify key strategic areas Integrate principles of green building across areas, regions and sectors Improve the realisation of cumulative effects Focus on enhancement of human settlements Integrate the concept of green building into immovable asset formation in South Africa.
2011	Green Economy Accord	Outlines the South African Government pact – between Government, private business, trade unions and civil society – to create 300 000 new green jobs and double the country’s energy generation capacity by 2020. Includes a commitment to installing 1 million solar water-heating (SWH) systems in South Africa by the end 2014; promoting retrofitting in commercial buildings to reduce energy use; and a provision of R25 billion by the Industrial Development Corporation (IDC) for investments in green economy activities over a five-year period.
2012	Green building manual (Drakenstein Municipality)	Outlines a set of guidelines covering green construction principles for built environment professionals.
2013	Income tax allowance on energy efficiency savings	Regulations in terms of Section 12L of the Income Tax Act administered by the DTI aimed at large manufacturing investments. That is: upgrades, expansions or new facilities that exceed R30 million and R200 million respectively.
		South African National Standards (SANS)
2011	SANS 10400	Provides guidelines for the application of the technical aspects of the NBR. (Refer to appendices for full schedule of chapters: Chapter A-XA.)
2011	SANS 10400-XA	Provides technical guidelines for the implementation of the new NBR. These are the first set of minimum standards for energy efficiency and environmental sustainability for buildings in the NBR. These regulations are applicable to new and refurbished buildings

Implementation strategy

The Country has adopted an implementation strategy centered on local municipalities in the building construction and environmental sector. Indeed Schedule 4(B) and section 156(1) of the 1996 Constitution gives law-making and executive powers to local governments in relation to building regulations. The strong powers vested in the local authorities is further asserted within section 152 (1) of the constitution which clearly states that municipalities are co-responsible with the government to protect the environment and to secure an environment that is not detrimental to the health or well-being of people.

In order to ensure that the regulations are observed and successfully implemented, the country has adopted methods based on some elements of the three pillars of the “Sticks, carrots and tambourine” implementation strategy. Legal (direct implementation strategy within the legislation/regulation) approaches such as fines and prosecutions in the event of breaches are the preferred implementation method adopted by the policymakers. In the same perspective, Local authorities are responsible for the administration of the regulations and on-site inspections. Clear sanctions are in place with enforcement methods in the event of breach as set in Section 12 of the National Building Regulations and Building Standards Act (stick policy as defined by Meeus and Delarue, 2011). In addition, the “tambourine” approach is evidenced by the Green Star Certification which has been designed to enhance adherence. Also, the country has in place other targeted financial strategies to ensure that the code is successfully implemented. These include a statutory instrument known as Regulations on the allowance for energy efficiency savings (National Energy Act, 2008), which provides for a tax incentive that could be earned by companies who are able to provide evidence of energy efficiency savings (carrots policy as defined by Meeus and Delarue, 2011). In the meantime, the South African green building council champions the promotion of the new standards through various awareness campaigns and education programs as elaborated on its website (tambourine policy as defined by Meeus and Delarue, 2011). This tambourine approach is also observed in capacity building mission evidenced by the collaborative work of the government initiative through the partnership work of the South African Institute of Architectural Technicians and the Swiss Development Corporation to provide training and workshops on SANS 10400 XA for energy efficiency targeting designers and building control officers. This is particularly important, as without effective administration and policing, effective implementation cannot be guaranteed. The implementation mechanism put in place by the authorities at the main stages of the building project and can be summarized in the table 2 below:

Table 2 Implementation mechanism of the SA building policies

	Design	Construction	Pre-Occupancy checks	Tool used for compliance
The role of Central government	Administration / civil penalties	Administration / civil penalties	Administration / civil penalties	-Legislative instrument -Tax incentive for compliance (S12L of the Act) -Green Star rating SA -Energy performance certificates (SANS) issued at various stages by designated authorities
The role of	No building can be	Multiple inspections	Art14.1 of the Act	Software adapted for

local Authorities	erected without the prior written consent of the local authorities	during the construction phase.	requires the local authority to inspect and issue a certificate of occupancy within 14 days of completion if the work has been completed satisfactorily	energy performance measurement (SANS 10400 Part X)
			Non-Compliance leads to refusal of permission to occupy	Human resources (increase in budget for recruitment and training) Various certificates (SANS) issued at various stages of construction
		Building Control Officers must inspect the erection of buildings and any activities or matter connected therewith throughout this phase and issue certificates where so directed.		
	Building Plans must be validated by a competent person such as engineers/architects before it can be approved by the local authorities (SANS10400XA)		All third parties can only be recognized as competent if they hold valid memberships from their statutory body or appropriate state certification	Capacity building and education that support code implementation (international cooperation)
The role of Third Parties	Non-Compliance leads to refusal of permission to build	Approved professionals and suppliers inspect and issue compliance certificates where so directed		

The mechanism is also strengthened by the creation of a national Building Performance Register, which includes particulars of all energy performance certificates issued by South African National Accreditation System (SANAS). The registry is accessible to the general public.

In respect of the overall implementation strategy applied by the policymakers, it should be highlighted that the strategy is a mixture of Top-down and Bottom-up methods in the country. Whilst the former is self-explanatory through the provisions of the statutory instruments identified above, the latter is evidenced by the development of SANS which was made through the establishment of committees and working groups. Also, in practice the standards are updated through based on the submissions made by those working groups made of stakeholders of various backgrounds.

The other step taken by the policymakers in this jurisdiction to ensure that the laws and regulations identified above are efficiently implemented was to make the process of applying and obtaining a planning permission smooth, traceable and transparent for all stakeholders. This exercise is difficult in practice due to the fact that the planning process is different in each of the country’s nine provinces. The policymakers are conscious of the fact that uniformity could enhance the implementation rate, particularly in a context where it is unanimously admitted that in the country people were struggling to understand and adhere to the existing planning laws and regulations. It is observed that the lack of uniformity and coherence in the bylaws hampers the implementation of the overall planning laws and regulation at national level. However, the process for building control during the construction phase is clear and transparent and this is perceived as contributing to the effective implementation of the Act and the various SANS relevant to the building construction field.

CONCLUSION

The building regulations and policies in general have been an integral part of the South Africa nation for centuries. The country has a clearly defined policy in the building sector and it attempts to reach the aims of that policy by applying the national building regulations. The country has adopted a set of minimum standards which when applied will show compliance

with the regulations. Also, adequate strategies have been adopted to ensure greater implementation. However, unlike in England and Wales a closer review of those regulations, standards and policies on the ground leads various authors to draw the unavoidable conclusion that despite the effort made the National Building Regulation is not implemented effectively in South Africa and where it is partially implemented it is not done uniformly in the various municipalities of the country (Twum-Darko & NtombizodwaMazibuko 2015, Laubscher, J 2011, & Watermeyer 2010). Several causes are identified for the failure of effective implementation and amongst other reasons Twum-Darko & NtombizodwaMazibuko (2015) submit that the low or inadequate implementation was attributed to the lack or poor business process as well as to the low level of awareness as to the existing building policies. In the light of their findings they suggested that in order to trigger better adherence and deep implementation of the existing BR that the focus should amongst others be on redesigning and improving the existing regulatory business processes. That view is backed by the South African cities network (2014) which concluded their own study by declaring that “planning is in dire straits and much of this has to do with the complex legal and institutional arrangements” and it makes the implementation of the various planning regulations whether at national or provincial level difficult to achieve.

Nigeria

This part is divided into two sub-sections namely the overview of the national regulatory framework (1.3.1) and the national implementation strategy (1.3.2)

Overview of the national regulatory frameworks

The built environment is regulated in Nigeria by the National Building Code (NBC) published in 2006 and a set of building regulations whether pre-established by the central government or by regional planning laws and regulations.

Like the codes of other jurisdictions, the NBC 2006 sets out the minimum provisions for design and construction of buildings with the aim of providing an adequate level of safety, comfort, health, and accessibility and building protection. The NBC 2006 is divided in several parts and it deals with pre-design stage, design stage, the construction stage and the post construction stage. At the pre-design stage, specific environmental prescriptions are made in a clear and concise manner as well as the interior requirements (light and ventilation) and the general building limitations. The post construction stage put an emphasis on building maintenance and fire protection and resistance. The enforcement part is made of one section only and refers mainly to the control of building works at all stages and it prescribes the functioning of notices, inspections and certifications amongst other requirements.

The NBC clarifies that regulations dealing with planning permissions implemented and conducted by the department of urban planning at both the Federal and Municipal levels, whereas the execution, supervision and management of the operational process for implementation is the responsibility of the building control department.

In addition to the NBC 2006, the authorities have followed up from the Paris agreement on Climate change developed and adopted the National Building Energy Efficiency Code edited

in 2017 (BEEC 2017) under the auspices of the Federal Ministry of Power, Works and Housing. The BEEC 2017 sets the minimum efficiency requirements for new buildings to achieve reductions in energy use and gas emissions over the life of the building. It is worth noting that the ambitious BEEC applies to new buildings only and to specific buildings identified within the NBC 2006 as group B and group R. As to the implementation of the BEEC it should be noted that to come in force it has to be adopted both at national level and then at local level. After the adoption procedure at these two levels it is directed that the BEEC will be voluntary for up to a maximum of two years to allow for an adoption and inception phase and thereafter it will become mandatory. As anticipated despite being published in 2017 after the Paris agreement, the BEEC has not yet been adopted in any federation. The Nigerian energy efficiency label with a rating system as set within the BEEC has recently been launched in support of the BEEC but only time would say how it is implemented in practice. It should be noted with emphasis that the BEEC is developed and has within a provision which clearly demonstrates that its implementation is unrealistic as Part 6 on enforcement clearly dictates that compliance shall be checked by qualified staff with a pre-requisite that they be trained, qualified and certified. It is unclear whether there is any national or local strategy to satisfy that pre-requisite giving the already existing barrier of insufficient budget. It is argued here that the BEEC has been developed out of context and without regards to the local reality. This is a major policy pitfall and it can be anticipated that implementation of the BEEC is likely to fail or to be ineffective.

Implementation strategies

On the basis of the above identified legislative and regulatory framework it can be concluded that the Nigeria Building code is a mixture of prescriptive and performance based in nature with a typical top-down approach for implementation purposes. The best strategy applied by the policymakers to achieve effective implementation is set within the legal and regulatory instruments themselves. Several provisions cater for fines, civil, criminal prosecutions and administrative sanctions for non-compliance (stick strategy). The identified implementers are members of the Code Enforcement Unit which is a statutory body established within the development Control Department as set within the enforcement part of the NBC. Their missions include the control of building works at all stages and it prescribes the functioning of notices, inspections and certifications amongst other requirements. To ensure compliance they can issue penalties and prosecute non-compliant actors.

With respect to the implementation of the sustainability side of the building regulations, the BEEC 2017 provides that the Energy Efficiency Inspectors are in charge of implementing the legislation by physically checking that measures, products and systems have been installed in accordance to the submitted verification documents. That can also be done through the identified technology-based tool. This implementation strategy hugely relies upon the qualification and experience of the building energy inspectors with clear specifications as to what should be done for them to be considered as competent. Where compliance has been established the inspectors are expected to issue a green label certificate (carrots strategy).

The other strategy used by the policymakers in Nigeria to enhance the implementation rate was to introduce an incentive for building owners to comply with the BEEC. Accordingly, a national building label to rate the buildings' compliance with the BEEC has been developed and validated (tambourine strategy). It is however important to stress the fact that there is no financial incentive for projects owners to try and comply with the BEEC as the only aim of the label is to encourage compliance with an official 'badge of honour' as proud owner of an environmental friendly building.

In the same perspective the policymaker in this jurisdiction has taken adequate steps to give the building laws and regulations a chance of greater implementation by making the planning process clear and transparent at least in theory as set out within the Nigeria urban and Planning Act. The process at the planning stage is clear and foreseeable although in practice it is usually disregarded (Windapo; 2012). The legislator has taken the same care by setting out the building control process within the NBC. If the processes set are thoroughly adhered to, it is submitted that the implementation rate would be enhanced.

Regardless of the above observations, the NBC 2006 and the BEEC are perceived as modern sustainable instruments which on their faces are comfortably comparable to the codes implemented in developed countries and which if successfully implemented will be at the standard expected by all respected nations.

Unfortunately, as observed by Windapo (2012) the NBC 2006 is not effectively implemented as evidence show that there are still as many building failures as there were before the code was promulgated.

Despite the well-intended aim of the NBC 2006, the scientific community and practitioners are unanimous in the agreement that its implementation is poor as it is yet to be adopted by most states of the federation and has not led to any change on the ground (Windapo & Rotimi 2012; Akinsola & Fatokun 2012). A field study carried out by Olaitan and Yakubu, (2013: p.145) reveals that only 16% of buildings constructed complied with the planning laws and regulations and obtained the relevant permits prior to the construction and that invariably and in breach of the NBC 2004 there was no building control during the construction phase, which is a blunt statement of the regulatory failure of enforcement.

Several authors also observe that the poor implementation of existing regulations is prominent when it comes to the sustainability incorporated within the regulations. In that respect, Windapo & Rotimi (2012) point to the current construction practices and opine that they are unsustainable due to poor adherence to existing regulations. Dauda et al also agree with the view that implementation of the NBC has failed and recommend that "an efficient enforcement agency, should be established, adequately staffed and funded, to ensure the implementation of the code, especially those provisions concerning sustainable construction." A recent launch of the energy efficiency label is also expected to fail owing to lack of strong strategy background and consideration of the local realities.

CONCLUSION

Nigeria has developed a sustainable building code which currently regulates the building construction in the country.

That modern instrument has recently been enriched by the introduction of the BEEC and it is observed that strategies have been put in place to achieve an effective implementation. Unfortunately, the literature review suggest that those strategies have not been so far successful as the laws and regulations are simply not effectively implemented. Several reasons are given to justify that finding. Concretely, the sheer number of building collapse and open admission that people continue to build in disregard of the existing laws and regulations as well as the open admission that pre-established processes are not followed by all stakeholders in practice are hard evidence of the implementation failure.

Ghana

Overview of the national building policies

A review of the Ghana building laws and regulations show that the development of the National Building Regulations has its genesis in the colonial Town and Country Planning Ordinance (CAP 84) of 1945.

By the early 1970s the existing colonial land and construction Regulations were no longer relevant to the reality and the Building and Road Research Institute (BRRI) of the Council for Scientific and Industrial Research decided to produce a draft document, for discussion, modification and use as a basis for an updated Code to address the redundancy of the earlier documents. That led to the publication of the Code in 1977, followed by a review in 1988. This instrument was in place until 1996 when with changes in land use patterns, materials and construction methods and local government structure, the Ministry of Works and Housing substantially revised the laws and regulations by producing a document known as National Building Regulations, published as (LI.1630). This document was to improve upon the Building Regulations of the Colonial times and to complement the existing Code.

The L.I.1630 is a legislative instrument deriving from the Local Government Act 462 of 1993 and made as a law in 1996. This law is a set of rules and standards that must be followed to satisfy the minimum acceptable levels of safety for buildings and non-building structures in the country. The L.I.1630 is applicable to the erection, alteration or extension of any building and consists of 19 parts and 187 regulations. The 19 parts include a mixture of planning, design and construction procedures. There is no designated implementer within the regulations.

As far as the sustainability aspect is concerned the LI.1630 does not include specific environment requirement whether for energy efficiency or maintenance. The review of the L.I.1630 reveals a lack of focus on the current global issues of environmental protection and Conservation, Energy efficiency, water conservation and management and Disaster Risk reduction as no part of its content tackles those issues. Although Part 17 has provision for lighting and electrical installations, it is basic with no consideration to the technology and sustainability at all and there is no requirement for any minimum standard since there is no building energy standard. Of interest, it can be noted that in order to improve the instrument and to bring it to the modern age the authorities initiated a reform through the production of a new Building Code which will include all the requirements of the existing building regulations and be in tune with requirements of a

modern building code to answer the current energy deficits. Accordingly, a Draft Building Code was compiled under the supervision of the Ministry of Water Resources, Works and Housing in 2012. Surprisingly despite the good intentions of various stakeholders and the support of the UNEP there has not been any political will to turn the wish into reality. The draft code was duly validated, yet six years down the line the document is still under the coffers of the ministry. Alongside these two master pieces of legislation also operates the Towns Act 1892 which apply to specified towns and cities only as identified within the Act. Whilst the local Government Act 462 and the Towns Act 1892 govern the planning side of building regulations, the LI 1630 set out the technical requirement and processes of all building constructions.

Implementation strategies

The implementation strategies for the above building laws and regulations in Ghana are top-down in nature and inbuilt within the above instruments. They mostly reflect the “Stick” approach in the sense that the Towns Act 1892 provides for heavy penalties for people who build without obtaining the adequate and relevant authorisations. The Local Government Act 462 also provides for fines and other penalties for people guilty of constructing without authorisation, although their penalties are lighter than those handed under the Towns Act 1892.

In the same manner, the strategy adopted by the policymaker to ensure efficient implementation of building laws and regulations during the construction phase is prescriptive as they place a burden upon the project owner to make the move and initiate the statutory building control at each of the 10 phases identified within the legislative instrument. This is similar to the English system with the notice of commencement and subsequent notices prior to the completion of dedicated stages.

The implementation powers is vested upon the Local Authority and in the event of a breach (i.e when a stage has been covered without given the notice to the authorities to inspect the work in advance) they can serve notice on the owner of the building to cut into, lay open or pull down the relevant part of the building to verify that the work has been done in compliance with the regulations. Where the project owner is unwilling to cut down voluntarily, the Authority can apply to the courts for an order to cut down and inspect the work done. It is however worthy of a note that the local authority powers to force the inspection where the project owners are not willing to cooperate cannot be executed without leave of the court as stated in *Randolph v. Accra City Council* [1975] 2 GLR 198.

The policymakers appear to have banked on the fact that with its heavy top-down approach, building controllers suitably qualified and experienced along with the severe sanction for breaches would be enough to ensure that building regulations are effectively implemented. Such belief from the policymaker seems unrealistic with hindsight as most scholars and researchers agree that since its adoption in 1996 the level of compliance with the LI.1610 by all stakeholders is highly minimal (Ahmed and Dinye (2011) and Boamah et al. (2012)). In the light of this research findings, the “stick” strategy intensely applied by the policymakers and the implementers on the prescriptive building regulations in Ghana is clearly insufficient and criticised by several practitioners and scholars as they advocate for the focus to be shifted on strategies

similar to “carrot” that will facilitate voluntary compliance and less on enforcement (Boamah; 2014).

The policymakers have also ensured that planning and building processes are firmly established. The planning regulations clearly enunciate the process through which an applicant must go to secure the permission to build. The process during the building construction is also well established including the process for building control. It is submitted that if those processes were followed thoroughly the laws and regulations would be better implemented in practice. Unfortunately, it is observed that in practice buildings are still failing, blatant breach of health and safety contrary to regulations are still occurring and it is clear that the processes set are not been followed and the direct consequence is building failures and associated consequences. For instance, between 2009 and 2012 twelve cases of building collapses causing at least 37 deaths were identified (Danso & Boateng, 2013). Ametepey and Ansah (2015) considered the factors affecting the failure and attributed the negative events such as fire outbreaks and occasional collapse of buildings to the fact that despite the implementation methods adopted the regulations were not being followed.

Despite the implementation strategy adopted to enhance the success rate, it is observed that buildings continue to be raised without appropriate planning permission and in disregard of the existing rules and regulations. From the above flows a conclusion that the L.I.1630 has not made the needed impact due to its poor adherence.

CONCLUSION

Overall a review of the current building laws, regulations and practices in Ghana put into light the evidence that existing regulations are of low standards and they lack political and legislative power to drive any meaningful success. Existing regulations are not adhered to, which leads to the conclusion that they are not adequately implemented. The strategies adopted by the policymakers are limited to the stick approach and unless further and better strategies are invented and included in the conduct of business and unless the process in term of both planning and building stages are made more robust the laws and regulations would continue to be ignored. There is clearly an insufficient policy strategy for effective implementation of building construction and planning laws in the country.

Cameroon

Like the preceding section the Cameroon building laws, regulations and policies are summarised below in sub-section 1.5.1 whereas the implementation strategies adopted are contemplated in 1.5.2.

The national regulatory framework

The regulatory framework of the republic of Cameroon is rather blurred when it comes to the building construction sector. The building laws and regulation in the jurisdiction can be described but not limited to the following:

Law N° 2004/003 of 21 April 2004 (also known as Urbanisation Code): This is the main instrument within the Building and construction field in the country. This Law is supported by its five implementation decrees namely the Decree No. 2008/0736/PM laying down conditions for

drawing up and revising town planning documents, the Decree No.2008/0737/PM laying down safety, hygiene and sanitation rules applicable to construction works; Decree No.2008/0738/PM organizing land-use procedures and processes, Decree No.2008/0739/PM laying down land-use and construction rules (repealed and replaced by Decree No.2016/3058/PM of 28 July 2016) and Decree No. 2008/0740/PM setting rules on penalties in the event of breach of town planning rules. Since the enactment of the Code, the policymakers and the government have also developed additional instruments to ensure that it is effectively implemented in practice. These include amongst others the Ordinance No.0002/E/2/MINDUH of 23May 2011 establishing a model for building permit applications, Ordinance No.0003/E/2/MINDUH of 23May 2011 establishing a model for permit to implant applications, Ordinance No.0004/E/2/MINDUH of 23May 2011 establishing a model for demolition permit applications and the Ordinance No.0005/E/2/MINDUH of 23May 2011 establishing a model for a works completion statement and compliance certificate.

Alongside these laws and regulations mainly concentrated on towns and building planning activities also operate several other laws and regulation specifically for building constructions as they set out provisions for design and construction of buildings with the view of providing an acceptable level of safety, health, and accessibility and building protection. These are but not limited to

Decree No 2018/1969/PM of 15 March 2018: This Prime ministry's decree establishes the basic fire safety standards in buildings and it is supported by the Ministry of Urban Development and Housing (MINDUH)'s Ordinance No 00928 of 02 April 2018 approving the technical notices for the implementation of the basic fire safety standards in buildings.

Law n°97/003 of 10 January 1997: This law regulates the real estate development, specifically with reference to public housing. This law is supported by the ministry Decree No 0001/E/2/MINDUH of 20 January 2010 setting the rules of presentation of the specifications of real estate development and Decree No 0009/E/2/MINDUH of 21 August 2008 fixing social housing standards.

Also, alongside the above legal instruments all depending directly upon the authority of the MINDUH, also operate other instruments which can be construed as part of building regulations at least in some of their aspects. These are:

- Law No. 96/12 laying down the framework on the management of the environment with its implementation Decree No. 2005/0577/ PM
- Law No. 89/27 regulating toxic waste and Law No.98/005 concerning the water regime
- Decree No. 0070/MINEP of the Ministry of Environment and nature conservation fixing the different categories of operations subject to an impact assessment prior to their execution
- Law No 98/006 relating to tourist activity and its execution decree No99/443/PM.
- Law No. 2011/022 governing the Electricity Sector, the Oil code enacted under Law No 99/013 and its implementation decrees No. 2000/465

- Law No. 2012/006 relating to the gas code

Various other instruments relevant to the building construction but depending upon other various ministries also exist and cannot be easily individually identified given the inadequate filing system in the country. In the absence of a proper building construction code and in the light of the scattered nature of the various laws and regulations applying to the building sector developed without coordination by various ministries it is an impossible task to identify and pin down each and every single regulation. Even so, a good desktop review of laws and regulations in this jurisdiction suggests that whilst efforts have been made to regulate urbanisation and planning activities in the country, the technical aspect of building construction is not effectively controlled. Indeed, the technical standards (except for fire and public housing as shown above) are dealt with under the global blanket of International Organisation for Standardisation (ISO) standards with no real effort to calibrate them to the specific situation of the country. The government has attempted to correct this insufficiency by creating in 2009 the National Cameroonian Standards and Quality Agency (ANOR), which is affiliated with the ISO. The former's main aim is to provide solutions to the challenges facing the country by setting the technical standards of various products including the standards within the building construction sector. Other agencies such as MIPROMALO have been created for the promotion of local building materials.

Turning to the sustainability of building construction in Cameroon the regulatory framework has no reference on energy and resources efficiency in building construction. However, it should be noted that prior to and in the wake of COP21 in Paris concerted action have been made to introduce the sustainability aspect within the country's legal arsenal.

A deep review of those existing building laws and regulations in Cameroon show that without a real building code dealing with the technical and normative standards it is impossible to efficiently regulate the sector let alone to ensure the implementation of the existing rules (Tene et Al; 2018)

Implementation strategy

The policymakers have adopted a pure top-down strategy in their effort to ensure that the laws and regulations identified above are effectively implemented. In that perspective the prescriptive laws and regulations are implemented directly by the Ministry of Urban Development and Housing (MINDUH) in accordance with the decree n ° 2005/190 / of 03rd June 2005 setting its organization. This ministry acts as both policymaker and implementer. Amongst its powers are included the responsibility of developing the implementation and evaluation of government policy on urban development and housing, planning and control of the development of cities, development and monitoring of the implementation of urban development strategies and restructuring, the definition of standards for sanitation, drainage and monitoring compliance with these standards, the implementation of the social housing policy and much more. During the building construction phase the implementers are the local authorities under the powers vested upon them by national constitution of 18 January 1996 and the law of 22 July 2004 on decentralization. Under the 2004 urbanism law the control of building sites and

enforcement of breaches for non-compliance are ensured by the local authorities.

The strategies adopted for implementing the laws and regulations here are typical of a top-down practice where the central authorities simply dictate how the policy developed should be deployed by the implementers. The method used to ensure that the policy aims are achieved are typical of the “stick” method whereby failure to adhere to the prescribed planning and building laws and regulations leads to severe pecuniary, administrative and criminal sanctions ranging from fines to destruction of the contravening building projects as evidence within the Decree No. 2008/0740/PM setting rules on penalties in the event of breach of town planning rules.

Local authorities have within their implementation powers the duty to carryout inspection of building construction sites at various (although undetermined) phases of building projects within their locality. The policymakers had hoped that by discharging that duty competently and professionally the building laws and regulations would improve the quality of building and improve the welfare and comfort of the people occupying those buildings.

Table 3 comparative table of the national building regulations of the targeted countries and their implementation strategies

	England	South africa	Ghana	Cameroon	Nigeria
Building Laws, Regulations & Standards	<ul style="list-style-type: none"> ▪ International Green Construction code 2012 ▪ Building Regulations 2010 ▪ Building Act of 1984 	<ul style="list-style-type: none"> NBRBS Act (No.103 of 1977) amended in 2011 SANS 	<ul style="list-style-type: none"> The Local Government Act 462 L.I1630 The Towns Act 1892 		<ul style="list-style-type: none"> NBC 2006 BEEC 2017
Description	Performance based standard	Mixture of Performance based & prescriptive	prescriptive	prescriptive	Mixture of Performance based & prescriptive
Standard type (energy)	Rating & Certification system	Rating & Certification system	NIL	NIL	Rating & certification
Mandatory/ Voluntary	Mandatory	Mandatory for residential buildings and Voluntary for other buildings			Voluntary
Building type	ALL types (existing and new)	New Commercial/ residential			New Commercial/ residential only
Sticks (Legal and regulatory tools)	Technology-based standards (mandatory)	Sticks (Legal and regulatory tools)			Sticks (Legal and regulatory tools)
	Performance based-standards	Technology-based standards (Software adapted for energy performance measurement (SANS 10400 Part X))			
	Administrative/enforcement structures (Fines/ civil, penal and administrative sanctions for non-compliance)	Administrative/enforcement structures (Fines/ civil, penal and administrative sanctions for non-compliance)	Sticks (Legal and regulatory tools)	Sticks (Legal and regulatory tools)	Administrative/enforcement structures (Fines/ civil, penal and administrative sanctions for non-compliance)
	Emissions rate targets setting and sanction for breach)	inspection/control by local authority	Administrative/enforcement structures (Fines/ civil, penal and administrative sanctions for non-compliance)	Administrative/enforcement structures (Fines/ civil, penal and administrative sanctions for non-compliance)	Technology based standards
Implementation strategies	inspection/control by local authority and/or Approved controllers	Carrots (Financial & economic tools)	Provision for inspection (structural calculations at Part V)	inspection/control by local authority	Provision for all building Controls
	Carrots (Financial & economic tools)	Tax incentive to enhance adherence to legislation and regulations through the National Energy Act, 2008	Carrots (Financial & economic tools)	Carrots (Financial & economic tools)	Carrots (Financial & economic tools)
	Environmental subsidies for sustainable technologies		NIL	NIL	NIL incentive
	Tax exemption for achieving emissions targets	Tambourines (information tools)	Tambourines (information tools)	Tambourines (information tools)	Tambourines (information tools)
	Tambourines (information tools)	Capacity building and education that support code implementation: training & workshops on SANS 10400 XA	NIL incentive	NIL incentive	Environmental labeling schemes
	Public information campaigns	Environmental labeling schemes (SANS 1995)			
	Environmental labeling schemes				
	Research funding				
Planning process	Clear, traceable and strictly applied	Confused/ unclear in various provinces	Clear and traceable but not strictly applied (ignored by most owners)	Clear and traceable but not strictly applied (ignored by many owners)	Clear and traceable but not strictly applied (ignored by most owners)
Building construction process	Clear traceable and strictly applied	Not strictly applied Clear and traceable	Clear and traceable but not strictly applied (ignored by most owners)	Confusing/ vague and not traceable	Clear and traceable but not strictly applied (ignored by most owners)

To increase the chances of effectively implementing the building laws and regulations in the country, the policymakers have also taken care to set clear and traceable processes, at least as long as the planning side of the building process is concerned. The different stages of a planning application are clearly specified and published with relevant timelines and processes to follow. The only downside is with respect to the building construction stage as although the control mission is given to the local authorities there are no traceable processes governing that exercise. It is submitted that such unclear position contributes to the observed implementation failure as described by researchers (Bikoko and Tchamba; 2015).

CONCLUSION

In conclusion the review of the legislative and regulatory framework for the building construction activities has yielded evidence that the Cameroon building laws and regulations are scattered, various and difficult to trace. That is probably due to the complex structure of the administration and the extensive political battle to keep control on all aspect of daily life. The building regulations identified are essentially prescriptive in nature. The question is whether in practice this plethora of laws and regulations are effectively implemented. Those laws and regulations are implemented through various strategies with the prominent feature being their association to the “stick” method. Studies carried by several authors including Bikoko and Tchamba (2015) point to the fact that existing laws and regulations are not effectively implemented in practice.

CONCLUSION

In summary a comparative table of the national building regulations of the targeted countries and their implementation strategies can be shown in table 3 below. Overall it is observed that building regulations in all the countries considered come in different shapes and sizes. The prominent feature is that where there is evidence of appropriate policy conception upstream, the implementation rate and mechanism is greater. Also, it transpires from the review and comparison made that where the mechanisms and processes are well identified and a mixture of the “stick-Carrots-Tambourines” approaches applied, they work together to yield a better implementation outcome as seen in the case of England and partially in the case of South Africa. The conclusion is blunt in establishing that inadequate processes associated to a poor legal and legislative framework make the implementation difficult to achieve. In the face of these remarks appropriate steps were taken to establish the causes behind the poor implementation noted from the desktop reviews of laws and regulations of all jurisdictions and the outcome is presented in the next session.

Case Study

The above section has highlighted that regardless of their forms and shapes (Sustainable Building Code in Nigeria and South Africa, prescriptive building regulation in Ghana and scattered regulatory instruments in Cameroon) building laws and regulations are not effectively implemented in developing African countries. Effort will be made in this section to review the causes of such situation and to collect stakeholders’ view on potential solutions. That is done through a study carried out in Cameroon between 2016 and 2017.

Case study description

Cameroon is a typical developing African country situated below the Sahara desert. Geographically, it is situated in west Africa and shares borders with Nigeria, Gabon, Congo, Equatorial Guinea, Chad and Central Africa Republic. Politically it is classified as belonging to the CEMAC zone. Culturally the country is often called a mini Africa given its socio-cultural diversity with ethnic groups that can be found in most African countries. Its heritage from the colonisation era has led the country to be bilingual with two regions speaking English as first language and 8 regions speaking French as first language. That diversity of culture means that the legal and regulatory framework is a combination of Common Law and Civil law and that is reflected in the courts and administrative practices of the country. Because of that rich and diverse background, Cameroon represents the ideal country for a study of issue related to the implementation of building laws and regulations in developing countries. One of the main motivations of this country choice as representative case study was the heterogeneity of the population, the dual legal system and the various cultural backgrounds as the diverse experiences lived in this country would closely replicate what is similar in other countries with the same specifications, particularly in the context of building construction where architecture usually reflect the customs and ways of life of the diverse populations. The laws and regulations as well as the building construction policies of the country is defined by the government through the MINDUH. The implementation of laws and regulations are left to the municipalities. The review of the laws and regulations has clearly indicated that like in other developing countries reviewed in this paper, Cameroon building laws and regulations are not effectively implemented. The aim of the case study is to identify the reasons behind the poor/non-implementation observed and where appropriate to discuss and make suggestions on how the decried trend could be inverted.

METHOD

The investigation of the case study was carried out using the qualitative method by the means of Focus group discussion.

Focus group discussions

Nineteen stakeholders of the building construction field from a range of professional background in Cameroon were selected for three focus groups discussions, comprising the following categories: building practitioners (42.10%), staff of the local and central authorities (31.57%), building owners (17.78%) or occupiers of building in other capacity than owners (8.55%). Participants were put in three separate homogeneous groups with two of them made of six participants and one made of seven participants. Although the nature of the groups was homogeneous, we ensured that there were sufficient variations among participants of each group to allow for contrasting and dissenting opinions to be expressed and discussed and we also ensured that the various categories of stakeholders were adequately represented within each group. Each group discussion lasted an average of 75 minutes. The study had a small geographical reach as most respondents worked or resided within the Center administrative region of the country. Respondents were selected based on their experience and involvement in building construction projects either as Building practitioners (including engineers, architects,

environment and land managers ...), policymakers and implementers (high ranked staffs of the central government, staff of the local authorities), Building owners or Building occupiers and managers of public buildings. We conducted the focus group discussions by applying our mind to the fact that other social and professional processes as well as the dynamic of the group were involved and combined to steer the general outcome of the discussion. The discussions were done using an interview schedule prepared before the discussion as guidelines although we did not rigidly adhere to it either in term of precise wording of questions or the order in which questions were written down. This approach was designed to allow the participants to go beyond the topics being discussed to add additional information which they deemed relevant to the enquiry.

Focus Group discussion analysis

Upon completing the group discussions, the digital audio recording material was transcribed, reviewed and we reorganised the field notes which included non-verbal cues and other observations. Specific codes were allocated to each participant in order to preserve their anonymity and to comply with the confidential undertaking made. The focus group transcripts were analysed using thematic analysis, a method for identifying, analysing, and reporting themes and patterns within data (Braun & Clarke, 2013). This method was deemed appropriate because as suggested by Alhojailan, (2012) thematic analysis approach is more relevant when the study aims to understand the current practices of any society or organisation and when samples are determined and defined before proceeding with the study, which is the case in our enquiry. We executed this analysis method applying the inductive approach because as argued by Braun & Clarke (2013; p175) it enabled us to identify themes through a process of coding the data without trying to fit the data into a pre-existing framework, or our personal theoretical interest. Accordingly, the analysis was driven from the bottom up (i.e from the data rather than from any existing theory). Several generic themes emerged from the data in the coding process. We focused our analysis on two themes namely the factors or causes affecting the implementation of building laws, regulations and policies (1) and the stakeholders' subjective assessment of the potential solutions (2) The other themes unearthed from the data analysis are not discussed in this paper. The first theme was then separated and categorized into sub-themes to further investigate the causes and challenging around the implementation of existing building laws and regulations. Assessment of the sub-themes revealed further underlying causes and factor hampering the implementation process and provoked an analysis of how those causes could be tackled. To reinforce this qualitative analysis, a quantitative analysis was undertaken ranking counts of the sub-themes as "frequently recorded" (mentioned at least once by each participant of the three discussion groups), "commonly recorded" (mentioned at least by 9 to 15 participants) or "infrequently recorded" (mentioned by less than 9 participants). Quotes from participants that provided a brief description of the aspects of causes, proposed solutions and current practices on the ground were also recorded. Where necessary in this paper participants are identified by their code so as to preserve their anonymity. In summary the whole analysis process was complete as shown in the below thematic map.

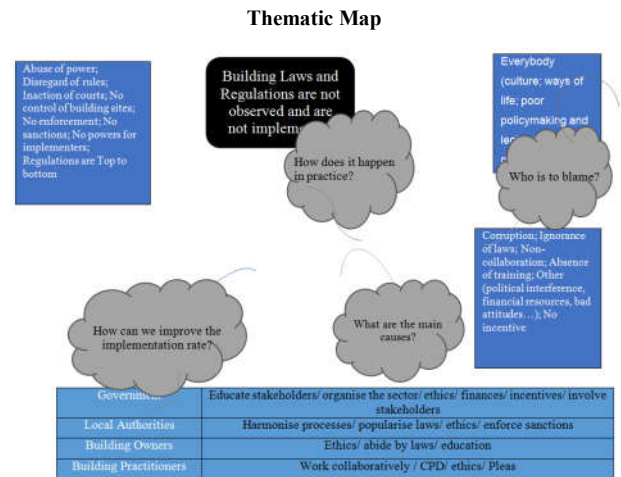


Fig 3 Thematic map

RESULTS ANALYSIS

Causes or factors hampering the implementation of building laws and regulations

Statements were regarded as cause or factor contributing to the non or poor implementation of building laws and regulations if participants used expressions such as "reasons", "difficulties", "concern", "cause", "challenge", "issue", "responsible", "blame", "hamper" and "block". Participants were more comfortable identifying the causes of non or poor implementation through description of what actually happens in their everyday experience as they supervise or are involved on building construction projects and building policy development where relevant. 67 incidences referred to as causes or factors hampering the implementation of building construction laws and regulations were recorded and classified by their frequency into 13 distinct titles as shown in table 4 below.

Table 4 Causes of non or inadequate implementation of building laws and regulations

Causes	Incidence of cause
Corruption	Frequently recorded
Lack of awareness of laws and regulations	Frequently recorded
Lack of and insufficiency of technical human resources	Frequently recorded
Self-building practices	Frequently recorded
Lack of cooperation amongst stakeholders	Commonly recorded
Lack of collaboration/ coordination amongst government departments	Commonly recorded
Administrative bottlenecks	Commonly recorded
Inadequate/ Insufficient financial resources	Infrequently recorded
Life style	Infrequently recorded
Poor policy development (out of context)	Infrequently recorded
Lack of enforcement/ lack of sanctions for breaches	Infrequently recorded
Inadequate building control processes	Infrequently recorded
Deliberate breach of laws by officials	Infrequently recorded
Political interference	Infrequently recorded

The causes derived in this study provide deeper insight into the challenges and constraints surrounding the implementation of building laws and regulations in developing countries. The responses were overwhelmingly consistent throughout the discussion; All the causes mentioned were repeated at least 5 times by participants of all groups. The causes identified and recorded generally concur with those in previous studies (Kimani & Musungu 2010; Windapo A & Rotimi 2012; Danso & Boateng 2013; Olaitan & Yakubu 2013; Bikoko

&Tchamba 2015; Ametepey & Ansah 2015; Twum-Darko & NtombizodwaMazibuko 2015).

Overall, discussions with stakeholders revealed that existing building laws and regulations were grossly disregarded and an almost systematic reference to salient issues perceived main causes behind this state of affair were identified. We consider as main causes those that were frequently recorded from the group discussions. Those main causes are accompanied by a second group of causes identified from the discussions and classified as commonly recorded and from the other minor causes contributing to the ineffective implementation classified as infrequently recorded. Those three groups can be summed up below.

Main Causes

Corruption

Taking into consideration the number of references made it transpired from the data collected that the most prominent cause of inadequate or non-implementation of building laws and regulations in the case study country was corruption (with all participants unanimously pointing to it as lead factor) which many participants described as being systemic and institutional. Corruption in the building industry is pervasive and is perceived as a routine way of dealings between the local authorities and building practitioners or self-builders. This phenomenon is well summarised by participant FG02/002 when he says *“building work progresses through corruption. The best building work is done through corruption. The commission is even in ecstasy about it. We are all bogged into this practice which we maintain purposefully as it benefits us all, from the government to the little farmer.”* This phenomenon appears to be the underlying factor behind any other cause identified by the participants as illustrated by the words of FG02/003 summarised as follows: *“How can we implement laws and regulations if we are the first people to raise barriers, if we corrupt and ensure that other corrupt us when we are on the other side of the wall? Let's be coherent, we cannot progress with those kind of thinking ways that is it”* and those of FG03/001 as he says *“Lack of awareness of building laws and regulations is the main cause of the non-implementation observed. However, even when people are aware of the rules and regulations and they have the means to construct their building the sheer level of administrative bottlenecks and corruption with which they are confronted is scaring.”*

The emotions expressed by participants during discussions on this cause were anguish and feeling of powerless. All participants described how the government officials ignore or keep a blind eye on illegal activities (such as building without a valid permit or not intervening to stop illegal and unsafe settlements to prosper) and key stakeholders such as project managers, engineers and architects boycott the existing rules by contributing actively or in a latent way to the development of unsafe constructions. In addition, from the discussion of the conduct of other stakeholders in practice it transpires unanimously that the causes of the deplored corruption are contextual and embedded within the current building policies and the bureaucratic traditions of the country. However, the heaviest item in the balance is the socio-economic context characterised by extreme poverty and the high costs of renting in cities as observed by FG02/005 who says that *“The norms,*

the laws and regulations as they currently exist are simply too restrictive financially and in practice for the majority of our population. Poverty is not a trivial factor. They cannot stop people from building houses (...) rents are extortionate and the populations try their best to build their houses.”

In the same perspective, employees of the local authority who are supposed to be the implementers of the laws and regulations clearly display their determination to maintain the corrupt system. They justify their lack of motivation to work honestly by their low salaries, lack of technical and material knowledge and other difficulties. The motivation of those employees to remain honest is also hindered by the fact that politicians and other influential figure regularly intervene to invalidate their decisions this is reflected by the submissions of FG03/006 who submits that *“It is not surprising. During various control missions we are regularly intimidated and often not allowed to carry our mission, particularly when the site owner is a high ranked official or a famous person. I simply have to do like everybody else. I take my beer (bung) and I disappear”*.

Lack of awareness of building laws and regulations

The second most important factor contributing to the inadequate or non-implementation of building laws and regulations emerging from the focus group discussions is the lack of awareness of building regulations not only by the general population but also and most concerning by building practitioners and staffs of the local authorities. That lack is characterized by the lack of professional knowledge, ignorance or misunderstanding about building regulations across the board in general and lack of education. Participants were very open about their shortcomings as at least a representative of each category of stakeholders admitted either directly or through description of their daily practices that they were unaware of the regulations and policies. FG01/005 who is a building owner openly says *“There is truly an ignorance of laws (...) we are ignorant and today we go through so many issues (...) many pipes, sewers ... so the issue that we are not educated”*. That view is echoed by FG01/006, an architect as she says *“when they said laws and regulations are not observed it is not at 100% it is just that the majority does not observe them. Firstly, because they don't know them, and because bad habits die hard”*. FG02/006 who is a technical staff of the local authority confirms that they too lack knowledge at this level. He humbly states that *“There is an ignorance of laws by us professionals who are supposed to implement them with the population and even with the authorities because when we try to implement and notice obstacles it is for us to feed them back”*. Although it is perceived as one of the most important causes of the dire situation on the ground all participants agreed that the combination of all the causes together made it impossible to achieve effective implementation. To that respect FG03/001 who is a policymaker working for the central government summarises that *“Lack of awareness of building laws and regulations is the main cause of the non-implementation observed. However, even when people are aware of the rules and regulations and they have the means to construct their building the sheer level of administrative bottlenecks and corruption with which they are confronted is scaring.”*

Lack of and insufficiency of technical human resources

All participants agreed through their various interventions to adduce both the qualitative and quantitative understaffing as catalyst for the non-observation of current laws and regulations. As they shared their respective practices on building sites, it transpired that the low number of suitably qualified engineers and architects prompt create a space for opportunist and untrained individual to cover the needs of the poor and uneducated populations. Participants repetitively stated that even when the local authorities intend to discharge their implementation mission diligently, they are faced with capacity and competence shortcomings. It clearly comes to light that the understaffing issue hampers the compliance and monitoring overall. FG02/003 summarises this dilemma in his intervention when he says *“The issue facing mayors is principally that within the technical services they have no competent people. They are not professionals. That is the principal problem and that is why in Yaoundé and Douala the Urban community... The urban community of Yaoundé suffers from the lack of qualified technical staff. This means that they lack capacity to handle applications and to control building sites.”*

It is also obvious from the data the government’s building policies are unfavourable and contribute to the worsening of the situation as they do not actively contribute in the training of young professionals and the professional orders have no adequate powers to bring their members to set minimum standards. This leads to insufficient number of practitioners and those who are already trained quickly fall below the minimum standards due to a lack of strategies such as CPD and other practice methods. FG03/004 concurs with that view about the insufficient number of practitioners and concludes that *“Cameroon has 360 local authorities but if you look at the level of engineer technicians per authority you would find that there are less than 10 which have engineers”* and FG02/006 summarises the overall situation when he states *“Staff of the technical services of local authorities are not qualified and worst they are not trained. The government does not help in sorting out the problem. We should inject more money into the training of young people and ensure that their training continues after qualification. I doubt that there is any strategy about this.”*

Self-building practices

Self-building practices have been identified by each participant of the three group as an important cause and was therefore recorded as frequent. The salient point emerging from the discussions is that in the country self-building is the rule rather than the exception. For several reasons people construct without seeking the input of building professionals. The causes of this conduct are directly linked to the poverty and lack of awareness of laws and regulations identified above. F01/006 intervened and highlighted the that in practice *“Professionals are not really involved (when buildings are constructed). This means that laws and regulations are not explained and not applied”*. F03/003 adheres to that statement and clarifies that *“Architects have no impact on cities (in the country)...90% of the people constructing a building just do it like that. I mean as soon as they feel the desire to build, they just wake up one morning and do it.”*

Many owners subjectively believe that the cost of involving practitioners into their building project is unbearable.

Practitioners do not agree with them and submit that such belief is based on hearsay only. FG01/006 states on this subject that *“Most of the people do not even seek architect's advice but simply declare that "architects are expensive”*.

Secondary group of causes (Commonly recorded)

In this category are listed 3 causes summary presented below:

Non-cooperation amongst the different stakeholders

Participants of all categories intervened throughout the discussion to indicate that in their subjective opinions, non-cooperation characterised by poor communication was a great factor in the poor implementation of building laws and regulations. That view is reflected by FG03/007 statement that *“there is no real dialogue between the local authorities, the MINDUH and the professional regulatory bodies. That hampers the efficacy of the action related to the implementation of any law.”* More seriously, many participants explain that the relationship between the sub-divisional councils and the urban community is frosty due to the unhappiness of the former about the fact that financial proceeds of planning and other applications are controlled by the later without them having any say. To that effect FG01/006 angrily states *“the truth is that the local councils do not like the fact that money received from the proceed of planning applications and other administrative documents is managed by the urban community despite the fact that constructions take place on their territories and that the control mission is handled by them. There is simply no motivation ...”*

In another line which summarises the view expressed by the quasi total number of participants it is observed that the poor collaboration between the urban council and the local authorities contribute in slowing the effective deployment of building laws and regulations. To that effect FG01/003 said *“I blame relationship between the local authority and the Urban Community (...) people do not know whether to speak to the local authorities or to the Urban community.”*

Participants displayed a clarity in their perception as to how the non-collaboration is generalised and the impact that state FG03/007 *“There is no real dialogue between the local authorities, the MINDUH and the professional regulatory bodies. That hampers the efficacy of the action related to the implementation of any law.”*

Lack of collaboration/coordination amongst government departments

Throughout the discussion participants overwhelmingly (14 out of 19) identified the lack of collaboration between the various government departments as a major handicap for the implementation of the various building policies in the country. FG03/005 observed that *“the lack of collaboration of the government action with the ministries of Land tenure, Minduh, Health and others makes it impossible for the service users to respect the laws”*. The whole argument is nicely summarised within the intervention made by FG01/004 when he says that *“Before pointing a finger to various stakeholders it is appropriate to recognise that laws and regulations are scattered ... the MINDUH, the ministry of energy, the ministry of land settlement and local authorities all have a role play for the delivery of the government policies in the building sector, however there is no coordination. It is not clear who does*

what. You have to admit that it makes our job very hard and that of those self-builders even harder.”

Administrative bottlenecks

The data gathered reveals that for a vast majority of participants, stakeholders are often put off by the lengthy administrative procedures. Through detailed description of the current practices it emerges that this factor associated to the institutional corruption described above contribute in reducing the implementation rate of any existing laws and regulations in the building construction field. FG03/006 describes the typical difficulty observed daily and complaints in anger about this by declaring that *“the administrative procedures are lengthy and painful when we want to build in compliance with the regulations. From the acquisition of the land to the construction phase one has to wait at least ten years. Who can observe that? No one.”* This concurs with other participant’s view that many stakeholders genuinely seek to abide by the laws and regulations but the machinery is so heavy that they have no choice but to give up. The overall picture is summed up by FG03/007 when in the description of what actually occurs daily says with regret that *“People are scared and put off by the administrative bottlenecks from the start because you are told that the authorities must come and control the site at least twice before the land title can be granted. Meanwhile at the end you have to bribe the authorities for them to come and do the inspection onsite. This cause the people to avoid following the procedure or to simply abandon it midway through as the backhand required by the division officer is really extortionate”.*

Third group of causes: infrequently recorded

6 specific causes were recorded under this head and are summarised below.

Inadequate/ Insufficient financial resources

A strong trend emerged from the discussion during which a good majority of participants (7) intervening from all three groups concur that the implementers (local authorities) face stringent financial hardship which prevent them from recruiting, training and maintaining adequate workforce. That precariat leads to inappropriate professional behaviour characterised by wild practices such as corruption and affect the standard of the building constructed overall. Participants agree that without appropriate financial resources input from the central government for training and service delivery it may be challenging to enhance the implementation rate. The feelings displayed by participants mentioning this cause were usually hopelessness as captured in the declaration of FG03/001, an employee of the local authority *“There is another serious problem. The lack of financial means. I take the example of local authorities, when we complain about the lack of engineers, let me tell you that there are no financial means to pay them”.*

The inadequacy of financial resources is not limited to the hardship facing the local authorities, it also extends to home owners as their limited financial affordability pushes them to cut corners and in doing so adopt conducts which depart from the legal expectation placed upon them for compliance.

Naturally this cause is almost always associated with other prominent causes as summarised by FG02/005 in the line *“The*

norms, the laws and regulations as they currently exist are simply too restrictive financially and in practice for the majority of our population. Poverty is not a trivial factor. They cannot stop people from building houses (...) rents are extortionate and the population try their best to build their houses.” It is construed from the above position that the hope of participants resides in the central government ability to elaborate social funding methods of funding of building construction and recruitment and training of adequate staff to improve the situation linked to this cause.

Life style

The life style was also identified as a cause of the observed non-compliance with building regulations. Many participants perceived resistance to cultural change although on a lower scale as one of the factors affecting the implementation of their local building regulations. This is down to the general mentalities of the people as observed by the participant FG03/005 who states emphatically that *“There is an issue with our mentalities, our ways of doing things at two levels. Firstly, in the way we function and secondly the way with which we perceive things. Now we have to admit that in the way of society moves (...) when it comes to observing laws and regulations people are not that keen. we would rather use some procedures such as corruption and others to reach our aims, so from the start of a building construction people don’t even think about observing the regulations.”* This perception goes a long way to reiterate the place of corruption and other malpractices in the sector as way of life. FG02/003 concludes on this topic by pointing out that *“Our ways of live prevent us from implementing policies and regulations in the building construction sector in this country. How can we implement laws and regulations if we are the first people to raise barriers, if we corrupt and ensure that other corrupt us when we are on the other side of the wall. Let’s be coherent, we cannot progress with those kind of thinking ways that is it.”*

Poor policy development (out of context)

Several participants also highlight and regret the fact that the building laws and policies developed in the jurisdiction are often out of context for being a simple version of laws and regulations copied from developed countries. By being out of context they are not realistic and as such cannot be effectively implemented. This view can be captured in the line expressed by FG03/003 *“Our building policies do not reflect our real context. We are too dependent of our big brothers the colonialists (meaning the Europeans)”*

Inadequate building control and processes

The lack of appropriate building control and the lack of clear process guiding the control is perceived by participants not only as a cause of the decried situation but also as catalyst to other evils recorded as causing the poor implantation level of building laws and regulations. They argue that where controls do take place they are not rigorous enough and the stakeholders feel no pressure to comply with the minimum standards. This is highlighted by FG02/001 in the following words: *“Controls are not rigorous (...) Because there is no coercion, there is no pressure and people just have to operate like that. The problem is the corruption...”*

Beyond this both qualitative and quantitative understaffing is also identified as cause of the highlighted inadequate/inexistent technical building control.

Deliberate breach of laws by officials

Several participants perceive the ultra vires actions of officials involved in the implementation process of building regulations as important factor affecting the outcome of the designed policies. Typically, these conducts are observed at the local authority level, usually in the approval of building permits and in the enforcement of breaches. A few quotes from FG02/001 “The local authorities do not observe the duties of the technical commissions... The mayors disregard the legal requirements and bypass the commission to issue building permits without the file being assessed by the commission. They are the first people to stutter building laws and regulations and thereby create the urban mess.”

Political interference

Political and other influent officials in the country are perceived by many participants as ingredients in the persisting inability to implement building laws and regulations and this was voiced with emotion by FG02/006 “The true is sometimes we find ourselves in situation where we are told that there is a phone call or there is somebody sent by either the prosecutor or the colonel or the minister (...) you understand what it means”.

Proposed solutions on how to overcome the factors identified

During the group discussions participants were encouraged to think and express their views on what could constitute an acceptable solution for the issues diagnosed as affecting the effective implementation of building laws and regulations in the country in the country. Statements retained as reflecting strategies to overcome the factors identified were those involving expressions such as “I would propose” “the government must” “it just needs”, “I think they need”, “needs to change”. Other statements in this category included words such as ‘I would suggest’, ‘think about’, ‘make sure’, “ensuring that”, “we/ they could/should”, “authorities must”, “people should”. Participants promptly suggested a range of general strategies to tackle the causes identified in the earlier section e.g. establishing clear processes, harmonizing regulatory framework, reinforcing penalties for breaches, raising awareness and improving education. The proposed strategies to inverse the poor/non-implementation observed were listed and divided into 3 sub-categories (Figure xx) on the basis or their frequency in participants’ interventions. The strategies strongly recommended by participants were the establishment of clear processes (by almost 95% of participants with 18 references) and design and enforcement of strict penalties against officials and professionals caught in corruption and trading in influence (by almost 79% of participants). Raising awareness and improving education through reform were also classified as frequently recorded with 15 references each.

Table 5 Proposed solutions by incidence

Proposed solutions	Incidence of proposed solutions
Establish clear processes (systematic recordings and follow up)	Frequently recorded
Severe penalties against official caught in corruption and trading in influence	Frequently recorded
Educational campaigns through media/ leaflets	Frequently recorded

Educational reform through school programs	Frequently recorded
Setting up free information lines	Commonly recorded
Set up a compulsory collaboration framework between architects and engineers	Commonly recorded
Strengthen building control through mass recruitment and training of technician	Commonly recorded
Increase state budget for training of engineers and architects	Infrequently recorded
Empower the regulatory bodies	Infrequently recorded
Revamp the whole building policies through new legislation	Infrequently recorded
Develop a unique building code or develop a building guide for all	Infrequently recorded
Adopt and enforce uniform processes through the system in all jurisdictions	Infrequently recorded
Moral education of the entire populations	Infrequently recorded
Enforce penalties for breaches	Infrequently recorded
Set relevant and adequate institutional framework	Infrequently recorded

All the participants concur that a step would be taken forward in the implementation process if an adequate strategy is developed to tackle the fundamental and institutional corruption identified. They do not generate deep strategies to eradicate the phenomenon. The only idea brought by 12 participants is that Local Authorities should also put in a place an adequate recording method for both enforcement and compliance. They believe that doing so would significantly put pressure on stakeholders for compliance and render the implementers’ actions more effective and accountable. Unfortunately, they do not put forward any other specific strategy that could work except suggesting that severe penalties be enforced against officials caught in the deed of corruption. This lack of suggestion seems to betray a feeling of powerlessness as perceived from the non-verbal cue observed during the discussions. That feeling is encompassed within the intervention of FG02/003 who diverts all responsibility towards the moral grounds when he says “We have to change our ways of doing things. This apply to professionals as well as to the general population. Professionals must warrant some level of ethics and the populations should develop the sense of common good and become conscious of the dangers of unsafe building practices. Also, the authorities, the local authority should be professional. it is not sustainable to put pressure on the populations the way they do for their personal gain.”

With regards to the lack of awareness of building laws and regulations by all categories of stakeholders the vast majority of participants believe that the central and local authorities should undertake active information campaigns in order to raise the awareness of the local population as to the existence of building laws and regulations, their importance and the benefit of complying with them. They suggest that the sensitization mission can be done by developing adequate educational programmes for the youth within the national curriculum and by holding regular local area meetings for adults. Several lines such as that given by FG01/005 succinctly summarise what their perceptions are “As a building owner I would propose TV programs on our channels. Some specific programs to better sensitize those who engage in self-building. There are campaigns also”. FG02/007 follows the flow and suggests that “At the local authority’s level, the authorities should work harder to disseminate and popularise building regulations and policies.” The success of this mission is also believed the be possible through effective popularisation of existing law. It is crucial for the population to know that those laws and regulations actually stand for. Several other strategies such as that proposed by FG02/006 according to which the local authorities “have to set up an information line (...) a type of free line that can be like an office in charge of disseminating the information that they want the public to know”.

Participants have also suggested that appropriate steps be taken to institute and reinforce collaboration between the professional stakeholders to enhance not only the implementation rate but the safety and quality of the buildings constructed. It is particularly suggested all ministry departments need to own the sense of shared mission and need to work collaboratively toward common and clearly defined goals in the sector. Such frank and open collaboration can be achieved by putting in place an independent authority capable to oversee the actions of different departments intervening in all construction project. The success of this strategy would start with a better communication strategy has proposed by FG01/003 when he says *“I think that to improve the implementation rate communication must be improved”*. On the same topic further suggestions are made requiring actions to be taken by the ministries, the local authorities and the professional regulatory body as submitted by FG03/007 and FG03/007 respectively in the following lines: *“The ministries of urbanism, Land settlement and the local authorities should work collaboratively to develop a construction code which should take into consideration the local realities”* and *“it would be suitable for the government to work in close collaboration with the various professional regulatory bodies in its decentralization mission”*.

Participants also took time to discuss about the best way to tackle the administrative bottlenecks complained of in the day to day activity and the vast majority suggest that the authorities should streamline the procedures applicable by the local authorities for obtaining the various statutory planning permits. Successful review of those procedures would lead to lighter bureaucracy and encourage stakeholders to be more compliant.

There is a significant level of agreement amongst the participants with 13 agreeing that effort should be put into the training of professionals as the shortage in number and lack of skill hampers the implementation target. To this effect FG01/004 insists that training must not stop after qualification but should be ongoing throughout their career and says *“I believe that professionals should have in continuity retraining meeting (continued development plans).”* That view is echoed by several other participants such as FG01/006 who place greater responsibility on professional bodies who seem dormant on the field currently when they argue that *“it must be a requirement that all professionals be up to date through CPD which should be made compulsory so that if as a professional you have not done your CPD your practice certificate may not be renewed. This force people to keep up to date.”*

Table 5 Overview of the causes and proposed solutions of the factors impeding the implementation of building regulations per stakeholder’s category

Stakeholders	Causes from the perspective of	Proposed solutions from the perspective of
Central Authority	<ul style="list-style-type: none"> • Corruption of and by all • Lack of qualified human resources • Lack of financial resources • Lack of collaboration amongst ministerial departments • Excess and abuse of powers • Disparate and uncoordinated normative production 	<ul style="list-style-type: none"> • Streamline processes • Disseminate laws and regulations • Educate populations • Enhance budget • Train more staff • Punish abuse of power • Professional and criminal sanctions for misconduct • Establish a single coordinator of the actions of all ministerial departments • Develop a proper building code • Streamline processes • Sensitisation of self-builders • Enhance budget • Train more staff • Increase salaries • Punish abuse of power • Professional and criminal sanctions for misconduct • Develop a free information and assistance guide with adequate technical knowledge for users
Local authorities	<ul style="list-style-type: none"> • Corruption of and by all • Ignorance of laws and regulations • Lack of qualified human resources • Lack of financial resources • Lack of collaboration • Excess and abuse of powers • Non-respect of regulations by the authorities/ implementers 	<ul style="list-style-type: none"> • Streamline process • Training of professionals • Establishment of clear process at all levels • Effective building controls • Accountability • Compiling regulations and keep them together • Set collaborative framework • Sensitise the population • Empower professional regulatory bodies • Education of the population • Strict penalties for breaches
Building Practitioners	<ul style="list-style-type: none"> • Corruption • Inadequate technical knowledge • Ignorance of laws and regulations • Lack of collaboration • Lack of building controls • Regulations out of context • Confusing regulations 	<ul style="list-style-type: none"> • Create enabling context • Subsidise constructions • Alleviate administrative processes and reduce costs
Building Owners	<ul style="list-style-type: none"> • Ignorance of laws • Corruption • Resistance to cultural change • Financial hardship 	

CONCLUSION

Overall although many causes were identified but participants did not appear comfortable with the ideas of making suggestions on how to improve the implementation rate. Complaints of several nature persisted as examined in the causes section above. Unfortunately, the solutions yield by the discussions did not match the number of causes as summarised in the below table 5.

Overall data gathered from the focus groups activities conducted reveal that the level of compliance with existing building laws and regulations is extremely low and faults are largely due to the corruption phenomenon qualified by many as institutional, but also to the lack of skills and knowledge of the required standards on the part of the professionals, shortcomings in technical building control, acceptance of sub-standard workmanship and inexistent collaborative framework amongst stakeholders. The central government failure to develop an adequate and coherent policy and clear regulations are significant factors of the chaotic environment observed on the ground. Although not very fluent in suggesting how to deal with the issues in order to improve the implementation level, participants believe that by setting up an independent regulatory agency which can coordinate the building sector the scene could be depoliticised and an efficient working environment could be established. In addition, training of professionals and raising awareness through several methods could work in a concerting way to yield the desired outcome. It is felt that clarity as to the role of each authority (administrative and technical) should be brought and the government should take a greater lead in policing the regulations if a progress is to be made. In the same perspective, the study observed that beyond the desire to drive the standards up in the building construction field the local councils have neither clear standards for implementing each of the technical aspects nor the technical expertise in the areas of building inspection. Resolving this shortcoming of the regulatory enforcement will be critical to the improvement of the dire situation observed.

CONCLUSION

The desktop review of building construction policies, laws and regulations of the selected countries subject of this study along with the analysis of the data collected have brought to light concrete evidence that building policies, laws and regulations of developed countries such as England are carefully planned, developed and implemented following the traditional policy development process. That approach associated with clear implementation strategies made of a mixture of “carrots-sticks-tambourine” approaches ineluctably lead to effective or better implementation. In developed countries, building standards are high and overwhelmingly observed by all stakeholders with each set playing their part. The “stick-carrots-tambourines” strategy advocated by Meeus & Delarue (2011) if effectively included in local and national policies and regulations and drive the successful implementation. The success observed is mostly attributable to the clear business and regulatory processes set either within the policy or within the regulations and prominently to the fact that existing laws and regulations are clearly identifiable, traceable and kept within a single point of reference such as a dedicated building code. Permanent and pre-planned periodic reviews are executed to maintain the quality of regulations and to ensure their continued

compliance. Unfortunately, the evidence uncovered during the study also bring to light the fact that in developing countries building construction laws and regulations are simply not effectively implemented. Several causes have been established and attempt suggestions made to improve the situation as discussed above. The reasons highlighted for this include lack of accountability mechanisms, poor or inadequate processes, lack of policy coherence, lack of collaborative framework, resistance to cultural change and qualitative and quantitative understaffing. The contrast established between the different countries appears to transpire from contextual realities and local cultures as they significantly affect not only the development of building policies but also their implementation depending on whether those factors are taken into consideration at the policy development stage or not. The study shows that there is clearly a gap to bridge between the practices observed in developed countries and those observed in developing countries. The salient point from the literature review is that a good majority of policies in developing countries are clearly conceived or designed out of context. There is no evidence that at the policy development stage the policymakers have considered what the implementation stage would look like. Inadequate strategies are persistently used and often essentially based on “stick” approach with no effort to incorporate the two other recommended approaches (tambourines and carrots) to their strategies. It is not surprising that building laws and regulations fail in developing countries as the basis of their development is inadequate. A change of strategy and new methodical processes are required to overcome these challenges, to generate acceptance and support so as to eradicate the causes of non-implementation identified. Although those causes may be difficult to overcome due to their systemic nature and the fact that they are embedded within institutional cultures, practices and processes, sound policies and regulations developed within the local context, needs and capacity would lead to effective implementation. The first step would be to gather the whole of the building laws and regulations within a single code where it is not yet the case (such as in Cameroon) and the to review and revamp the existing building regulations in order to give them a local flavor. The use of adequate strategies as done in the case of England would drive better adherence and steer effective implementation of the revamped regulations. The evidence gathered from the review of laws and regulations carried out in this research and the data gathered and collected in the case study have exhibited a lack of coordinated practice in the implementation of laws and regulations at all phases of the building process in developing countries. It is therefore suggested that a framework specifically designed to coordinate the actions of all stakeholders of the building process would drive adherence and trigger better of implementation of laws and regulations.

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