Department of Architecture and the Built Environment.

FRAMEWORK FOR THE EFFECTIVE IMPLEMENTATION OF BUILDING REGULATIONS AND POLICIES – THE CASE OF SUB-SAHARA AFRICAN COUNTRIES

Claude Bernard Tene Nengou
BA (Hons) PGCE, LLM

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LIST OF ABBREVIATIONS

ANOR: Agence des Normes et de la Qualité

ARPEDAC: Association pour la Recherche et la Promotion de l'Energie Durable en Afrique Centrale

ASHRAE: American Society of Heating, Refrigerating and Air-Conditioning Engineers

BEEC: Building Energy Efficiency Code

BSL: Building Standard Laws

BOS: Bristol Online Survey

CIRT: Centre for Innovation in Research and Teaching

CIT: Contextual Interaction Theory

COP: Conference of Parties

FEIBPLR: Framework for Effective Implementation of Building Policies, laws and regulations

GDP: Gross Domestic Product

GHG: Greenhouse gases

HSE: Health and Safety Executive

ICC: International Code Council

IMS: Innovative Management & Strategy Consulting

IPEEC: International Partnership for Energy Efficiency Cooperation

ISO: International Organisation for Standardisation

MINDUH: Ministry of Urban Development and Housing

NBC: National Building Code

NBR: National Building Regulations

NBRBS: National Building Regulations and Building Standards Act

PDS: Prevention Delivery System

PSS: Prevention Support System

REP: Replicating Effective Programs

RIBA: Royal Institute of British Architects

SANS: South African National Standard

UN: United nations

UNEP: United Nations Environment Programme

UNFCCC: United Nations Framework Convention on Climate Change.

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ABSTRACT

This study of the effective implementation of government policies appraises the implementation of building policies in developing African countries, with the view of developing a framework that could increase their effectiveness. Cases of several African countries including Nigeria, South Africa, Ghana were reviewed, and then a single case study was conducted in order to effectively reach the research goal. The target country used as case study was the Republic of Cameroon. The aim of the study was attained by collecting data through a desktop review of building policies, survey questionnaires, interviews and focus group discussions with the stakeholders in Cameroon. The data was permanently triangulated using both qualitative and quantitative methods. The analysis of the collected data was guided by codes designed and developed through the usage of analytical instruments such as the Bristol Online Survey and the Nvivo10 software, as well as through the thematic analysis process. The themes were designed around various drivers of effective policy implementation theories focussing on the relationship between the overseen causes, resulting effects and observed practices in building construction procedures. The findings indicate that Building Policies are not effectively implemented. In the quest of how to address the shortcomings it transpired from the literature that although there are various instruments aiming at developing and implementing policies, there were no specific strategies with the focus on building policies or to the enhancement of the implementation level of building policies in developing countries. The lessons learned from the experiences shared and the content of various implementation theories informed the development of a strategic framework aiming at improving the implementation of existing building policies. On the basis of the data analysed, the framework for effective implementation leaning on the RIBA 2013 Plan of work was developed and assessed. A validation assessment of the potential effectiveness of the designed instrument was conducted through a focus group discussion populated by experienced representatives of most category of stakeholders of the building construction field. Feedback from the discussions and a survey gathered from participants indicate that the proposed framework which covers the entire life-cycle of a building construction is fit for its purpose and could lead to bridging the gap between the existing building policies and their effective deployment on the ground in developing countries.

DEDICATION

Above all, I am grateful to the Almighty God for the amazing grace, good health and wellbeing that were necessary to complete this thesis.

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CHAPTER 1: INTRODUCTION

This thesis investigates the implementation of building policies in the context of sustainability with specific emphasis on how to effectively implement the existing building laws and regulations in developing countries and particularly sub-Sahara African countries. It is a mixed method study achieved through a single case study including quantitative and qualitative data gathered through questionnaires, desktop reviews of existing literature, in-depth interviews and focus groups. This chapter is designed to highlight the study background and to shed some lights on its context to introduce the research. The first part of this chapter summarises the background information on the necessity of effective implementation of building policies as well as on issues affecting its achievement, whereas the other parts set out the aim and objectives of the study as well as the outline of the thesis

1.1 Research background and problem statement

"When I visit a country, I do not examine whether it has good laws, but whether or not the laws are implemented." (Montesquieu 1748)

The above declaration of the philosopher sums up the importance of implementation within the policy development cycle. Many people mistakenly believe that the most important thing for a society is to have good and interesting laws and policies as these can shape the ways of life and improve individual welfare within a given society. However, that belief is misconstrued as in practice a law can only be as good as its level of implementation. As can be observed in many nations in developing countries, excellent laws copied from developed nations have been pasted into their national legal and regulatory arsenal, yet the outcome of those laws is nowhere near the level observed in the countries from where they were copied. Montesquieu (1789) has significantly affected the development of public policy science leading to the inclusion of implementation as a distinct stage of the policy development process and his view quoted above yells for laws and policies to be tailored on their local context. Policies are usually developed with the aim of preventing or resolving an identified issue within a given society and for that aim to be a successfully met, adequate strategies should be

adopted to induce their effective implementation. That principle applies to all aspects of policymaking and the built environment makes no exception to it.

Indeed, the two greatest challenge facing mankind as repeated by various authors and international organisations are the interlinked issues of global warming and energy shortage (Coyle Eugene and Simmons, Richard (2014), Barman Bhajan (2017) and the International Energy Agency). In fact, climate change has been identified as the greatest environmental challenge facing the humanity. Data gathered have consistently shown that as the time goes by, the planet is becoming globally warmer (Vardiman L, 2007). This situation leads most experts to agree that over the next few decades, the world will undergo further potentially dangerous changes in climate, which will have a significant impact on almost every aspect of our environment, economies and societies (UNEP). The main cause of global warming is identified by scientists as a bunch of emissions of greenhouse gases (GHG) into the universe. Scientists blame those man-made gases for rising world temperatures, melting glaciers and rising oceans (Purdy 2005). It is anticipated that without a strong action against the observed trend, life on the earth could become extremely challenging for future generations. The seriousness of the situation prompted a collective consciousness such that progressively the world agreed to put a concerted front for the fight against the phenomenon. That was materialized by the landmark international agreement reached under the United Nations Framework Convention on Climate Change (UNFCCC) and signed during the Conference of Parties (COP) in Kyoto in 1997. Under the protocol, participants were ordered to reduce their GHG emissions level by at least 5.2% below their pre-agreement level within four following years (Bohringer, 2003). Pursuant to the agreement industrialized countries undertook to put in place adequate strategies to hit their respective contractual targets. In the course of developing their individual strategies, countries rapidly uncovered that significant parts of their GHG emissions were associated with energy used in buildings (Global Building Performance Network; 2014). As a matter of fact, buildings were assessed and found to be contributing as much as third of total global GHG emissions (UNEP SCBI, 2009). In countries such as the UK that contribution was estimated at half of the total GHG emitted (Polley 2002). In the light of those findings clear green and specific energy efficiency policies were designed and included into the local building codes or policies to strengthen the fight (IEA Information paper 2008). At present in nearly all industrialized countries, mandatory minimum energy efficiency requirements in the form of sustainable building codes or standards have been

introduced and implemented (IEA 2008). The European union has made sure that the policy works compulsorily within its territory by promulgating a directive (Directive 2002/91/EC) to this effect, whereas the United States of America and Canada have developed set mandatory standards dealing with energy efficiency in new and existing buildings as inserted into the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the International Code Council (ICC). The consciousness that the building sector was an opportunity to inverse the global warming trend and to tackle the global energy crisis was crowned by the UN's environment program through the creation of the Sustainable Buildings and Climate initiative. The initiative is a platform set up between the private sector, governments, non-government and research organisations to promote sustainable building and construction globally and whose aims are to address sustainability issues, develop tools and strategies for achieving a wide acceptance and adoption of sustainable building practices throughout the world and promote adoption and implementation of the above tools & strategies by stakeholders. Although the platform ensures that each participant country takes appropriate steps to modernise its building regulations and or to implement them adequately in order to make a meaningful contribution to the common fight, there is no obligation placed upon the parties. Because of that state of affairs industrialised countries have effectively improved and implemented their national building codes and policies to a high standard. Unfortunately, a review of developing countries' legal and regulatory instruments in the built construction sector reveals that the standards remain extremely low, sustainable initiatives are mostly inexistent and when they do exist they are below par and poorly implemented. These countries are still confronted with the basic issue of safety within building and building construction sites as existing building laws and regulations (mostly prescriptive in nature for most) are not adequate and above all not effectively implemented. In fact, a quick glance at almost all developing countries shows that many of their urban centres are built without consideration to planning laws and regulations, and where plans exist, enforcement is absent (Kimani & Musungu, 2010). That situation is aggravated by the rapid urbanisation due to the sudden acceleration of migration from the rural areas throughout developing countries. Regrettably such rapid urbanisation has been taking place without effective regulatory guidance since the central and local authorities and their overall policies as often reactive rather than pro-active. This failure has naturally led to the development of unsafe and hazardous constructions with the associated risks and consequences as

judged by Moullier (2015). This situation is more pronounced in the Sub-Sahara Africa where the vast majority of the urban population lives in areas developed and built without regards to basic building regulations as shown in the below table 1 extracted from the work of Lall et Al (2017) through the world Bank publications.

Region/country	City	Share of city population living in slums (%)	Share of city population living in slums in 2014 (%)
Sub-Saharan Africa			
Cameroon	Douala Yaoundé	80 (1970) 90 (1970)	37.8
Côte d'Ivoire	Abidjan	60 (1964)	56
Ethiopia	Addis Ababa	90 (1970)	73.9
Ghana	Accra	53 (1958)	37.9
Kenya	Nairobi Mombasa	33 (1970) 66 (1970)	56.0
Liberia	Monrovia	50 (1970)	65.7
Madagascar	Tananarive	33 (1969)	77.2
Malawi	Blantyre	56 (1966)	66.7
Nigeria	Ibadan	75 (1971)	50.2
Senegal	Dakar	60 (1971)	39.4
Somalia	Mogadishu	77 (1967)	73.6
Sudan	Port Sudan	55 (1971)	91.6
Tanzania	Dar es Salaam	50 (1970)	50.7
Togo	Lomé	75 (1970)	51.2
Burkina Faso	Ouagadougou	70 (1966)	65.8
Zaire	Kinshasa	60 (1969)	74.8
Zambia	Lusaka	48 (1969)	54.0

Table 1: Slum population as percentage of total urban population in selected cities, historically and in 2014 (extracted from Lall et Al (2017))

The above observation begs a question as to why on a global village (as the earth has become one), developed countries have better outcome in term of safety and sustainability in the building construction field whilst developing countries continue to struggle with basis features. It is suggested that the failure to implement the existing building laws and regulations in these countries is attributable to poor practice in the policy development and lack of or inadequate strategy. It is observed that in developing countries, implementation of building policies is often haphazard due amongst other reasons to "lack of resolve and policy inconsistency" (Charlier & N'cho-Oguie; 2009).

The quest of adequate answer has taken us into the review of existing literature and it transpires that research on policy implementation has not sufficiently focused on the implementation process within the building construction field. It is argued that understanding the nature of building laws and policies in any given jurisdiction and their implementation process is critical to facilitating effort to enhance their implementation rate and thereby render the risk prevention and safety features of buildings more robust as intended as well as controlling urbanisation and hitting the energy consumption targets.

Whilst there is a consensus that the battle against global warming and energy shortage will be won through the improvement of building policies and that developed nations around the globe have embraced the challenge and started their journey efficiently, material evidence resulting from several research shows that in developing countries building laws, regulations and policies are not observed, buildings are still been built unsafely and very little is actively done to enhance the sustainability of buildings constructed. The causes are directly rooted amongst other into the poor or non-existent implementation strategies (Tchamba and Bikoko, 2015; Ametepey & Ansah, 2015). With that trend it is unlikely that developing countries will effectively contribute into the fight against the climate change and energy shortage through the improvement of their built environment. The critical questions are which factors are responsible of the ineffective implementation of building policies in Africa; what can be done not only to effectively implement the existing building policies, but also improve their quality. This thesis aims at jugulating the root cause by tackling the non-implementation issue right from its root by providing an innovative strategy that could trigger a movement between the long-standing stagnant lines.

1.2 Aims, objectives and research question

This research is rooted on the belief that in order to optimize policy schemes and to propose suitable and relevant strategies for their implementation, it is appropriate to identify the barriers preventing the initially expected results and to observe the stakeholders within their normal day to day environment. That exercise will inform on attractive propositions that could strengthen the development of any recommended strategy. The overall aim of the research is to design and develop a tool that enhances and facilitates the implementation of sustainable building policies in developing countries. If successfully concluded, the research will be beneficial in that there will be a specific tool that can be employed to:

- Guide regional and national policy-makers in the policy development
- Guide policy implementers of the building sector to achieve a greater rate of success
- Stimulate debate and encourage exchange of best practices and learning of building policies implementation in the Sub Sahara Africa region.

To achieve this aim, the following objectives have been set:

1. Review the current situation of building laws and building regulations in some African countries and appraise the extent of their implementation.
2. Explore the quality and barriers to effective implementation of those existing laws and regulations.
3. Explore a best practice approach to achieve successful implementation of the existing laws and regulations in the jurisdiction of these countries, with Cameroon as a case study.
4. Design a strategic procedure or tool aiming at achieving a much successful implementation of existing building regulations in these countries.

1.3 Outline of the study and Thesis structure

This thesis is made of eight further chapters in addition to Chapter 1, and these are briefly described as follows:

Chapter Two provides a description of background and literature review
around the topic of policy development and theories underpinning the implementation science which may need to be considered within the development of the proposed

framework and to place this research in the context of other research on public policy implementation with emphasis on building policies.

Chapter Three critically reviews and compares the current building policies in selected countries classified under the banner of developed and developing countries and assesses their implementation strategies and their effective implementation in practice.

Chapter Four describes the research approach and methodology adopted in this study. It outlines the scope of the research design and situates the research amongst existing research traditions in the policy implementation field. It also provides a justification for choosing the case study design in the prosecution of this research.

Chapter Five provides a full review of the qualitative and quantitative data collected including the collection methods and strategies applied in order to meet the aim and objectives of the research study.

Chapter Six presents the full analysis and interpretation of the data collected through desktop reviews of building policies in the case study country, surveys, in-depth analysis and focus group discussions as presented in Chapter 5 above and draws conclusions which form the basis for the development of the proposed implementation tool.

Chapter Seven concentrates on the actual development of the proposed framework and provides a justification of the choice of its form. It also discusses the methodology adopted in its design as well as its development process and its content. In Chapter Eight, a description of the evaluation conducted after the framework development is provided. It presents the result and analysis of the data gathered through a survey questionnaire and a further focus group discussion with selected stakeholders.

Chapter Nine concludes this research and outlines the conclusions. It highlights the research's contribution to the knowledge and opportunities for further research. The below figure 1 summarizes the thesis structure.

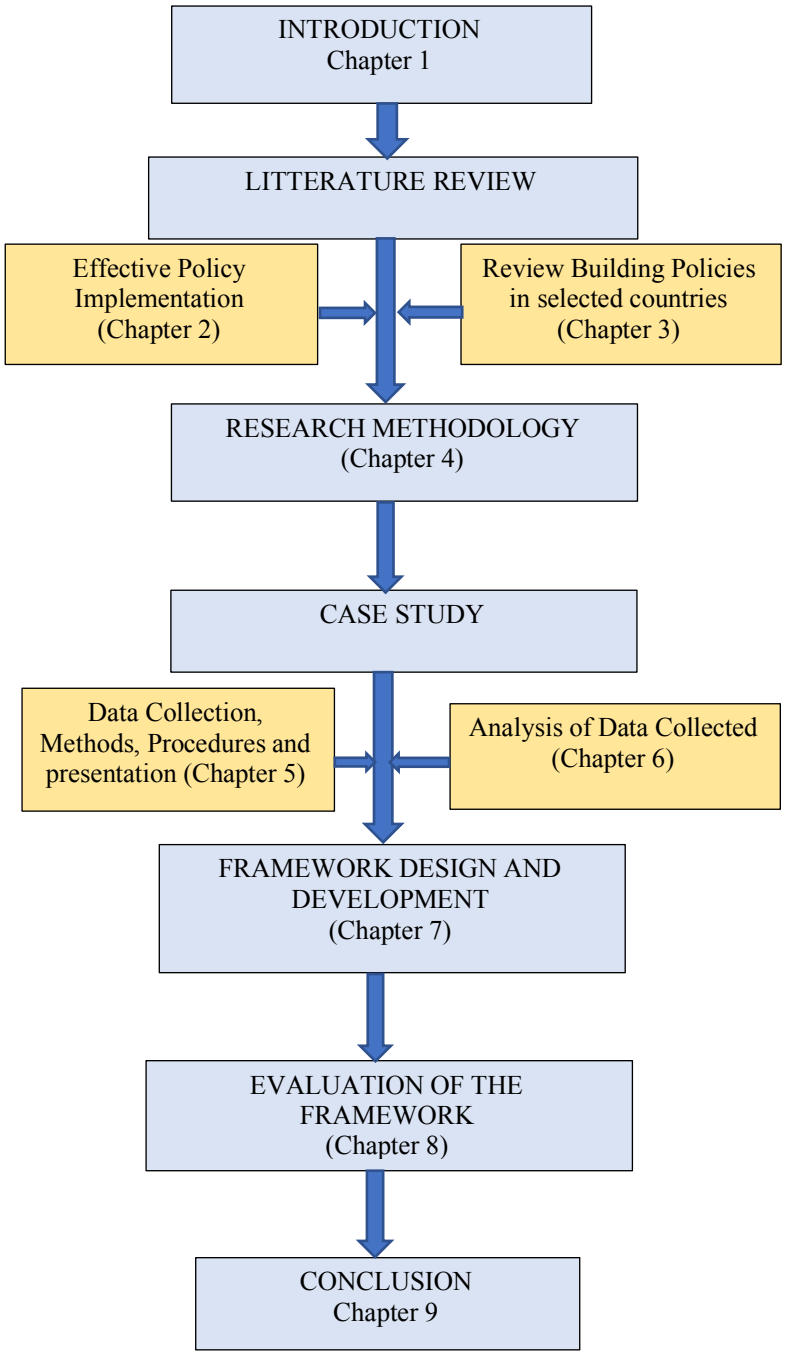

Figure 1: Thesis Structure

CHAPTER 2: EFFECTIVE POLICY IMPLEMENTATION – A REVIEW

2.0 Introduction

Research on effective policy implementation can be traced back to 1930 and its initiative is attributed to doctoral researchers rather than to practitioners or scholars (Saetren, 2005). However, the full academic research in this field proliferated in the early 1970 and grew from the monograph written by Pressman and Wildavsky and entitled Implementation: how great expectations in Washington are dashed in Oakland (published in 1984 by the University of California press). That publication is perceived as the catalyst of the ensued deep intellectual discussions on the topic amongst researchers, practitioners and scholars of different disciplines who have since joined the debate to present the topic from their respective perspectives. In that respect, Hogwood and Gunn (1984, p197) observed that the topic of implementation became serious when authors from the late eighties noticed that policies were failing because "governments were better legislating than at effecting the desired changes". In that flow they argued that implementation was a significant factor in any policy outcome. That conclusion led to the extensive debate amongst scholars, unearthing what was to be called "the implementation gap", particularly as Hogwood and Gunn (1984) had already settled the debate on policy process by identifying 9 principal stages including policy implementation as stage 7 of the 9. The first part of this chapter focuses on the broader literature on policy implementation. It aims at answering the main question formulated as following: what is the exact nature of policy implementation? The aim of this part is to highlight what other scholars and researchers have identified in their studies as the nature of policy implementation. The second part of the chapter highlights what are the factors identified as influencing the effective implementation of policies.

2.1 Nature of Policy Implementation

It is important to start by uncovering what policy implementation means. It has been difficult to reach a unanimous definition of the topic as several authors attempted to provide one. Leading policy scholars such as Van Meter and Van Horn (1975) initially define the policy implementation as one that "encompasses those actions by public and private individuals (or groups) that are directed at the achievement of objectives set forth in prior policy decisions." That definition was questioned by other scholars and

analysts and was adjusted by Mazmanian and Sabatier (1983, p7) when they defined implementation as "the carrying out of a basic policy decision, usually incorporated in a statute" but which can also take the form of important "executive orders or court decisions". That definition was well adopted by supporters of the top-down implementation strategy such as Van Meter and Van Horn (1974) but was also quickly the subject of most critics. For instance, Sandfort and Moulton (2015, p11) regretted that such definition simply embeds implementation on "policy intent or the characteristics of a particular legislative statute". They argued that with such definition program implementation follows linearly from policy formulation, which is not necessarily correct. They submitted that often, policies are created after the documented impact from empirical innovations on the ground. Sandfort and Moulton (ibid, p11, 2015) therefore reaffirmed their position as opponent of the concept according to which implementation is simply a stage in the policy process that comes after the policy has been adopted. They took this position because as summarized by Lucie Cerna, (OECD. 2013), with the definition given by proponents of the top-down policy, the process normally runs through a number of phases from the adoption of statute to the revision of that statute at the end of the process. Building alongside that argument, Sandfort and Moulton (2015) provided their own definition of effective implementation as "deliberate, institutionally sanctioned change motivated by a policy or program orientated toward creating public value results on purpose." This reflects the analysis made by Hill and Hupe (2015) according to which "implementation occurs as a late part in the stages model of the policy process" and confirms that in practice implementation is only considered after the policy has been created and adopted. Implementation therefore technically is not particularly concerned with the discussions and negotiations that take place during the policy development process. This definition of policy implementation is reflected in what has ultimately been adopted by scholars as the conventional chronology of the policy process. That is and is better understood by drawing from what Jann W & Wegrich K (2006) define as simplified policy cycle represented in the below figure 2.

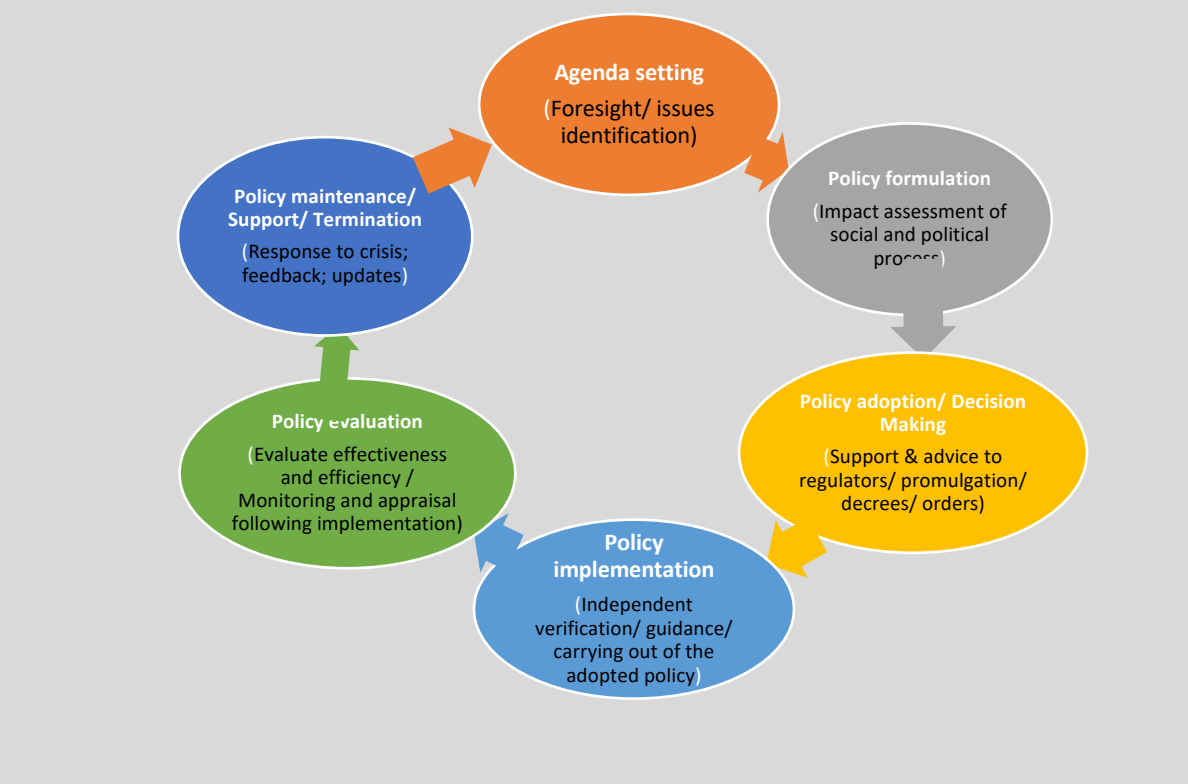

Figure 2:Conventional Policy process cycle

From those definitions it is construed in the context of this research that implementation of building policies in a given jurisdiction refer to a core of agreed or proposed actions that must be observed in the building industry to be perceived as legal or compliant. That core of actions can take several forms. They often come as a body of rules regrouped in a single document known as Building Code, but they also exist in the form of laws, regulations, decrees and other legislative or administrative instruments dictating the conduct of all stakeholders in the field of building construction. Those policies and instruments are built and adopted in the policy development process and will be considered implemented when the intended goal is effectively deployed on the field and adhered to by all relevant stakeholders. On that perspective, this research is aligned with the definition of implementation as ultimately elaborated by Fixsen et Al (2005) in that it refers to a "set of activities designed to put into practice an activity or program of known dimensions".

It may be worth highlighting that the above debate on the appropriate definition of policy implementation appeared at the era of what is known as the second-generation practitioners and comes from the fact that historically amongst authors developing the policy implementation theories there is a clear distinction between the way policies

should be implemented to be more effective. The main distinction is between top-down and bottom-up approaches even though more recently the new generation of practitioners (third generation) and scholars advocate for a dual or combined approach (Matland 1995; O'Toole 2000; Wanna, Butcher and Freyens 2010). The approaches advocated by respective authors and analysts depend on a number of factors including the type and nature of the policy in question, the relationship between the stakeholders and the role of the various entities involved. Even so, over the last decades the trend has seriously shifted in favor of a mixed approach in which the two first approaches referred to above could be used either simultaneously by combination or individually at different stages depending on specific factors.

2.1.1 Top-down Approach

The Top-down approach or deductive approach (as qualified by Wanna, Butcher and Freyens, 2010, p223) refers to circumstances whereby decisions are made, and changes imposed from the government, policymakers or management (top) with no input from the local actors or subjects of the intended policy (down). This strategy is rooted on structure and hierarchy designed to give greater power to the policymaker's authority knowing that they are accountable to the general population. With the top-down approach "the starting point is the authoritative decisions; as the name implies, centrally located actors are perceived as most relevant to producing the desired effect" (Matland ibid, p146). It is characterised by its structural and the hierarchical set up which is supposed to enhance openness and accountability throughout the policy process. Advocates of the top-down approach such as Pressman, Widalsky and Sabatier argue that policymakers are the main actors and as such their attention is mainly focused on factors that can be manipulated at the central level rather than elsewhere (Matland ibid). They argue that implementation starts once clear policy objectives are set within the statutory instrument and the process then follows linearly (Sabatier and Mazmanian 1983; Schofield 2001). The positive features advanced in support of this approach include the submission that "it seeks to develop generalisable policy advice and come up with consistent discernible patterns in behavior across different policy areas" (Matland 1995). In her review, Smith (2008) remarks that in addition of being objective and rational (as opposed to the bottom-up approach) this strategy is usually more realistic when decisions need to be made quickly to deal with imminent, urgent and

actual crisis or when the policy objectives must be delivered within a short period. Whilst considering the top-down approach Hogwood and Gunn (ibid, p209- 218) insist that for this strategy to be fruitful in practice the appropriate approach to implementation must be used. In that vein they identify 4 different strategies made of:

i) The structural approach, which is based on the different organisational structures to different type of structure. The concept of one size fit all should be avoided;
ii) The procedural and managerial approaches which recommend the development of appropriate processes and procedure for an effective implementation;
iii) The behavioural approaches based on the principle that there are "limits to what can be achieved by manipulating structures and procedures". The correct formula must be established to influence human behaviours and attitude as it is established that there is always resistance to change no matter the context and
iv) Political approaches.

As the top-down approach developed, Hogwood and Gunn (ibid, p209- 218) proponents sought to develop tools that could lead to a consistent application on the ground and thereby improve the implementation rate. In that perspective Van Meter and Van Horn (1975) developed an implementation instrument in which they addressed the communication gap within the implementation process. Overall this approach is prescriptive in nature in that it requires clear and specific policy goals, a limited number of actors and it requires the implementation to be done through agencies, which are sympathetic of the policy goal set by the top (Sabatier and Mazmanian 1983 p7-12).

Quickly, critics of the top-down approach challenged its lack in depth by submitting that it operates on the basis that implementation only starts at the point mentioned within the legislation and thereby ignores the significance of previous actions taken at the policy development stage or during the political negotiations (Maitland ibid p147). The critics particularly express their disappointment on the fact that the top-down implementation approach is merely perceived as an administrative procedure, and the emphasis on "statute framers as key actors" prompt analysts and authors such as Owens

& Bressers (2013) and Cerna (2013) to argue that local implementers (who are in their opinion the most significant factors for better outcome) are not taken into consideration in this strategy even though they are likely to have the most relevant expertise in implementing the policy goal with greater fidelity. That specific critic is highlighted by DeLeon and Deleon's (2002) comment that under the top-down strategy policy implementation has the risk of being achieved with standards that citizens do not understand, which can adversely affect the policy outcome. He says to criticise the approach that when the strategy is adopted in those circumstances, top-down becomes a "tactic" rather than a strategy in the implementation process.

Over the years, debates over the relevance of the top-down approach led to a second school of thought whereby many authors adamantly argued that the best implementation strategy and approach would be what is now known as the bottom-up approach.

2.1.2 Bottom-up Approach

The inductive (Bottom-up) approach advocates such as Lipsky (1978) (perceived as the founding father of this theory) depart from the top-down strategy by placing a greater emphasis on discretion and interaction between the various stakeholders (Wanna, Butcher & Freyens (2010, p223-224). This approach focuses on the local implementers who tend to highlight the problem instead of policy objectives (Schofield, 2001). Bottom-up theorists opposed to the top-down strategy by making it plain that it is not technically feasible or politically viable for policymakers to comprehensively structure implementation within a statute or administrative instrument (Sanford and Moulton 2015, p39). Campaigners of the bottom-up approach praise the fact that it focuses on local actors who establish and who are the true implementers of the government's policies (Matland, ibid, p146). In doing that they include "contextual factors" within the implementing environment, the actors, and their goal, strategies and activities as perceived on the ground. In his analysis, Matland highlights the central role of local actors by insisting that successful implementation of any policy depend more on the local implementers' ability to adapt to local conditions rather than on the central authority to try to take initiatives which are inaccurately tailored to the local realities. He insists that in such case the policy is likely to fail. Overall with the Bottom-up approach, the communities are involved at various levels of all phases of a given policy

from the development to the implementation whether through representative bodies or through global participation (Isidiho, Alphonsus & Shatar B. Sabran, Mohammad 2016). As to its nature, Bottom-up models are descriptive in nature as opposed to the prescriptive nature of the top-bottom approach. This method can be better understood by looking at the policy from the lenses of the general public and local implementers as described above. Scholars observed that with the bottom-up approach implementation usually takes place at two levels: a micro level (where local actors respond to the central government's program by developing their own plans and implement them) and at a macro level (where the central actors deploy a government program) (Matland, ibid). From that process, Berman (1978) remarks that in practice most implementation problems arise from the interaction of the policy with the local actors, as central authorities cannot actively affect local factors.

Whilst the bottom-up approach to policy implementation has become much popular at the expenses of the top-down approach over the last few decades, several authors and analysts outline a number of criticisms of the bottom-up approach including the lack of appropriate consultation, the myth that communities are unified bodies, and the lack of knowledge of how to successfully facilitate a participatory approach (Smith 2008). This approach is also criticised at certain quarters on the basis that "street-level bureaucrats" are not elected and therefore not accountable to the general community. Matland (ibid p.170) for instance analysis that there may be occasions where some street actors may mischievously undermine official policies to pursue their own personal policy agenda, which may be contrary to the initially formulated policy objective. In the same spirit, he also draws a criticism of the bottom-up approach by highlighting that most policies are initiated by the central authorities and as such, it may be counter-productive to ignore them in the implementation process, particularly as at any time they may pull out a plug on its existence. Despite having taken time to advocate for the pros and cons of the two approaches, Deleon & Deleon (2002 p.478) declare their preference for the bottom-up approach as they judge it "more realistic and practical" and more "democratic" than the top-down strategy.

Even though each of the two approaches highlighted above have their own advantages and limitations, several scholars have argued that a best method may be one that engages the best practices of each approach as on its face one may not always perfectly

meets the delivery aims on its own.

2.1.3 Mixed Approach

In the light of the committed battle between the two school of thoughts highlighted above the recent generation of authors have focused on combining what Cerna (ibid) called "micro-level variables of bottom-up and macro-level variables of top-down approaches in implementation" and to draw on them to bring the best deployment of any policy in practice (Cline, 2000; Sandford & Moulton, 2015; and Meeus and Delarue, 2011). Their position is well summarized by Cline (ibid) when she says that "the top-down and bottom-up perspectives are not necessarily wrong in how they view the implementation process, but when they are used separately they each provide an incomplete analysis". It is perceived that by combining the two approaches it may be possible to reach a greater implementation rate as clearly it will enable the stakeholders to build on the main strengths of each method while reducing the impact of their recognized weaknesses. It is with that belief that Sandfort and Moulton (ibid, p12) redefine the notion of implementation as "a process of change occurring, sometimes simultaneously and in contrary directions (from top to bottom or from bottom to top), at different scales within a complex system." That position is reflected by Cerna (ibid) in her analysis in which she finds that effective policy implementation usually occurs as direct result of the high level of interaction between stakeholders and at different levels. She analysis that with the appropriate level of interaction "both central policymakers and local actors on the ground are important for successful implementation". With the combined approach it is possible to differentiate between the various strategies and policy areas. This is important, as successful implementation of a given policy is well reliant upon the context and specific socio-cultural realities.

Despite various proposals to unify the two methods it was also submitted that it is ultimately impossible to promote a theory uniting the top-down and bottom-up approach in practice. Instead many analysts such as Saetrens (2005) advocate that both methods should be used (side by side) but do not suggest that they be combined. Instead they insist that each method should be used when appropriate and therefore reject the idea that a model combining the two methods should be developed. It was argued that when used side by side each method would be appropriate in different circumstances

and specific situations. Accordingly, it is argued for example that top-down approach is better applied at the early stage of the policy implementation whereas the bottom-up approach is more appropriate at later stages during the evaluation phase. Other authors such as Matland (ibid) and Berman (1980) also agree with that assessment. Matland for example advocates that Bottom-up approach will be more adapted to situations where the policy is ambiguous, and the conflict is low and top-down approach will be adequate where there is a high level of conflict. In any event Berman (ibid) insists that the choice between the implementation methods should depend on the nature of the policy and its context. Structured situations call for a top-down approach while unstructured situations are better dealt with using the bottom-up approach. In that perspective Berman (ibid) projects that a top-down or bottom-up approach can be used to prepare the implementation plan as shown in Table 2 below:

FACTORS/APPROACH	TOP DOWN	BOTTOM UP
Scope of change	Incremental	Radical, large
Validity of technology	Certain	Uncertain
Goal conflict	Low	High
Institutional setting	Tightly coupled	Loosely coupled
Environment stability	Stable	Unstable, dynamic

Table 2: Relevant factors in deciding which implementation approach to use as suggested by Berman (1980)

Honig (2006, p14-15) has also adopted the positivity of this approach, but in addition she insists that for a policy goal to be delivered with greater fidelity, the implementation process should take into consideration three key dimensions reflecting the dynamic between policies, the people and places. She summarizes this as illustrated in the below figure 3 adapted from her book:

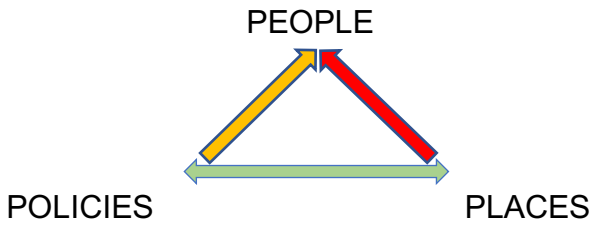

Figure 3: Honig's dynamic for effective policy implementation

The above summarizes the nature of policy implementation as it evolved through the years. Extensive studies as revealed by Durlak & Dupre (2008) demonstrate that

implementation matters and is indeed the second most important factor affecting policy delivery since the data studied emphatically prove that the level of implementation achieved is an important determinant of program outcomes. It is therefore critical to identify the factors that if appropriately included in the implementation process would affect the outcome of the indexed policy whatever the approach taken.

2.2 Factors affecting the policy implementation

As pointed out by Makinde Taiwo (2005) "implementation problem occurs when the desired result on the target beneficiaries is not achieved". Analysts and scholars have reviewed several studies that look broadly to implementation and their conclusion is that, implementation is highly relevant to the policy outcome, but they all agree that expecting perfect or indeed a near perfect implementation of any policy is unrealistic since in practice, positive results have rarely been above 60% (Fixsen et al. 2005; Durlak & Dupre 2008). Drawing from this generally proven hypothesis, theorists have consistently identified factors which if put together could affect the outcome of a given policy and have therefore made different suggestions to reach an improved policy outcome through implementation. Second and third generation implementation scholars and researchers all agree that the implementation strategies chosen for projects strongly affect their outcome and their continuation (Berman, ibid). Drawing from the lessons learned, coherent strategies and frameworks have been submitted and developed by many authors and selected salient strategies will be presented in this section. Distinction has been made between general and specific factors so as to enable a clearer understanding of each identified factor. The general factors are those identified by selected practitioners and theorists resulting from their research or review of the situation on the field, whereas specific factors are handpicked from those put together by scholars or practitioners and developed in the form of recognised theoretical models.

2.2.1 General factors

This sub-section highlights the factors identified by selected scholars considered as broad overview of the situation shared by many others. It also places an emphasis on the implementation drivers identified and recommended by Fixsen et Al (2005).

2.2.1.1 Global overview of the factors leading to effective implementation by theorists

In general researchers have studied factors affecting implementation in an isolated fashion by focusing on only a few variables in their respective analysis. That is the case of Hogwood and Gunn (ibid, p199-206) who, whilst intervening from the top-down perspective argued that 9 pre-requisites must be satisfied for a near perfect implementation under this approach. They identified these and presented them as follows:

- The circumstances external to the implementing agency should not impose crippling constraints;
- Adequate time and sufficient resources should be made available to the programme;
- The required combination of resources should be readily available;
- The policy itself should be based on a valid theory of cause and effect;
- The relationship between cause and effect most be direct with the less possible intervening links;
- The dependency relationship should be very minimal;
- Objectives should be clear, agreed and understood by all stakeholders;
- Communication between the various entities should be fluid and coordinated and
- The orders of those on top should be executed in perfection.

Many other authors have similarly identified factors which they construed could enhance the implementation rate if adequately taken into consideration. In that respect Sabatier and Mazmanian (ibid) built from their policy analysis to develop a model encompassing six specific criteria identified as critical for effective policy implementation under the top-down model. These are:

a) Policy objectives must be clear and consistent;

b) The relevant program must be based on clear causal theory;

c) Implementation must be structured adequately;

d) Officers in charge of the implementation must adhere and be committed to the program's aims;

e) The program must be supported by the executive and legislative powers; and

f) There must be no detrimental changes to the socioeconomic framework condition.

Similarly, in addressing the effectiveness of policy development in the built environment Kibert (2002) argues that to achieve effective implementation the policy instruments must "comprehensively and holistically address the wide range of activities directly or indirectly" connected to the subject of the said policy. Kibert identifies five instruments as being essential to guarantee effective policies delivery in this specialized area. The instruments are illustrated and described in Table 3 below:

INSTRUMENTS	DESCRIPTION
Regulatory Instruments	**Technology-based standards:** • Mandatory standards such as approved technologies for a particular industrial process or environmental problem • Emphasis on the design and use of preventive methods **Performance-based standards:** • Mandatory • Define stakeholders' duties.
Economic Instruments	• Emission charges and taxes; • Product charges and taxes • User charges • Marketable permits; • Deposit-refund systems • Non-compliance fees • Performance bonds: payment of a deposit imposed on polluters or users of natural resources and Environmental subsidies.
Information tools Public information campaign	• A campaign that aims to raise public awareness of environmental issues • Technological information diffusion programs • Environmental labeling schemes: provision of information on the environment-related performance of products, which is certified by third parties or the producers themselves according to predetermined criteria.
Voluntary policy tools	• Unilateral commitment or declaration • Negotiated agreement or commitment
Research and development tools	• Support for the research and development in the private sector • Direct commitment to the R&D activities or establishment of a partnership with the private sector

Table 3: Kibert's instruments for effective policy Implementation

Kibert concludes that if all or most of the above tools are effectively taken into consideration at the various development stages of the policy, its implementation will

stand a better chance of achieving the intended goal at a large scale and with greater fidelity.

2.2.1.2 Effective Implementation drivers identified by Fixsen et al (2005)

In their search of ways to develop the implementation science and to trigger delivery of policy goals with greater fidelity, Fixsen et Al (2005) reviewed the literature in the field, observed and liaised with successful implementers of evidence-based programs and carried a qualitative research on best practices leading to effective implementation in practice. From their work it was concluded that effective implementation usually occurred when a number of ingredients were put together. Those ingredients mostly focused on human resources' competence, the provision of funding and infrastructure needed for the delivery, the general public involvement in the selection and evaluation of the intended policies. In dissecting how, the success was typically achieved, they observed that it resulted from a process of six functional stages, namely the exploration stage, installation stage, initial implementation stage, full implementation stage, innovation, and sustainability stage. It was shown that the effective implementation observed at the end of the process was directly linked to what the authors qualified as core implementation components. Those core components are considered as drivers of effective implementation and are classified in three categories referred to as Competency drivers, Organization drivers and Leadership drivers.

- **Competency drivers**

These referred to the activities aiming at developing, improving, and sustaining the implementers' ability to put the policy (laws and regulations) into practice, so the intended target can benefit from it. Those drivers are: Selection, Training, Coaching and performance Assessment. This indicates that effective implementation is highly dependent upon the quality of staffs in the whole sector and depend on the effort put into their recruitment, training and in making sure that they remain competent to keep the dynamic in progress.

- **Organisation drivers**

These are identified as decision support data system, facilitative administration and systems interventions. They are mainly the mechanisms favouring accountability and reliability within an organisation. The drivers from this category are in practice solid

instrument for combatting bias and unsound and corrupt practices. Through the facilitative administrative component of this set of drivers, success will come from the support provided by the leadership and the ability to be flexible with procedures whilst incorporating local realities in the decision making. Also, by system intervention the authors suggest that successful implementation will occur where adequate financial and qualitative and quantitative human resources have been provided, maintained and improved throughout the policy life.

- **Leadership drivers**

These drivers referred to the actions and behaviours of those in position of leadership. This set of drivers is made of two leadership skills (adaptive and technical). Adaptive Leadership skills include establishing clear and frequent communication channels at the beginning and working to build consensus and support within the community. Technical leadership skills include the ability to clearly identify the nature of the issues at stake and to provide specific guidance and strategies in achieving the proposed solutions.

It is important noting that the above drivers operate hand in hand to lead to effective implementation as they operate in an integrated and compensatory manner. i.e. they support each other and combine at various level to be effective. Overall the effective Implementation drivers are summarised in the below figure:

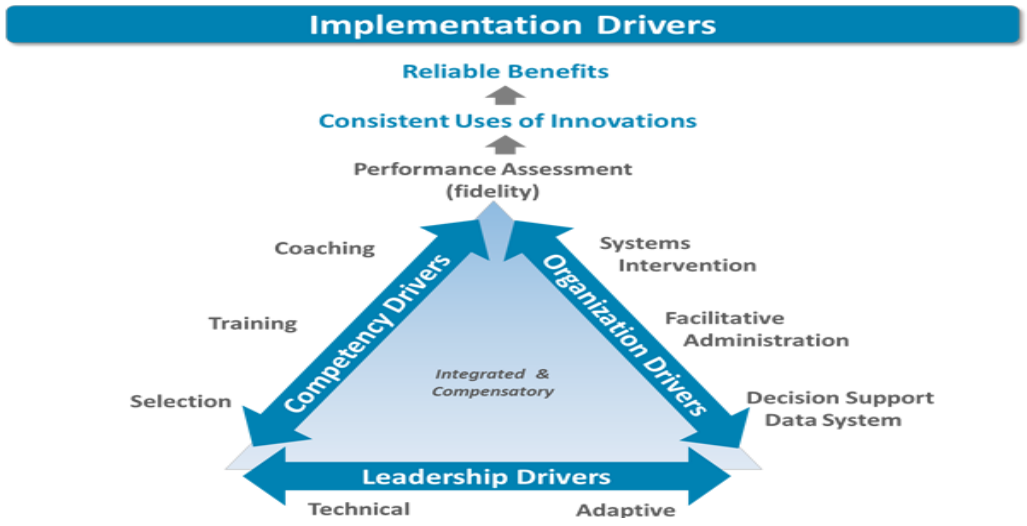

Figure 4: Implementation Drivers (Copied from Fixsen et Al, 2005)

In concluding their study, the Fixsen et Al specifically draw the attention to the fact that a pre-requisite for effective use of the Implementation Drivers is make a sound policy and as such the full policy cycle must be complied with adequately at each stage.

2.2.2 Specific tools for effective policy implementation

In addition to the above selected general elements presented as relevant factors to effective implementation, several other factors adopted in the form of models have been adopted by several researchers as illustrated below.

2.2.2.1 Factors drawn from Durlak and Dupre Model

The contribution of Durlak & Dupre (2008) in this field is remarkable as it encompasses and goes beyond factors identified by their peers. From their extensive studies on the topic they identified that five important elements of the Prevention Delivery system (related to organizational capacity and key elements of the prevention support system in the form of training and assistance) were at the heart of effective implementation. They make it a bold point by insisting that an appropriate type of organizational structure is necessary whenever the issue of implementing a new program arises. That is necessary for guidance purpose. That structure does not have to be brand new. The authors clarify that an existing community-based structure can be used for this purpose. Whichever the case there must be an adequate organizational capacity as it is key to successful implementation of the policy. In addition to those factors, Durlak and Dupre advise that an organizational success will also depend on three other categories that provide an extended context for implementation (by innovation characteristics, providers' characteristics and community factors). Combining the above elements together they draw a list of five factors considered as directly affecting the outcome of policy implementation. Those factors are classified as followed:

(1) Community level factors: The context of the specific community within which the policy is being implemented must be taken into consideration. Community factors are specifically perceived as contributing to effective dissemination and implementation of the developed policy. Relevant features to be taken into consideration include politics, funding, and the actual policy.
(2) Providers characteristics: the relevant characteristics are "perceptions related to

the need for, and potential benefits of the innovation, self-efficacy, and skill proficiency". It is projected that providers who have faith in the identified innovation will produce desired outcome, feel more confident in delivering the program at the level expected by the policymaker and thereby affect the implementation level.

(3) Characteristics of the innovation: flexibility and contextual appropriateness must characterize the innovation to hit the desired outcome. It is therefore a pre-requisite that any innovation be gently introduced if the policy is to be successfully implemented.

(4) Factors relevant to the Prevention Delivery System (PDS). These are features related to organizational Capacity.

(5) Factors Related to the Prevention Support System (PSS) referring to training and technical assistance.

They conclude at the end of their study that "under favorable circumstances variable in all five categories interact and lead to effective implementation" i.e.; to a process for conducting the intervention as planned. Durlak & Dupre (ibid) concluded their deep study into the issues affecting implementation by summing up that from their perspective key elements of the PDS related to organizational capacity and two key elements of the PSS in the form of training and technical assistance lie at the centre of effective implementation.

2.2.2.2 Factors identified from the Van Meter and Van Horn Model

Whilst considering the factors leading to effective policy implementation in general Van Meter and Van Horn (1975) form the view that appropriate strategy is a must and have therefore developed a tool capable at aiding in reaching the aim. That tool is a six factors model of the implementation process as guideline intending to advance policy implementation. The six models are divided in two distinct categories with the first category focusing on the policy itself (first 3 factors) and the second category concentrating on specific aspects of the policy implementation (last 3 factors). These tools can be summarized as illustrated below:

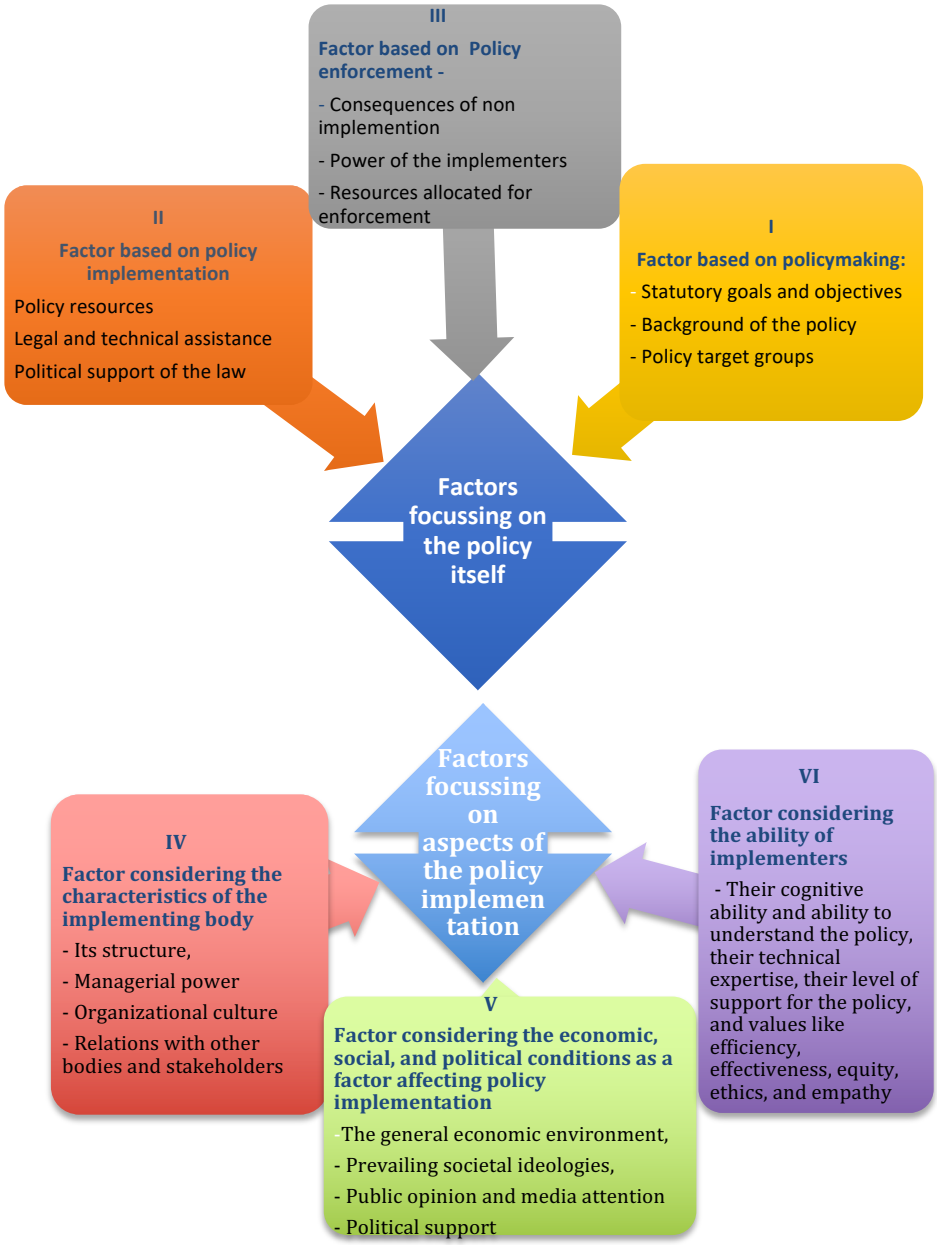

Figure 5: Van Meter and Van Horn's factors model of the implementation process

In the first factor of the model are included statutory goals and objectives, the background of the policy, definition of key terms, and the policy's target groups whereas the second factor of the model encompasses the policy's resources including funding appropriations, technical or legal assistance offered in the law, and political support for the law itself. The third factor of the Van Meter/Van Horn model deals with

policy enforcement and is quite important in the whole process as in this factor are usually included the consequences of non-compliance whether legally, pecuniary or otherwise. The fourth factor of the model refers to the investigation of the characteristics of the implementing body, including its structure, managerial power, organizational culture, and relations with other bodies and stakeholders. The fifth variable in the Van Meter and Van Horn model considers economic, social, and political conditions as a factor affecting policy implementation, including the general economic environment, prevailing societal ideologies, public opinion and media attention, and political support and the sixth factors in the model studies the ability of implementers, including their cognitive ability and ability to understand the policy, their technical expertise, their level of support for the policy, and values like efficiency, effectiveness, equity, ethics, and empathy. Overall, it is argued that if this model is effectively considered during the whole cycle of the policy life spanking from conception to implementation a better outcome would reasonably be expected.

2.2.2.3 Factors deriving from the Contextual Interaction Theory

The contextual interaction theory (CIT hereafter) was developed as a theory of implementation in the Netherlands during the late 1990s. It is an example of a "third generation theory" (Goggin et al. 1990) with the capacity to bridge the top down and bottom up approaches by focussing the analysis on the interaction between implementers and target, whether a government administrator, or an on-the-ground stakeholder (Owens & Bressers 2013). The context in the realm of policy implementation is the actual social, economic, political and legal realities of a system (O'Toole; 1986, p202).

On the importance of the context on this topic Damschrode et al (2009) summarise that "Implementation, by its very nature, is a social process that is intertwined with the context in which it takes place. Context consists of a constellation of active interacting variables and is not just a backdrop for implementation. For implementation research, 'context' is the set of circumstances or unique factors that surround a particular implementation effort." They conclude that, without factoring in the context the business of implementation as a whole may not be so successful.

CIT recognises the importance of internal and external factors that shape outcomes of policy implementation and it should take into consideration those contextual factors to be successful. Those elements can be summarised in the below figure 6.

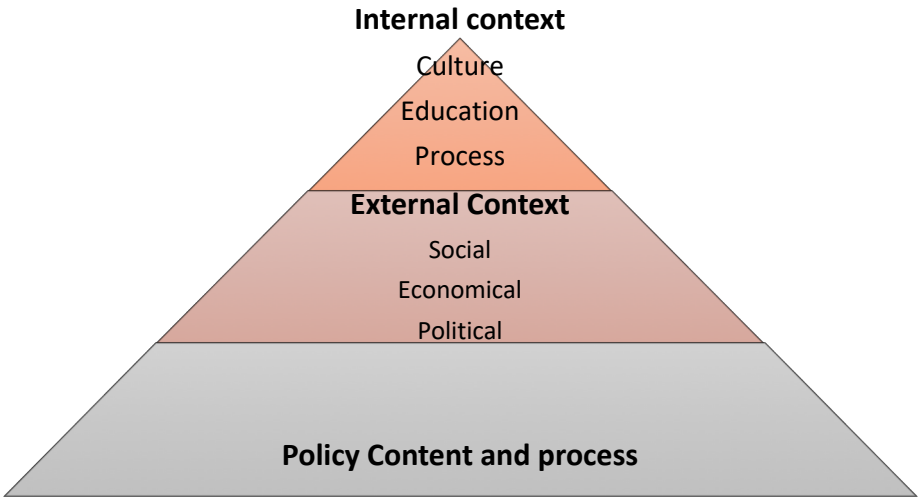

Figure 6: CIT factors shaping outcome of policy implementation

The theory uses motivation, information, and power of the policy implementer and target to predict the nature of the implementation process (e.g. cooperation, obstruction, etc.).

It is considered that the use of CIT as a tool for the effective implementation of a policy provides substantial influence for a better outcome. Based on this theory, successful policy implementation requires that the actors involved have sufficient information and motivation about the policy to be implemented and most importantly, that the implementers have sufficient powers granted by the policy itself (Nino & Gvantsa, 2017; Spratt, 2009) in order to achieve a better implementation rate.

The CIT model assumes that there are resources such as finances, personnel and time, capacity, and control. Where these resources are not adequately provided it is implied that failure or poor outcome would reasonably be expected.

Owens & Hans Bressers (ibid) completed a research in which they asked whether the theory accurately predicts process interactions, based on the quantification of actor motivation, information, and power and concluded from their evidence that there was a strong correlation between expected and observed results, or a high predictability potential. This suggests that an implementation strategy developed on the basis of the CIT could stand better chance of successful delivery of the policy outcome.

Overall, the main attribute of the CIT is to raise the collective moral aim that can get people working together from the central government through to the local implementer and simple enforcer on the ground within a specific environment. That can be achieved through education, training, mutual open and frank discussions as well as the improvement of the social environment for the general public's benefit without disregarding the existing empirical factors. That can only be achieved where there is enough trust between the stakeholders so as to entrust the central administration with a discretionary power knowing that they will account honestly to the people. Whilst that trust it held firmly it operates both ways as the central government also holds such trust in the local implementers that they are granted real and effective powers to dictate the deployment of the policy on the ground. The main pillars of the CIT can be summarised in the below figure 7:

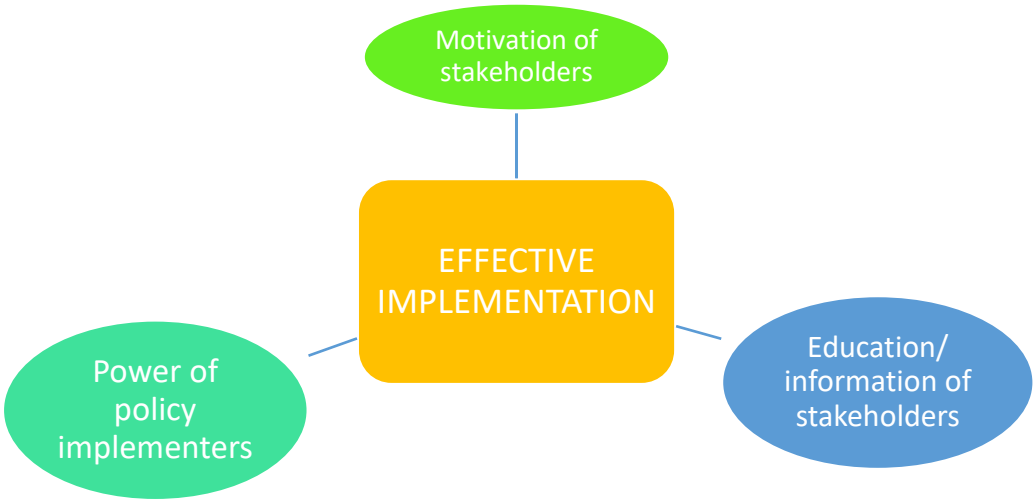

Figure 7: Pillars of the CIT for effective policy implementation

2.2.3 other factors affecting policy implementation

With regards to the specific case of developing countries, Makinde Taiwo (2005) observes that policies are consistently rolled out in these jurisdictions but almost never achieve the intended goal. He goes on to identify the relevant factors hindering the successful implementation of the developed policy as "corruption, lack of continuity in government policies, inadequate human and material resources, all of which often lead

to implementation gap, i.e. the widening of the distance between stated policy goals and the realization of such planned goals". On a global perspective however, he observes that the implementation of every policy is a dynamic process, which involves the interaction of many variables. He points to four critical variables (communication, resources, dispositions or attitudes, and bureaucratic structure), which operate simultaneously and interact with each other to aid or hinder policy implementation. He concludes his research by highlighting that even where the four variables identified above are put in place implementation success is not automatically guaranteed. In addition, there is another critical factor, namely an efficient bureaucratic structure, which he identifies as capital for a successful policy output.

The other important relevant factor uncovered through the existing literature is the collaborative implementation, which typically involves recommendations without formal or statutory authority to carry them out (Koontz & Newig; 2014). Referring to the work of other authors such as Leach and Sabatier, Koontz & Newig submit that under this model there are two main variables that significantly affect level of implementations of designed policies: agreements reached and grant funding. In general, it is perceived that under the collaborative implementation model a strong network is imperative to successfully implement collaborative actions. This is critical, as, since the identified actions are not based on statute or other legal instruments, the agreed actions must be supported by all if not the vast majority of stakeholders. Drawing from interpersonal, political and partnership networks to promote the adoption of the recommendations made can help achieving this aim.

In order to better understand the notion of collaborative implementation, Koontz & Newig (ibid) contrasted it to the traditional implementation as displayed in top-down and Bottom-up models and found that implementation variables can be grouped into four general sets: design, process, socioeconomic and political context, and target groups. The direct comparison revealed that "while traditional policy implementation depends on policy design that gives clear directives, standards, and delineates administrative responsibilities to agencies with fewer veto points, collaborative implementation depends on recommendations that provide clear criteria for resolving goal conflicts among stakeholders". The variables drawn from the comparison was regrouped in the table 4 shown below.

Variable Set	Traditional Policy Implementation	Interorganizational Policy Implementation	Collaborative Implementation
Design of the Policy or Recommen-dation	Clear directives and standards; delineation of administrative responsibilities to agencies with fewer veto points	Pooled rather than sequential decision points	Clear criteria for resolving goal conflicts
Process of Implementation	Resources (capacity for action); sound, shared causal theory of action among implementers; interorganizational communications; supportive disposition of implementing agencies and street-level bureaucrats	Managerial networking; skilful leaders to coordinate, build support and trust, find common interests, and broker exchanges for resource sharing	Resources (capacity for action); sound, shared causal theory of action among implementers; network interactions after agreement is reached; knowledge and learning; skilful leaders
Socioeconomic and Political Context	Conducive conditions for the policy	(not a key explanatory variable)	Conducive conditions for the recommendation; integration with other political and planning processes
Target Group	Degree of popular support for the target group and their power to block implementation actions; knowledge of what factors affect target group behaviour	(not a key explanatory variable)	Participation in creating the recommendations; diverse stakeholder representation

Table 4: Key Explanatory Variables for Traditional, Inter organizational, and Collaborative Policy Implementation Theories (Note: Underlined items are found to be important causal factors in this study*)*

2.3 Chapter Conclusion

In the light of the above literature on policy implementation it clearly transpires that a catalogue of suggestions exist on what can be done for a policy formulated to be effectively implemented, i.e. for it to produce the result that was wanted by the policymakers with closer fidelity. Overall, it should be remarked as reiterated by scholars that implementation is a process and not an event and from the ideas exchanged over the years specific lessons could be learnt including acceptance of the fact that policies are better implemented where:

- The policy aims and objectives are defined and communicated to all involved actors;
- The context is taken into consideration in the implementation process;
- There is a frank collaboration between all actors from the policy conception and designed;
- Implementers are involved (or at least born in mind) from the design process and are given real and effective powers to enforce the policy for the desired outcome on the ground;
- There is a clear chain of accountability;
- The actual policy is based on a valid theory of cause and effect;
- There are appropriate resources (human and financial as well as time should be set aside);
- Effort is made to motivate the stakeholders in the implementation process (by raising their individual and collective interest for example).
- Various networks are taped into in order to implement informal agreements in practice
- Most importantly processes are clearly defined and pre-established.

CHAPTER 3: REVIEW OF BUILDING POLICIES IN SELECTED COUNTRIES

3.0 Introduction

This chapter compares and contrasts building policies of selected countries as well as the way they are implemented. The aim is to identify the potential successful strategies and relevant pitfalls of effective implementation of building policies in general. The aim is achieved by presenting the building policies of the selected countries in two principal sections with one dealing with countries classified as industrialised in section 3.1 and the other dealing with countries classified as under-industrialised in section 3.2. A brief conclusion is then drawn within section 3.3.

3.1 Review of Implementation of Building Policies in Selected Industrialised Countries

For the purpose of this chapter the term industrialised country is synonymous to developed country whereas under-industrialised country refers to developing countries. In accordance with the Collins dictionary of Economics (2005) a developed country is one which the economy is characterised by "large industrial and service sectors, high level of gross national product and income per head". In this section the desktop review of building laws, regulations and policies of several targeted countries is initially presented with focus on their policy and regulatory framework before a comment on their respective implementation strategies. We start with England in subsection 3.2.1, followed by Japan in sub-section 3.2.2.

3.1.1 England

According to the UK National Statistic the Gross Domestic Product (GDP) per capita of the United Kingdom (UK) is estimated at just above $44000. This along with the high level of industrialisation leads to the classification of the country as a developed/ industrialised nation.

By its nature and due to its history since the great fire of London in 1666, England is one of the front-runner and international leader on the promotion and implementation of safe building laws and regulations. During the construction phase in England, two distinct phases are identified in the implementation of building policies, namely the

Planning permission phase and the actual building construction phase. Both phases are characterised by clearly pre-defined processes which contribute in effectively implementing the existing building policies.

3.1.1.1 Overview of the English building 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 2010 in England and Wales which are scheduled within 14 separate headings, each designated by a letter ("Part A" to "Part Q"), and covering all aspects of a building project from the planning to the delivery of the building ensure that new developments or alterations or/and extensions to buildings are carried out to an agreed standard that protects the health and safety of the people in and around the building (Tricker, 2005) as directed within the 1984 Act.

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.

In general, there are two types of building policies in the England and wales: Those related to residential dwellings and those related to non-residential dwellings. The above classification is only highlighted when dealing with specific case scenario. For the purpose of presenting the types of building regulations in this task, they are based on various stages of the building construction and the format of the approved documents

is followed in the presentation exercise. They are therefore presented within the below table 5 with their relevant global aims, their implementation stage and who has control and execute them.

Type of Regulations	Aims	Implementation stage	Who control ?	Who execute	Building Reg 2010
Structure (Giving notice or deposit a plan; site preparation; Ground stability; Fire safety; Building requirements; Access to building; Electrical safety**)**	Regulations related to this part require buildings to be designed, constructed and altered so as to be structurally safe and robust, whilst safeguarding the structural stability of other surrounding buildings	Planning, design, site preparation, building work; delivery	Local authority/ approved inspector	designer/ builders	Regulations 4,5,6,7,8, 12,13,14, 16,20,45 and 46. Approved documents A,B,C,K, M
Fire Safety	The Regulations deal with 5 aspects of fire safety in the construction of buildings: They require safe means of escape from the building; the stability of a building to be maintained in a fire, both internally and externally; Fire and smoke must be prevented from spreading to concealed spaces in a buildings structure and They require that buildings be easily accessible for fire fighters and their equipment	Planning, design, building work and delivery	Local authority/ approved inspector	Owner/ designer/ builders	Regulations 4,7,12,13 ,14,17, 19,20,38, 45, Approved document B
Site preparation & resistance to contaminants and moisture	They address the risks associated with unsuitable material on the building site, contaminants or in the ground and groundwater. It is all about the health and	Planning, site preparation and building work	Local authority/ approved inspector	Building surface engineers/ builders	Regulations 4,5,6,13, 19,45,46, 47 Approved document C

	safety of persons in and about buildings				
Toxic substance	They cover the health risk of cavity wall insulating materials that give off formaldehyde fumes.	Building work	Local authority/ approved inspector	Building surface engineers/ builders	Regulations 3,4,7,13, 17,19,20, 45,46 Approved document D
Sound resistance	The main aim here is the protection of persons living in or about dwellings.	Design, Building work, delivery	Local authority/ approved inspector	Building surface engineers/ builders	Regulations 20,41 Approved document E
Ventilation	This regulation is concerned with ensuring that building ventilation systems are provided, and will under normal circumstances limit the accumulation of moisture which could lead to mould growth and pollutants emanating within the building	Design, building work	Local authority/ approved inspector	Building surface engineer/ builder/ owner/ designer	Regulations 4, 7,17,19,20,24,39,45 Approved document F
Sanitation, hot water safety and water efficiency	Comfort and health and safety of the building occupiers in respect of hygiene and water usage.	Design, Building work	Local authority/ approved inspector	Building surface engineers/ builders / designer	Regulations 29,36,37 Approved document G
Drainage & waste disposal	Protection of public health by ensuring compliance with the functional requirements of the approved document H	Design/ building work	Local authority/ approved inspector	Building surface engineers/ builders / designer	Regulations 29,36,37, 45 Approved document H

Combustion appliances and fuel storage systems	Comfort and health and safety of the building occupiers	Design/ building work	Local authority/ approved inspector	Building surface engineers/ builders/ designer	Regulations 38,45, Approved document J
Protection from falling, collision and impact	Health and safety of persons working or occupying the dwelling or building site	Site preparation/ Design/ building work	Local authority/ approved inspector	Building surface engineers/ builders/ owner/ designer	Approved document K
Conservation of fuel and power	enhancing building performance and contributing towards fight against energy loss	Building work/ design	Local authority/ approved inspector	Building surface engineers/ builders/ owner	Regulations 19,20,21, 22,23,24, 25,26,27, 28,29,30, 32 Approved document L
Access to and use of building	Health & Safety and comfort				
Glazing	Comfort				
Electrical safety (dwelling)	Health & Safety			Building surface engineers/ builders	

Table 5: summary of the Building Regulations 2010 in England & Wales

3.1.1.2 Description of the implementation process in England and Wales

Building policies are implemented in England and wales through two clear processes set from the outset, namely the planning part (dealing with the implementation of the Town and Country Planning Act 1990 as amended) on one side and on the other the

Building Control (dealing with the implementation of the Building Act 1984 and the Building Code 2010).

An analyse of the implementation process reveals a smooth and cogent process whereby specific steps are taken to ensure that each bit of the regulation is effectively covered and that there is a clear and robust implementation strategy in place to ensure delivery. With respect to stage 1 (planning), the time taken for the Local Authority to consider an application and make a planning decision is typically 8 weeks from their acceptance of the application as valid. The planning section of the town hall handles the application and upon receipt it is allocated to a trained planning officer who, drawing from the internal guidelines and from the relevant planning framework assesses it, and decides on its outcome. Where the application is not straightforward and requires more expertise, the case is allocated to a specific team with greater experience to review and investigate where relevant before making the decision.

The process is clearly set within the Town and Country Planning Act 1990 and within the planning framework and indicates what an applicant should do at each stage of the application, and it is clearly described who the assessors are as well as the assessment criteria. Adequate allowance is made for the appeal process along with timing of lodging such appeal.

Once the application is granted the outcome is duly registered and can be accessed by all interested parties and by the general public. Overall the process is transparent.

Upon the granting of the permission, it is the responsibility of the project manager or of the builder to decide when to start the building work. However, to start the process they must shift and start complying with the requirements of the Building Code 2010 and the Building Act 1984 in respect of building control.

The system is robust and provide for continuity as prior to the beginning of the construction work the statute has made it compulsory for the project manager or owners to formally notify the local authority (building control department) who must attend for the first statutory inspection before the project can kick off. This is a safety net as during this stage the controllers meet with the owners to discuss their project and to ensure that the permission has been granted adequately and that the building will be constructed in compliance with the permission granted. The controllers will only sign off this stage when they are satisfied that the project as permitted is adequate and that the plan of work will meet the industry standards and be delivered in compliance with existing building policies.

In addition to this initial requirement, seven additional statutory controls are clearly imposed on the builder to ensure that they build in accordance with the current regulations and that the material used is appropriate. The different statutory inspections set are designed to cover the various important phases of a building construction and are designed to ensure that prior to the cover of the hidden part of the building the standards have been met. Those controls are a safety net for building users and inspire their confidence including when they are purchasing a building that was not constructed by them. With the solid process it is likely that buildings have been constructed up to the standards and that any sustainable agenda within the sector is met.

It is noteworthy to highlight that the controllers have the duty to fully document their findings including approval and request to amend. Even so, at the conclusion of the building construction exercise, the local authority carries out an overall inspection. With this inspection, if private controllers have been complaisant at any stage it is likely that they would be find out and directions maybe issued to the owner to adjust or correct any inadequacy prior to the issue of the certificate of conformity.

The overall regulatory process from the planning through to the building delivery is summarized below with clear distinction between the two phases as highlighted in figures 8 and 9.

Phase 1: Planning (Town and Country Planning Act 1990 as amended).

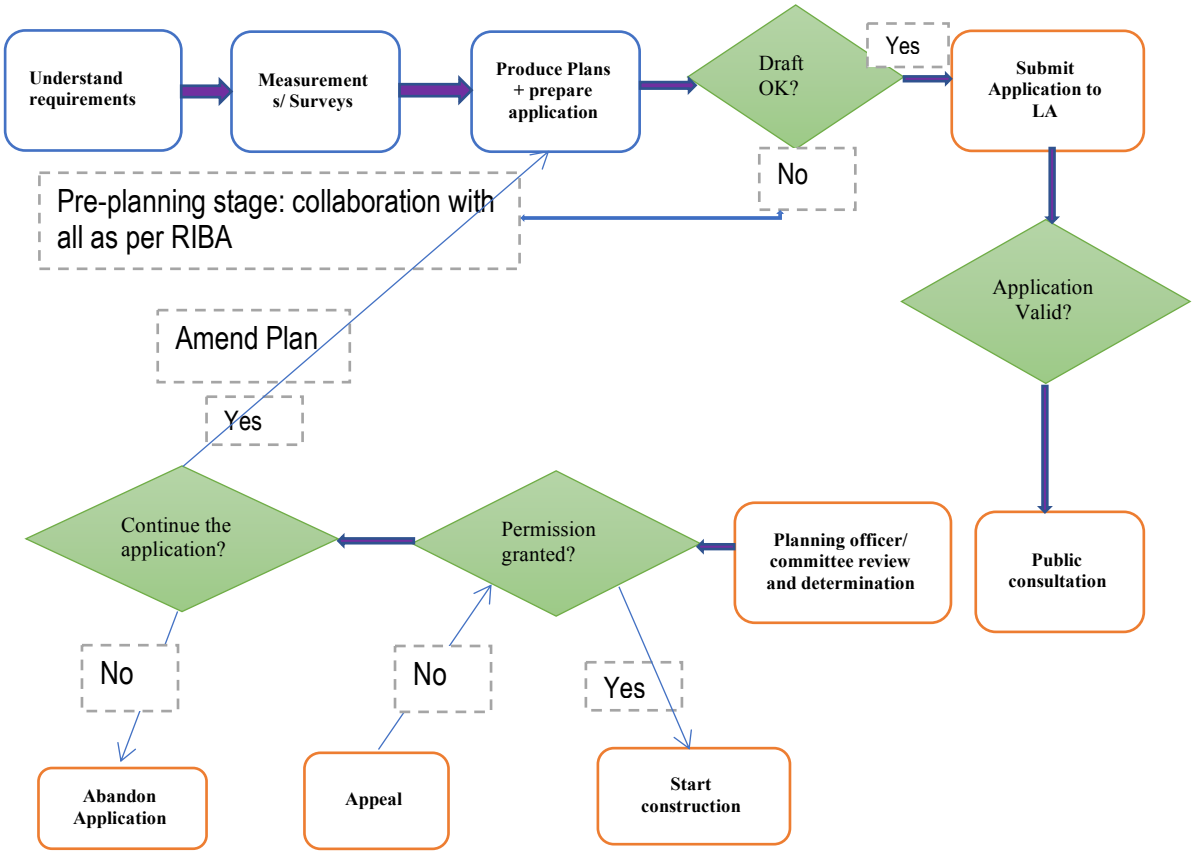

Figure 8: Stages of the Planning permission application process in the England

Phase2: Construction / Building Control (dealing with the implementation of the Building Act 1984 and the Building Code 2010).

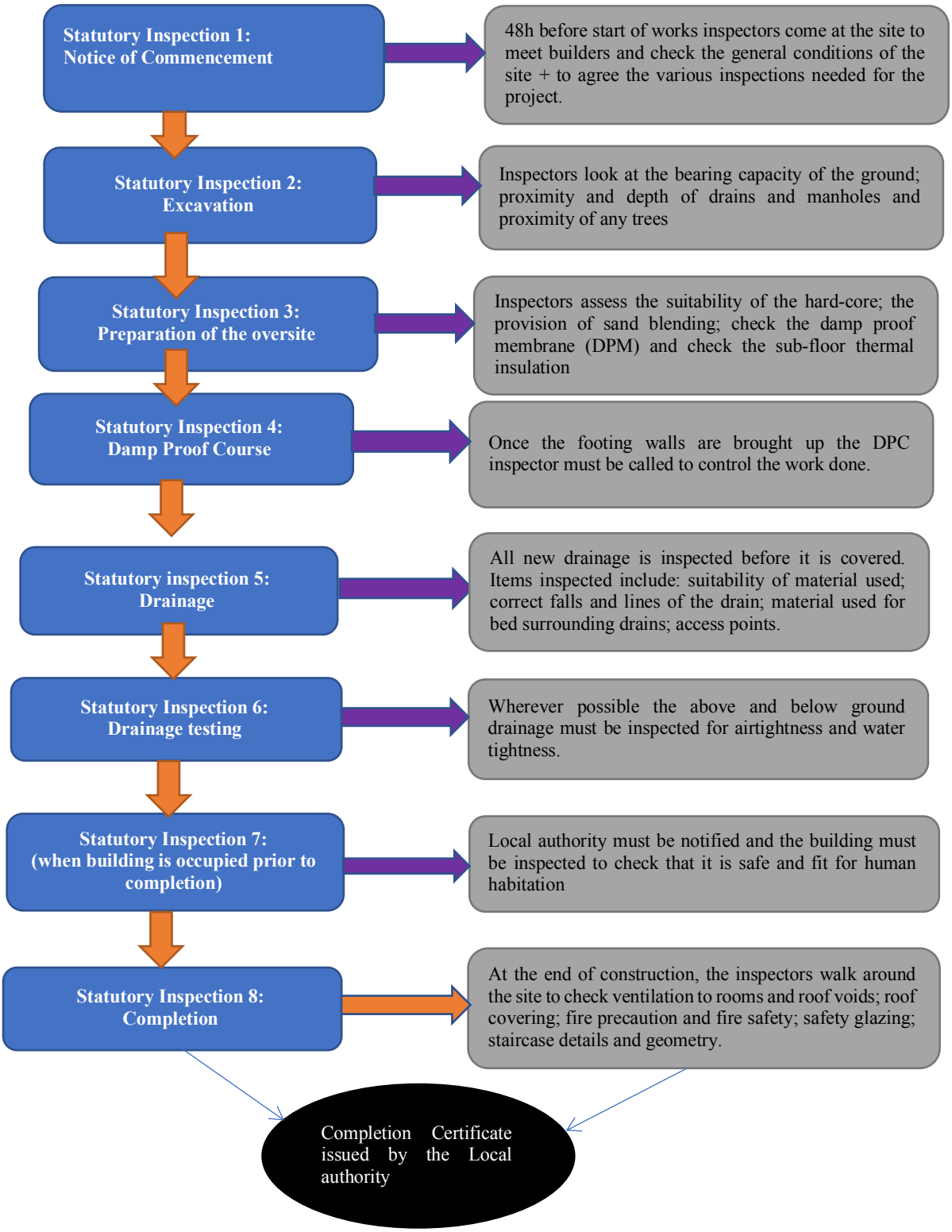

Figure 9: Inspection stages of the building construction process in England & Wales

3.1.1.2 Building policies Implementation strategy adopted by England and Wales

Analysis of the strategy adopted by England and Wales for effective implementation of building laws and regulations suggests that the strategies adopted for effective implementation draws from three tenets of motivation (Carrots, Sticks and Tambourines) advocated in several 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 the minimum required performance standards wherever possible to show greater compliance. When they do comply with that requirement a reward is made in recognition of their effort. As such, 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, effective strategies have been adopted for compliance checking so as to press stakeholders to remain compliant. As such, for example through their building control services the authorities ensure that the technical and physical requirements of the building regulations are met through effective scheduled inspections during which materials and structures are controlled. In the same manner, the authority ensure that the energy requirements are met and they do so through a software developed for compliance checking. That software is known as Standard Assessment Procedure for dwellings with a total floor area up to 450m2 and Simplified Building Energy Model 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 they 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 nationwide 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 Health and Safety Executive (HSE) enforcement data.

Furthermore, 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 Royal Institute of British Architects (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.

Turning to the practical implementation, a strategy consisting of clear division of activities between the planning phase and the actual building construction phase is observed and renders the implementation of existing building policies clearer and traceable. For instance, in addition to the building regulations prescribed at the planning and building construction phases, specific regulatory framework in respect of building control has been established to deal with the process related to appointments, notifications, inspections and certifications in respect of compliance. That distinction contributes in clarifying the procedure and positively affecting the confidence of service users as they can foresee what is expected from them and take the appropriate step to meet the expected standards in a timely manner. At the heart of this strategy is the human and soft nature of the collaboration between building inspectors and project owners/managers. For example, at the end of the planning phase where permission has been granted, building controllers always physically attend the building site after the notice of commencement to dynamically discuss the project as a whole with the management team. That discussion is a franked exchange during which the two professionals share their visions and bring on the table suggestions that could enable the professional to meet the project owner's needs whilst effectively implementing the

building policies. That collaborative working approach is observed in the relationship between all stakeholders of this country.

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 or amending 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 evidenced 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 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. This successful implementation rate is also traduced by the observed reduced level of energy consumption in building (household consumption) between 2010 and 2016 as shown by the data collected by the government Department for Business, Energy and Industrial strategy (BEIS ECUK) as shown in the below figure 10.

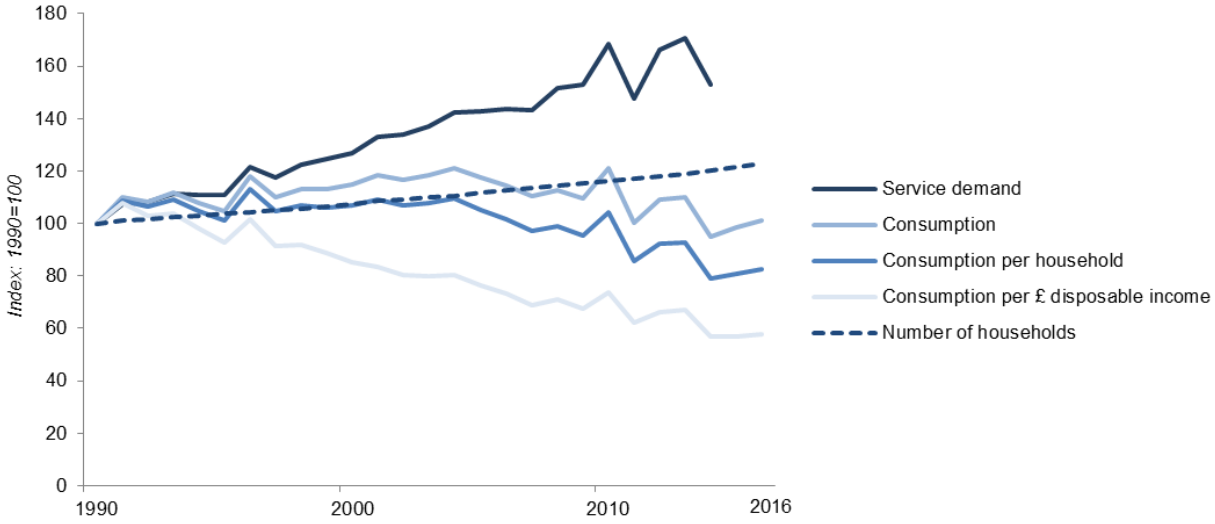

Figure 10: Factors impacting on domestic consumption (source BEIS ECUK).

Overall it can be concluded that the building policies in England are well implemented as the goals set by the policymakers are consistently met with much fidelity than can be observed in other countries.

3.1.2 Japan

The Japanese GDP per Capita for the year ending 2017 was set at $38439 according to the Statista website (accessed on 28 August 2018). With this GDP the country is classified as developed nation for the purpose of this review.

3.1.2.1 Overview of the Regulatory and legal framework

The principal laws concerning building constructions in Japan are the Building Standard Laws, the City Planning Law and the Fire Service Law. Alongside these mandatory building standards also operate the 1979 Energy Conservation Law, or Law on Rational Use of Energy. Based on this later law, Japan issued a set of building energy standards for commercial and residential buildings called the Criteria for Clients on the Rationalization of Energy Use for Buildings (CCREUB). Those standards are progressively introduced to the country and compliance to those standards is voluntary today for most buildings, except for commercial buildings larger than 2,000 m2 as their owners are required to submit plans on energy conservation to local authorities before a development is either undertaken or upgraded. However, the central government has set an agenda that would lead to mandatory building energy efficiency standards that would apply to the whole country by 2020.

- **Building Standard Laws (BSL)**

The BSL is the principal law regulating the building construction activities in the country. It was enacted in 1950 and is particularly concerned with the various building codes (Seismic Retrofitting Law and Building Management Law). The BSL has since gone through several amendments including the one leading to its current version (known as the New Seismic codes) which particularly focuses on seismic activities so as to reflect the local context of building regulations development and which plans for promoting seismic retrofitting by local government. It is the law that applies to all buildings throughout Japan. However, it should be noted that the standards provided within the BSL are not similarly applied throughout the country as they vary from one region to the other depending on their individual contexts and conditions. The BSL is enforced through administrative procedures during which all buildings must prove that they are compliant. Implementation is made through the prescriptive requirement that

there be a building confirmation and inspection by a building official or an independent accredited private inspection company. The designated administrative agency, whether public or private has the real power to stop construction works and to order their destruction if it is deemed that a building has been erected otherwise than in accordance with the BSL.

The BSL has 3 general provisions: Administrative Provisions; Miscellaneous and Penalty and its aim is to safeguard the life, health, and property of people, by providing codes concerning site, structure, equipment, and use of buildings.

This law is divided in two distinct parts: Building Code, which is enforced throughout the country and the Planning Code enforced within designated cities planning areas only. The specificity of this code is that in 1981 existing building regulations were amended and the seismic standards were instituted in order to fully take into consideration contextual factors such as Typhoon and high seismic activities.

The regulatory process for the planning permission and building construction phases in the country can be summarised as illustrated in figure 11 below:

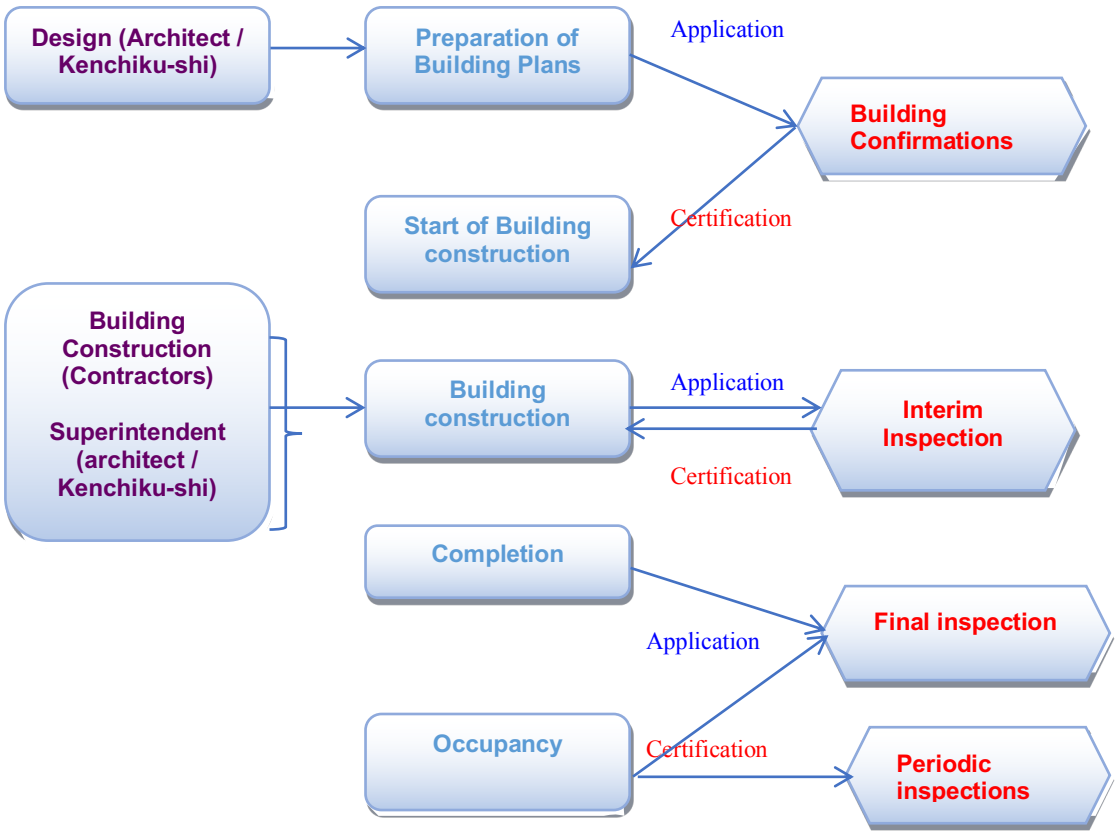

Figure 11: regulatory process for the planning permission and building construction phases in Japan

It is worth noting that at the design stage, the country distinguishes between 3 levels of licenced practitioners (known as Kenchiku-shi) and depending on their rank they may be authorised or not to design buildings of various category. The first-class qualified architects/Building engineers are authorised to design and to cover superintend for all types of buildings whereas the second class Kenchiku-shi can design and superintend construction work for small buildings only and the Mokuzo Kenchiku-shi can only design and superintend construction work of wooden buildings. Of interest it should be noted contrary to many jurisdictions where they represent separate professions and require separate licensing systems, Kenchiku-shi have the dual role of architects and building engineers in Japan.

The procedure for interim inspections is clearly prescribed within the BSL and requires that at the construction stage, the building owner must apply for inspection no later than 4 days after completion of the design process. Upon considering the application the officials are required to issue a certificate (permit to construct) without which construction work cannot start.

Inspections are carried out by the Special administrative agency for the public sector or by the Designated Confirmation and Inspection Body for the private sector.

The BSL also include the performance-based Building code, which deals with standards including the Structural Requirements, Fire Safety Requirements and Equipment and Sanitary Requirement. Alongside the mandatory BSL also exist other promotional laws such as the seismic retrofitting law, the building management law and the energy saving law.

The national building code has been amended over the years so as to be more resilient to the various earthquakes threat and as such the code has set stricter seismic building standards. Historically in 2013, Japan made further revisions to a 1995 law promoting seismic retrofits passed after the Kobe quake, to push more structures to meet the 1981 code

- **City Planning Law**

To support efficient urban activities, achieve a pleasant urban environment, and create townscapes by establishing urban land use planning system and infrastructure development system.

- **Fire Service Law**

To protect people, people's life, and property from fire and minimize damage caused by fire and other disasters, by providing codes concerning extinguishment facilities, alarm facilities etc.

- **Building Implementation Strategy in Japan**

Overall, the Japanese codes compliance are based on inspection coupled with certification for the technical side and based on points, with prescriptive and optional requirements for the energy conservation side. New buildings have to meet the minimum point requirements as well as the various certifications. The country has mandatory reporting on energy conservation for commercial buildings. State or provincial and local governments enforce and oversee the compliance of buildings with the help of third parties approved organisations.

Implementation is ensured at various levels as follows:

(i) Central government: the government contributes in the implementation of building laws and regulation by overseeing the whole process and particularly by issuing accreditations to building professionals and by putting in place adequate enforcement structures.

(ii) Local governments: it is their responsibility to review and inspect all building designs. In this task inspectors check buildings for compliance with structural and fire code requirements. Except for commercial buildings they do not check energy law compliance.

(iii) Designated confirmation bodies: These are third party approved inspectors who operate on the private sector only. They are regulated as specified in the BSL and they validate building designs before they are submitted to the local government.

(iv) Self-certification: this is a requirement placed upon building owners to provide the authorities with reports on maintenance of their building every three years. Where relevant they must also supply report on energy conservation.

The strategy adopted in the implementation process from the planning stage to the building delivery is one that attributes real responsibilities to all stakeholders. That approach can be summarised as shown in the below table 6:

	Design	Planning and Construction	Pre-Occupancy
Central Government	Oversight and accreditation	None	Oversight
Local Authorities	Review of permits, inspection and approval of building design Review of mandatory energy savings reports	Review and approval of interim applications Grant of certifications Carryout periodic inspections	Review and approval of the final inspection report Inspection, review of mandatory energy savings reports
Third parties (Kenchiku-shi; designated agency)	Review of building design before submission to local government	Review and approval of interim applications where relevant by the designated body;	Prepare mandatory energy savings reports Prepare reports for periodic inspections
Building Owners	None	None	Prepare reports on maintenance of their building every 3 years. Supply reports on energy conservation

Table 6: responsibilities of various stakeholders in the implementation process in Japan

It should be remarked that building regulations are perceived as effectively implemented in the country and various strategies have been adopted by the authorities to ensure that the implementation rate remains greater than average. For instance, as remarked by the IPEEC, Japan prides itself for being pro-active with respect to capacity building and training. As such the Institute for Building Environment and Energy Conservation holds training seminars to support implementation of the innovative parts of the building laws and regulations such as Energy Conservation Law every year. The

training is directed to construction companies, building engineers and architects, local resident and building owners so as to maintain the education mission.

The other strategy contained within the regulations themselves to maintain and enhance the implementation level includes the usage of penalties, incentives and other mechanisms. Accordingly, the statutory instruments provide for financial fines and name and shaming of non-compliant individuals or companies. In the same manner, the country has put in place incentives and/or rewards for the stakeholders to go beyond the minimum required performance level. As such "Japan offers subsidies and low-interest loans for high efficiency energy system to residential and non-residential buildings. In addition, there is a green investment tax rebate for non-residential buildings and support for Energy-Oriented Houses" (Evans et Al, 2009) even though the energy standards are not yet mandatory for residential buildings. Overall it is firmly established that using a combination of the control and regulatory tools along with economic and fiscal instruments and the voluntary actions, the policymakers have adopted relevant strategies which lead to the delivery of the building policy goals with greater fidelity. An emphasis is placed upon the strong enforcement framework which is said to be significantly better in comparison to countries such as China (Huang et al; 2016).

Despite the strategies adopted for the implementation of building policies as shown above, it should be noted that several barriers affect the effective implementation of building policies in the country, namely the high transaction costs and lack of applicable methodology for monitoring energy conservation compliance (Huang et Al; 2016).

The above strategies are reminiscent of the three tenets of Carrot, tambourines and stick and contribute to the observed effective implementation of building policies in the country.

3.2 Review of Implementation of building Policies in selected under-industrialised countries

This section reviews the implementation of building policies in south Africa, Nigeria, Ghana and Cameroon.

3.2.1 Building Regulations in South Africa

A desktop review of the building laws, regulations and policies of the Republic of South Africa suggests 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.

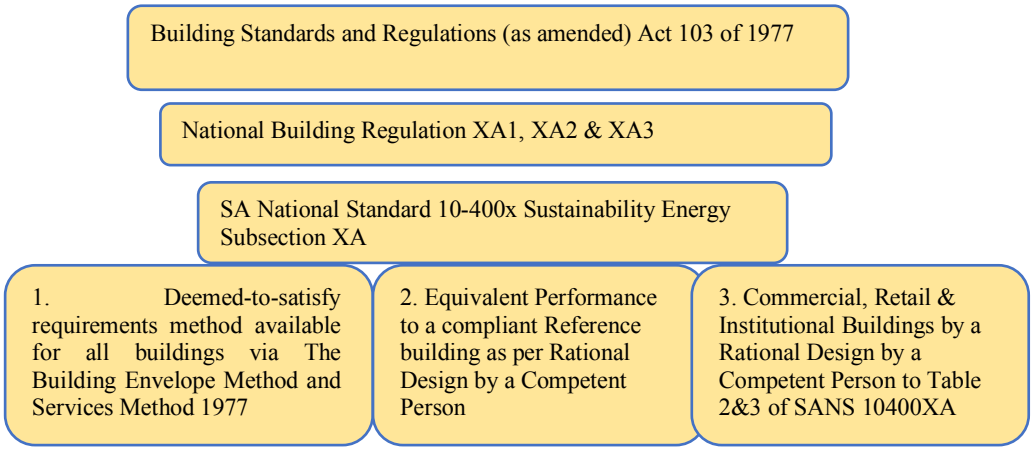

Figure 12: Overview of the South Africa building regulatory framework

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 7 summarises the country's building policies including laws, regulations and standards as well as their aim.

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: Pro-actively 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

Table 7: 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)

- **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 give 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, ibid). 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, ibid). 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 8 below:

	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; EPC (SANS) issued at various stages by designated authorities
The role of local Authorities	No building can be erected without the prior written consent of the local authorities	Multiple inspections during the construction phase.	Art14.1 of the Act requires the local authority to inspect and issue a certificate of occupancy within 14 days of completion if the work has been completed satisfactorily.	Software adapted for energy performance measurement (SANS 10400 Part X); Human resources (increase in budget for recruitment and training); Various certificates (SANS) issued

The role of Third Parties	Building Plans must be validated by a competent person such as engineers/architects before it can be approved by the local authorities (SANS10400XA) Non-Compliance leads to refusal of permission to build	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. Approved professionals and suppliers inspect and issue compliance certificates where so directed	All third parties can only be recognized as competent if they hold valid memberships from their statutory body or appropriate state certification	at various stages of construction Capacity building and education that support code implementation (international cooperation)

Table 8: Implementation mechanism of the SA building policies

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.

Planning permission and building construction process

- **Planning Stage**

The National Building Regulations & Building Standards Act (No.103 of 1977) stipulates that no person may erect, alter, add to, or convert any building without the prior approval of the Local Authority. The typical planning application is made of:

- Application forms obtained from your Local Authority
- Plans drafted by a qualified architect
- Standard forms from engineers who've consulted on the plans
- A copy of the title deed
- Zoning certificate
- If the application is for a building other than a residential house, it must be approved by the Fire Department, who will stamp the drawings.
- The relevant fee

The decision must be made within 30 days and the clock starts ticking from the moment a payment is made to the cashier.

It may be of interest to note that in the planning process, the National Home Builders Registration Council (NHBRC)'s Technical Division is entrusted with assessing planning application, particularly with compliance of design and where they deem the

submitted plans compliant with the NBR, a letter of approval is issued to the applicant with the authority to start building work. The application must be made by the owner or his representative and should include a report certified by a competent engineer registered by the Engineering Council of South Africa acting in a professional capacity.

- **Construction Stage**

Upon the approval of the plans submitted, the applicant is free to start his building work. Prior to the start of work, he is allocated a building inspector by the local authority. During the building process five or six compulsory building site inspections are required depending on the building type. They are:

- An excavation inspection (foundation trenches before the concrete is poured)
- Wall / Structure Inspections
- An open drain inspection (before they are connected to the municipal water and sewage system)
- Trench / Foundation Inspection – prior to concrete being poured.
- Concrete Slab inspection (where relevant before concrete poured).
- Roof Inspection

Prior to the start of any of the above stages the applicant or his representative must notify the building inspector and agree a mutually convenient day for the inspection.

- **Post-construction**

Upon completion of the building work, the building owner must apply and obtain an Occupation Certificate. This document is compulsory for every building before occupation as directed by the National Building Regulations and Building Standards Act (1977). The municipal authority will only issue the certificate where it is satisfied that all technical and safety requirements have been met.

The building policies and regulations are very clear and specific with the process of obtaining the Occupation certificate. In order to get an Occupation Certificate from Council the applicant must submit the following documents:

- A copy of the approved Building plans from the Municipality
- A copy of the Completion Certificate from a registered Engineer (this is for the Foundations, Concrete Slabs, Staircases, Wooden / Suspended floors, Steel

work, Roofs, freestanding Walls over 2.1m high, swimming pools and all structures built without prior planning permission).

- A copy of the Roof Truss Certificate issued by either the supplier or installer. If they did not provide one the certified engineer can issue one upon inspection.
- A copy of the Certificate of Compliance issued by the Institute of Plumbing South Africa – this is required for all plumbing / drainage / sewerage work. this certificate is issued by registered certified plumbers, members of the institute.
- A copy of the Glazing Certificate issued by the glazier
- A copy of the Electrical Certificate of Compliance issued by a registered Electrician.
- A copy of the Fire Certificate (for all public buildings and buildings using flammable materials)

The process is relatively straightforward and can be summarised as shown in the below table 9:

Pre-Planning stage	Planning application stage	Building Construction phase
Design in Compliance with NHBRC (plans certified by a regulated engineer)	NHBRC approves the plan: they must comply with Municipal regulations (zoning requirements, site development plans, title deed, building line relaxation, etc.)	Municipal authorities carry regular inspections and issue Building certificates upon completion of each suitable inspection (foundation, Roof truss, plumbing, glazing, electrical, fire, completion, etc.) Municipal authority also issues the Occupancy Certificate at the end of building work.

Table 9: Planning and Building process in South Africa summarised

- **Conclusions**

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 & Ntombizodwa Mazibuko 2015, Laubscher, J 2011, and Watermeyer 2010). Several causes are identified for the failure of effective implementation and amongst other reasons Twum-Darko & Ntombizodwa Mazibuko (ibid) 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 policies, 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.

3.2.2 Building Regulations in Nigeria

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 libel 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 Part6 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**

Based on 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 environment 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 & Rotimi; 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 & Rotimi (ibid) 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 et Al, 2012). A field study carried out by Olaitan and Yakubu, (2013: p145) 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 (ibid) point to the current construction practices and opine that they are unsustainable due to poor adherence to existing regulations. Dauda et al (20120 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.

Conclusions:

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.

3.2.3 Building regulation in Ghana

A review of the Ghana building laws and regulations shows that the development of the National Building Regulations has its roots 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 Part17 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 of Ghanaian Building Regulations

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 are 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 co-operate 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; 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 constructed 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.

Conclusions

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.

3.2.4 Building Regulations in Cameroon

The regulatory framework of the republic of Cameroon is rather blurred when it comes to the building construction sector. The building laws and regulations in the jurisdiction can be described as 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 the it is effectively implemented in practice. These include amongst others the Ordinance No.0002/E/2/MINDUH of 23 May 2011 establishing a model for building permit applications, Ordinance No.0003/E/2/MINDUH of 23 May 2011 establishing a model for permit to implant applications, Ordinance No.0004/E/2/MINDUH of 23 May 2011 establishing a model for demolition permit applications and the Ordinance No.0005/E/2/MINDUH of 23 May 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 No 99/443/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 crated 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 COP 21 in Paris, concerted actions 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).

Like in other jurisdictions identified above the country's attempt to comply with existing building policies is observed through a two-stage process: the planning and the building constructions phases respectively.

- **Process of implementing building policies in Cameroon**

In reviewing the Cameroon construction laws and regulations, the first and most important feature that transpires is that like the UK the process is dual with one planning phase followed by a construction phase. Whilst the planning activities are clearly regulated by the 2004 statute and the relevant implementation decrees of the Prime Minister nothing is done to ensure that building are constructed in accordance with the approved planning permission. Also, the process as shown above exposes a clean break between the two phases with no relationship as once the planning permission has been granted the builder can simply embark on the execution of his project. There is no requirement to notify the authority when the construction phase has started and there is no efficient mechanism to control building sites.

Stage 1 Planning: (Law No 2004/003 of 21 April 2004; The Prime minister decrees No.2008/0737/PM of 23 April 2008 laying down safety, hygiene and sanitation rules applicable to construction works and No.2016/3058/PM of 28 July 2016 laying down land use and construction rules)

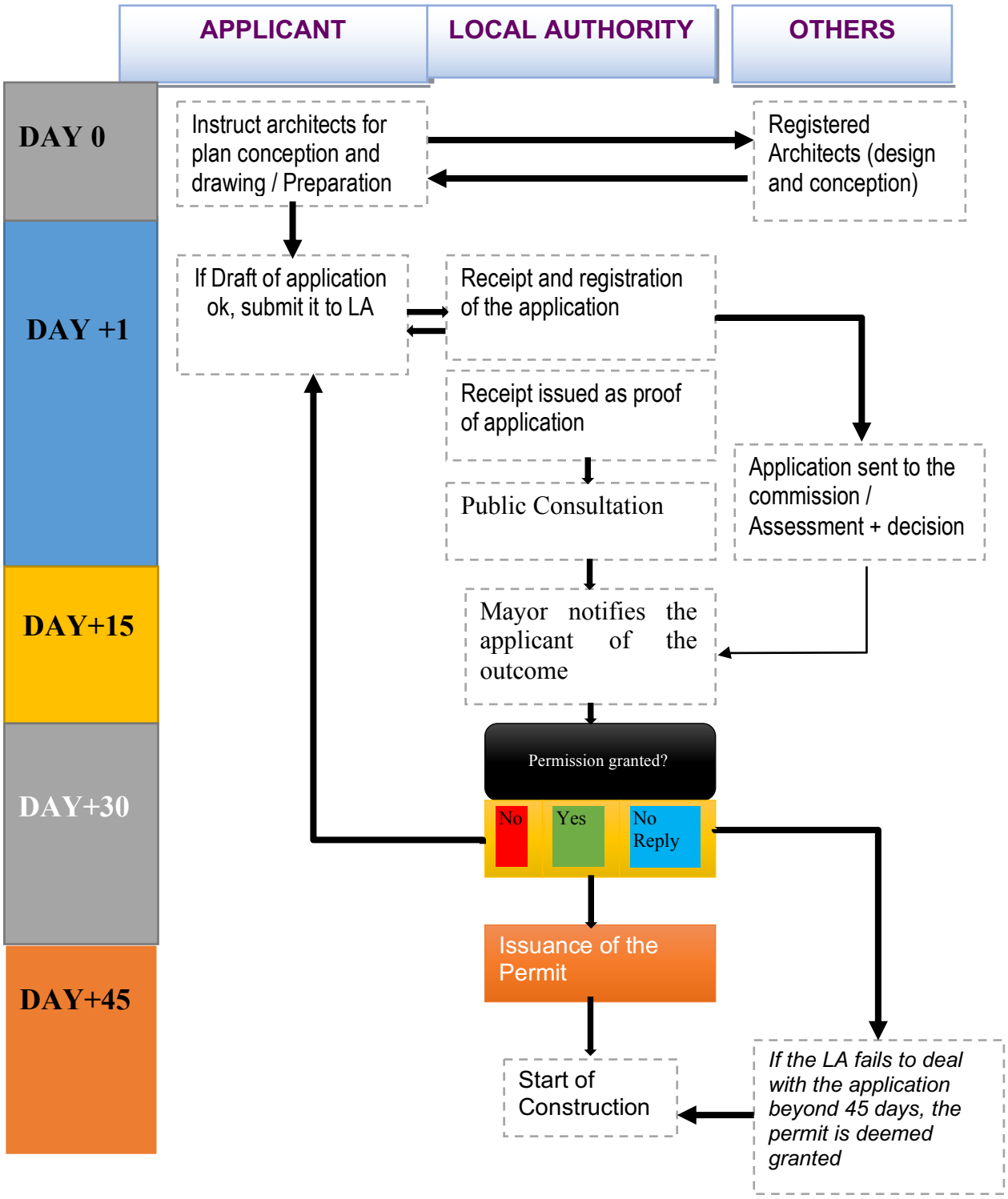

Figure 13: Planning application process in Cameroon

<u>Stage 2</u>: Construction: (Law No 2004/003 of 21 April 2004; Decree No.2016/3058 of 28 July 2016 laying down land use and construction rules; ANOR (NC234:2002-06 to NC114:2002-06; NC234:2009 to NC235:2009; NC236:2006 to NC238:2006 and NC552:2014 to NC1640:2014)

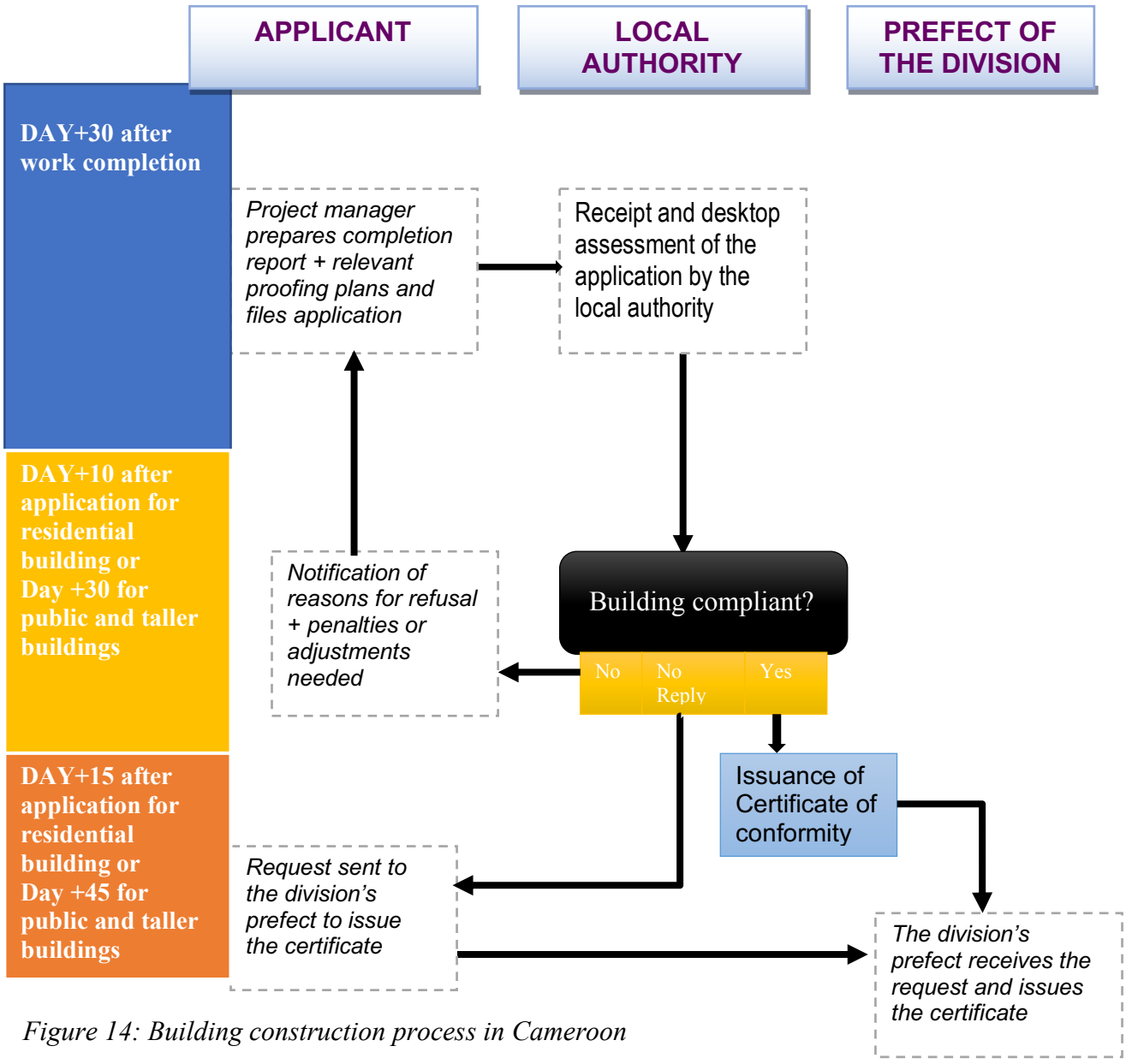

Figure 14: Building construction process in Cameroon

Implementation strategy

An objective of the analysis of the Cameroonian building policies along with the existing process indicate that the policymakers have adopted a pure top-down strategy

in their effort to ensure that the laws and regulations are effectively implemented. In that perspective the prescriptive laws and regulations are implemented directly by the 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.

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 observe implementation failure as described by researchers (Bikoko and Tchamba; 2015).

Conclusions:

In conclusion the review of the legislative and regulatory framework for the building construction activities has yield 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 (ibid) point to the fact that despite the strategy adopted, existing laws and regulations are not effectively implemented in practice.

3.3 Chapter Conclusions

This chapter has highlighted the nature of building policies in a number of identified countries, and from the review it transpires that in industrialised countries building policies are well structured and processes enunciated and referenced in a cogent and fluent manner. That fluency associated with a good balance of successful strategies made of the combination of "carrot, tambourine and stick" methods contribute to the effective implementation of building polices. It is observed that in these jurisdictions innovative strategies are adopted from the policy conception through to its implementation with clear policy objectives and measurable goals defined from the outset. That preparedness and organisation compute together to set a favourable path to effective implementation of building policies. Overall it is observed that in those countries despite the challenges due to innovation in the building sector, existing policies are adequately implemented. Unfortunately, the review has also revealed that the picture is different in the specified under-industrialised countries where a lack of clarity and confused processes are observed in the building construction field in general. In those countries it appears that policies are developed without adequate regard to the

local context and that processes and strategies are unbalanced and unclear. The unplanned nature of the policy delivery and the lack of foreseeability associated with the poor economic environment and inappropriate delivery strategies conjugate to hamper the implementation of building policies. This dire picture makes it difficult to effectively implement the already poor building policies.

CHAPTER 4: RESEARCH METHODOLOGY

4.0 Introduction

This chapter presents the philosophical theories underpinning this research and summarises the research strategy and methods adopted throughout the investigation to adequately meet the research aim and objectives. The chapter also outlines the scope of the research design and situates the research amongst existing research traditions in the policy implementation field. The chapter is divided into five sub sections. The first subsection covers a summary of the philosophical positioning of the research. The second subsection revisits the aim and objectives of the research and identifies the data needed to satisfy the set aim. The third subsection presents the general overview of research methods and methodology within the literature. The fourth subsection is purely about the research method adopted in this research. It specifically describes the research approach followed in case study research as well as the research design and covers the reasons for selecting Cameroon as case study country. The fifth subsection exposes on the care and precaution taken in prosecuting the research in compliance with the ethics requirements.

4.1 Philosophical positioning

A better understanding of the philosophical basis of any given study usually leads to a smoother application of the methodology of a scientific investigation. The positioning of this research within the different philosophies of social science is one of pragmatism. The pragmatism philosophy in research advocates that concepts are only relevant where they support real action or programs. Whilst this philosophy recognises that there are different ways of conducting research and interpreting phenomenon it encourages the inquirer to focus on "what works" and on finding solutions to the issues being investigated (Creswell; 2004, p11). This philosophy was adopted in the context of this research because it allows the flexibility to use whatever combination of methods necessary to solve the research question and meet the objectives. Under the pragmatism philosophy the most relevant factor is the research question, and unlike the positivism and the interpretivism philosophies which are exclusively deductive and objective in nature for the former and inductive and subjective in nature for the later, it combines the two values and operate under the banner of both qualitative and

quantitative methods or both combined without limitation. The fundamental driver, like for all research philosophy was the comprehension that knowledge is objective and as such objectivity should at all times remains at the heart of all scientific investigation. The investigation, subject of this thesis is to explore the building laws, policies and regulations and assess the outcomes of their implementation in order to develop a strategic instrument that can assist in limiting the hindrance effects of identified barriers in developing countries. A good understanding of the dynamics of the policies, processes and stakeholders may contribute to the development of a successful instrument. With the pragmatism approach the data collection and analysis activities were driven by the main motive of solving the research aim and as such various strategies were applied.

4.2 Revisiting the research aim and objectives, and identifying the data needed to meet the objectives

As detailed in Chapter one above, the main aim of the research is to design and develop a tool that enhances and facilitates the implementation of sustainable building regulations and policies in developing countries. As stated, a successful instrument will be one that:

- Guides regional and national policy-makers in the policy development;
- Guides policy implementers of the building sector to achieve a greater rate of success;
- Stimulates debate and encourage exchange of best practices and learning of building policies implementation in developing countries;
- Triggers stakeholders' interest, adherence and compliance with existing building policies.

The objectives of this research are to:

- To review the theories underpinning the implementation science.
- To identify, evaluate and assess the level of implementation of the existing building laws and regulations in developing countries.

- To identify and evaluate the strategies adopted by various countries in their quest for effective implementation of their national building laws and regulations.
- Assess the extent of the issues affecting the implementation of building policies, laws and regulations.
- To identify and evaluate the critical success factors capable of triggering successful implementation in the built environment context.
- To develop an effective implementation instrument specific to the building construction field.

This aim and objectives imply four main issues. The first is to identify whether there are actual building laws, regulations and policies in the targeted jurisdictions and to understand their nature as well as the extent of their implementation, whereas the second is to explore the quality and barriers to effective implementation of the identified policies, laws and regulations in practice. The third issue is to explore a best practice approach to achieve successful implementation of policies, laws and regulations with specific reference to the building construction field, and the fourth issue consists in drawing from the understanding gathered and from the existing literature and experience observed in practice to build a strategic instrument aiming at achieving a much successful implementation of existing building policies, laws and regulations in developing countries.

To answer the research question concerning whether there are actual building laws, regulations and policies in the targeted jurisdiction and to understand their nature as well as the extent of their implementation, it was necessary to collect data at the local, national and international levels. That was done through a thorough desktop review of building policies and laws of specific countries and through a general survey of all category of stakeholders of the building construction field. As highlighted in chapters two and three, it is theoretically argued that amongst other factors impeding the effective implementation of policies lack of clarity and unrealistic feasibility of the policy goals are prominent. It is submitted that this activity was necessary to identify the true nature of building policies and regulations in the targeted countries. By understanding their nature adequately policymakers would be in better place to develop

fit for purposes policies or to take the appropriate step so as to adjust them where necessary.

Also, as reviewed in the preceding chapters on literature review, scholars have identified a number of factors which they considered that depending on their context may be non-conducive for the effective implementation of any policy and regulation in general. It was considered necessary to establish in the local context and particularly in the building construction field and from the subjective perspective of all actors what prevented the existing policies from being adequately implemented. To achieve this purpose, it was considered that gathering data through interviews with various actors of the building construction field would assist in elucidating the question. This activity was judged necessary as the identification of barriers would contribute in developing a sounder implementation instrument in due course.

With respect to the third issue about the exploration a best practice approach to achieve successful implementation of policies, laws and regulations with specific reference to the building construction field, it was considered that in addition to the various theories advocated by scholars and implementers, an input from all categories of stakeholders of the building construction sector would be beneficial. On that basis focus group discussions were identified as the best vehicle to gather data which upon analysis would assist in the process of developing a helpful instrument capable of systematically increasing the implementation level of building policies in the construction sector.

Finally, with respect to the overall aim of the research which is to develop a relevant instrument for effective implementation of building policies, laws and regulations it was considered important to draw from the various existing theories, models and to integrate the results and conclusions drawn from the data collected and analysed to develop an instrument fit for its purpose.

Because the instrument developed at the end of the research process will be initially considered as theory only, it was judged that it would be important to test it so as to be certain of its validity. That test was done using the measurement theory, which as stated by Gilbert (2001) has the main aim of linking the reality of the subject investigated with facts observed in practice in order to determine the validity and reliability of the indicator variable. In the light of the above it was judged that the developed instrument

would benefit from a critical evaluation by a panel of experts and representative sample of all category of stakeholders through an adequately designed focus group discussion activity and survey questionnaire.

Overall the strategy adopted in this research to reach the aim and objectives identified above was of a flexible design using a case study research model. Yin (1994) advocates that the case study design is useful because with it, the types of research methods that can be incorporated into the research design are not limited. Curry et al (2009) agree with that view and advocate that conclusions reached during research projects are more rigorous and accurate when they are based on combined sources. This method would therefore enable the use and combination of various research methods including quantitative (through questionnaire surveys), qualitative (through interviews and focus group discussions), mixed method and triangulation.

4.3 General overview of the research methods and methodology

Research is a term used liberally for any kind of investigation that is intended to uncover interesting or new facts (Walliman 2011). As general definition, Kumar (2011, p28) summarises that research is a process for collecting, analysing and interpreting information to answer questions. He insists that to qualify as research, the process must be characterized by its nature by being controlled, rigorous, systematic, valid and verifiable as well as empirical and critical. In the same perspective Thagaard (1998) points out with emphasis that the credibility, validity and transferability of research depend upon the explicit knowledge based: the way in which the data has been collected, analysed, and interpreted.

Research will not be meaningful if it lacks in credibility and as such Yin (ibid) and Curry et al (ibid) insist that conclusion reached during research projects based on various sources are more convincing and likely to be accurate. It therefore transpires that the joint use of diverse and divergent methods of research is encouraged for better outcomes. Therefore, it is important to describe the data collection and analysis process, as well as discuss the fieldwork done in Cameroon.

Although they differ in their underpinning philosophies and, to some extent, in the methods, models and procedures used as stated by Kumar (ibid) both qualitative and quantitative methods were used to prosecute this research. That choice was based on

the adopted pragmatism philosophy and on the conviction that the two methods are interactive and operational at different points in time in the research process as highlighted by Newman and Benz (1998). Furthermore, and most importantly, the option to combine both quantitative and qualitative methods in this enquiry was exercised due to the possibility that it gives to converge the broad numeric trends picked up from the survey and the participants' views gathered through the interviews and focus group discussions to draw conclusions, which would guide in the development and evaluation of an instrument that could enhance the implementation of building policies.

In term of methodologies, several authors distinguish between a **structured approach also known as quantitative and unstructured approach also known as qualitative to research** (Kumar; ibid). However, over the past few decades a trend has emerged, and it is now commonly agreed that three research approaches exist: qualitative, quantitative and a mixed method (Creswell; ibid). With respect to their nature, Kumar (ibid) clarifies that a study is classified as qualitative if its purpose is primarily to "describe a situation, phenomenon, problem or event; if the information is gathered through the use of variables measured on nominal or ordinal scales (qualitative measurement scales); and if the analysis is done to establish the variation in the situation, phenomenon or problem without quantifying it. The description of an observed situation, the historical enumeration of events, an account of the different opinions people have about an issue, and a description of the living conditions of a community are examples of qualitative research" whereas a study is classified as quantitative "if you want to quantify the variation in a phenomenon, situation, problem or issue; if information is gathered using predominantly quantitative variables; and if the analysis is geared to ascertain the magnitude of the variation".

In one hand in general, the qualitative method is one that focuses on interpretation rather than on quantification, places more importance on subjectivity than on objectivity and is very flexible in the research process. "One of the cornerstones of the qualitative approach is its acceptance of the inherent subjectivity of the research endeavour" (Bryman, 1988). "search for objectivity is to some extent misguided for it is the participants' perspectives on and interpretations of the situation which are of value in understanding behaviour" (Cassell and Symon; p4, 1994). This method is implemented

through the use of several vehicles for the data collection including interviews, focus group discussions, observations and documents collection. In the other hand quantitative method as the name indicate focuses on a "quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population" (Cresswell; ibid p153). With this method measurable data are used to formulate facts and establish patterns in research. The quantitative method considered as based on deductive rather than inductive approach. In practice, quantitative data is often executed through systematic observations and various surveys, questionnaires developed and structured to provide the researcher with numerical data obtained from a small sample that can be analysed statistically and yield a result that can be applied to the general population.

The two methods are different from their relative perspectives and the difference is spotted from their underpinning philosophy to the way the data are collected and analyzed. In considering the activities of each method Hennink et Al (2011) observe that qualitative approach allows the researcher to analyze people's experiences by using specific methods such as in-depth interviews, focus groups discussions, observation, content analysis, visual methods and life histories or bibliographies whereas the experiments and surveys represent the typical activities of the quantitative method. An overview of the characteristics and distinction between the two methods is clearly highlighted in the table 10 below:

Difference with respect to:	Quantitative research	Qualitative research
Underpinning philosophy	Rationalism: 'That human beings achieve knowledge because of their capacity to reason' (Bernard 1994: 2)	Empiricism: 'The only knowledge that human beings acquire is from sensory experiences' (Bernard 1994: 2)
Approach to enquiry	Structured/rigid/predetermined methodology	Unstructured/flexible/open methodology
Main purpose of investigation	To quantify extent of variation in a phenomenon, situation, issue, etc.	To describe variation in a phenomenon, situation, issue, etc.
Measurement of variables	Emphasis on some form of either measurement or classification of variables	Emphasis on description of variables
Sample size	Emphasis on greater sample size	Fewer cases
Focus of enquiry	Narrows focus in terms of extent of enquiry, but assembles required information from a greater number of respondents	Covers multiple issues but assembles required information from fewer respondents
Dominant research value	Reliability and objectivity (value-free)	Authenticity but does not claim to be value-free
Dominant research topic	Explains prevalence, incidence, extent, nature of issues, opinions and attitude; discovers regularities and formulates theories	Explores experiences, meanings, perceptions and feelings
Analysis of data	Subjects variables to frequency distributions, cross-tabulations or other statistical procedures	Subjects responses, narratives or observational data to identification of themes and describes these
Communication of findings	Organisation more analytical in nature, drawing inferences and conclusions, and testing magnitude and strength of a relationship	Organisation more descriptive and narrative in nature

Table 10: Quantitative & Research Overview (Source: Kumar (2011); p38

Whilst discussing about the two research methods, many authors insist that whatever method a researcher choose, good research must be rigorous, systematic, integrated and focused (Peters and Howard, 2001). It should also aim at either developing or enhancing a theory or problem solving.

As to **the mixed approach,** it involves collecting both quantitative and qualitative data and integrating the two forms and using separate designs that may involve philosophical assumptions and theoretical frameworks (Creswell; ibid). The core assumption of this form of enquiry is that "the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem that either approach alone cannot do (Creswell; ibid). In the same vein when discussing the reliability of a research, Curry et al (ibid) argue that conclusions reached during research projects are more rigorous and accurate when they are based on combined sources. The simultaneous use of different methods of research can be very important as both

qualitative and quantitative methods have their advantages as well as disadvantages. The use of this combined methodology in the study of the same phenomenon is also known as **triangulation** by many authors (Neuman, 2006). In that respect Todd (1979) shares the same view as Curry et Al by advocating that the use of combined methodologies in the research allow for greater accuracy. Kumar (ibid) also follows the above views by strongly discouraging the researcher "to lock himself into becoming solely" either a structured or solely an unstructured researcher as doing so could adversely impact upon the accuracy of the findings.

4.4 Approach and Methods adopted for this research

4.4.1 Research Approach

The research question was investigated using a single case study research design. The choice of this design was motivated by the findings of scholars and practitioners on designing a research of this nature. For instance, Yin (ibid; p12-13) defines a case study as a design for investigating "a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." Yin (ibid) recommended this design and emphasized on its usefulness as the types of research methods that can be incorporated into the research design are not limited. The case study, as a research design therefore directs specific attention to a phenomenon that is contextually bounded. This reflects exactly the situation of this research as the outcome of building policies is largely dependent on the context in which it is being deployed. Cassell & Symon (1994; p212) advocate for the use of case study in this context as its strength lies in its capacity to "explore social processes as they unfold". They go on to submit that with case studies, the researcher can learn much more about processes than is possible with other techniques. It was therefore concluded that a case study design was particularly deemed fit for its purpose in this research because as stated by Cassell & Symon (ibid; p213) case studies are typically tailor-made for exploring new processes. This is relevant to the research objectives as one of them includes exploring new processes (including informal and illicit behaviors) with the view of developing an implementation instrument. Furthermore, Kumar (ibid) insists that to be considered as case study the total study population must be treated as one entity. Accordingly, he suggests that the case chosen should be assumed as atypical of cases of certain type and consequently "a single case can provide insight into events

and situations prevalent in a group from where a case has been drawn." The main aim of the research was to develop and introduce a tool that can enhance the implementation of sustainable building laws and regulations in developing countries. Countries of that category usually share similar historical and administrative organization and it is well documented that building practices in those countries share the same characteristics. Those countries have very similar issues in term of climate and building forms and their standards are very similar as shown in chapter 3 above. It is submitted that Cameroon, a formal colony of Britain and France is well representative of the sub-Sahara African countries and the outcome of a research on building regulations in this country would be similar to other countries of the region. The outcome of the case study was largely used to design the framework as shown in Chapter 7 below.

- **The 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 Central African Economic and Monetary Community more commonly known under its French abbreviation CEMAC. 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 region 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, its dual legal system (common law in the English-speaking regions and civil law in the French speaking regions) 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 the diversity of landscapes and climates has direct consequence on the built environment through the architecture which usually reflects the customs and ways of life of the diverse populations. In a striking manner

the country has the various climates existing in the whole of South Sahara Africa as evidenced by the rain forest in the southern part of the country, a more temperate climate combining landscapes of forests and grassland in the plain of Massif in the Adamawa region and a dry tropical forest of Sahelian type, and further find semi-desert landscapes in the extreme North part of the country. The laws and regulations as well as the building construction policies of the country are defined by the government through the MINDUH. The implementation of laws and regulations are mostly left to the municipalities.

In the context of this case study in Cameroon, the research started with a survey from a good number of participants extensively and proportionally representing all categories of relevant stakeholders (Quantitative method), after the initial literature review, in order to set the stage for a detailed inquiry. The qualitative interviews, besides serving as a continuation of the survey, helped to strengthen the results from the surveys and some of the findings from literature. Overall, case study became necessary for in-depth exploration. Within the case study methodology, interviews and focus groups activities (Qualitative methods) and surveys (quantitative method) were used with some serving as triangulation for others.

4.4.2 methods of data collection in this research

In the light of the above option to use a single case study design and given the nature of the enquiry the sequential mixed methods of data collection and analysis design with great emphasis on the qualitative method in the pursuit of this research was adopted. This choice was made on the basis that it would enable the research aim to be met in a rigorous and more convincing manner. This option was more adequate as the intended investigation required gathering objective and subjective opinions of various stakeholders as well as their experience knowing the cultural and educational level of the actors of the building field in the countries, subject of the investigation. It was assumed that exploration of those views would influence the development and evaluation of the proposed instrument with a sample from a population and make the tool more relevant. The quantitative and qualitative methods along with the triangulation were completed in the manner detailed below:

4.4.2.1 Quantitative method

Creswell (ibid) explains that strategies associated with quantitative research are no longer limited to those known as true experiments and quasi-experiments. Creswell confirms that other strategies including a survey research also provide "a quantitative or numeric description of trends, attitude or opinions of a population by studying a sample of that population. It includes cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection" with the intent of generalizing from sample to a population. Newman and Benz (1998) submit that most quantitative research approaches, regardless of their theoretical differences, tend to emphasize that there is a common reality on which people can agree. On that logic, the quantitative method was employed in this research at various stages. Initially, it was used through the survey carried out at the initial stage of the inquiry as shown in Chapter 5 below as well as at the end of the investigation after the development of the framework during the evaluation process described in chapter 8. Because the overall strategy used in this research was to use the mixed method, a quantitative analysis was also conducted through the counting of the number of references made by interview participants for each node coded and through the number of recorded and classified counts of the focus groups interventions. This quantitative coding measured the frequency of mention rather than the respondents' position or interest in the topic as this was already done through the qualitative analysis.

4.4.2.2 Qualitative method

Bearing in mind the nature of the research questions, it was felt that the use of a qualitative method of research would be relevant. The objectives of this research were to carry out a case study on Cameroon by examining whether sustainable building laws and regulations exist in the country; to assess their effectiveness and determine whether they are effectively implemented; to draw from the findings to make sustainable proposals for the way forward as to how to enhance the implementation of those building policies. Various data collection vehicles were used to gather the qualitative data. To achieve the research goals, an exploratory approach to qualitative data collection was adopted by choosing to use Cameroon as case study. This country constituted the field for the raw data collection. Through the use of four specific instruments namely the desktop review of relevant books, journals and publications,

survey questionnaires to relevant stakeholders, in-depth semi structured interviews and focus groups at various stages of research.

4.4.2.2.1 Desktop review of various published materials

A desk-based review of primary and secondary literature sources on building laws and regulations in general with greater focus on sub-Sahara African countries was undertaken at the early stage of the research and throughout the process. Also, the Cameroon's specific situation was critically reviewed by going through the various building related laws, regulations and policies existing in the country. In addition, information on policymaking, policy analysis and evaluation and the role of various stakeholders as well as examples of Building Codes developed and implemented in other jurisdictions were reviewed to set a basis for an analytical framework for the interpretation of the data subsequently collected. The information drawn from the review was used to develop the initial hypothesis and the ultimate framework. In this process, much relevant information was gathered through Internet sources; great care was exercised throughout the research in the handling of those information and data as the lack of independency may mean that most of it would be either unreliable or biased.

4.4.2.2.2 In-depth Qualitative interviews

After the initial literature review and the initial quantitative surveys, it was important to further the inquiry. It was therefore considered that, besides serving as a continuation of the quantitative survey, one on one interviews could help strengthening the results from the findings and from the literature review. In that perspective, individual one-on-one semi-structured interviews were conducted to gather more information on building regulations and practices in the case study country as well as their level of implementation. Participants were of various backgrounds. They were selected so as to cover the various perspectives of municipality staffs, those of the central government staffs as well as the selected building practitioners in their specific roles in the policy development and implementation process of the building industry. The aim of the interviews was to gain in-depth information about the building policy making process, its implementation and the involvement of other stakeholders in this process. The interviews also aimed at finding out participants' views on how the building laws and

regulations are implemented in Cameroon and in England as well as gathering participants' view and experiences on best practices on the subject of implementing building policies in general. The interviews were all semi structured in order to allow the interviewees to respond about the topic of discussion freely, with only a few questions from the researcher. The results of the interviews were used to shape up the focus group activities and to elaborate more on the ultimate findings of the research.

The analysis of interviews was initially inductive, as the meanings of each respondent's comments was codified and placed into different 'nodes' using the NVIVO 10 software. The thematic content strategy was used in the analysis process. This method of data collection contributed in better understanding not only of the causes of non-implementation of building policies, laws and regulations in developing countries but also in understanding and evaluating the processes and practices on the ground and to identify weaknesses and pitfalls of the current implementation system.

4.4.2.3. Focus groups

A focus group approach was used as data collection method for the enquiry, as it can encourage participation from people reluctant to be interviewed individually or who feel they have nothing to say (Kitzinger, 1995). Kitzinger also explains that this method was particularly useful for exploring people's knowledge and experiences and can be used to examine not only what people think but also how they think and why they think that way. As such it has the advantage of encouraging participants who would have been reluctant to take part to individual interviews to participate. To be fully beneficial the group must comprise between six and twelve participants only (Kumar; ibid). It was also reiterated that despite this material evidence of the usefulness of this method of data gathering, the researcher should be aware of the down sides of the focus group approach including that the data they generate can be as cumbersome as they are complex (Kitzinger; ibid) because the risk is greater for the researcher to miss important issues and data if he lacks rigor and concentration. This method is recommended in certain research types as it can assist with the triangulation process. For instance, while surveys repeatedly identify gaps between knowledge and behavior, only qualitative methods, such as focus groups, can fill these gaps and explain why these occur (Kitzinger; ibid). In any event the quality of the data gathered largely depends upon the

sampling. As stated by Kumar "when selecting sample, you should attempt to achieve two keys aims of sampling the avoidance of bias in the selection of a sample; and the attainment of maximum precision for a given outlay of resources". This principle was kept in mind throughout the exercise.

In this research focus groups discussions were conducted upon review of the data gathered from the initial survey and proceeded at the same time as the in-depth interviews. The main aim of this activity was to collect the stakeholders' views and recommendations on the issues drawn from the analysis of the surveys and interviews data as well as to collect participant's views on proposed solutions knowing that the data gathered would assist in the development of a future strategy. Also, the aim of the focus group discussion held at the end of the research after the development of the proposed strategy was to assess the draft framework. It also served as way of triangulating the data gathered from the survey and interviews methods. Overall the focus group discussions took place in two stages and in the form of workshops. The first discussion groups during the main research phase were concerned with discussing the causes of non or inadequate implementation, current practices and suggestions on what could be the solutions to the difficulties identified and the second stage was as stated at the conclusion of the research after the instrument was developed. It aimed at collecting the stakeholders' views on the draft instrument and to validate it. Because of the lack of reliable statistical data in the country and bearing in mind the foreseeable difficulty of obtaining adverse relevant data from policymakers or building practitioners during individual interviews, participants of the focus group were encouraged to express their views more freely. The sense of belonging to a group rather than an identifiable individual contributed in obtaining more relevant and accurate data. Participants were targeted and selected upon receipt of the initial survey and interviews' replies and after their analysis in order to achieve the best possible outcome. The number of participants in each group was limited to 8 to give every participant the chance to fully develop their thoughts and suggestions.

Drawing from the information gathered during the workshops as well from the data gathered from the survey and interviews a framework that would enhance the implementation of modern building regulations in developing countries was designed. After the development of the proposed instrument, a further group discussion in the form of workshop with experts and stakeholders of the building construction sector took place with the view of assessing and validating the tool. The feedback provided in

a short questionnaire was recorded and used to evaluate the tool as highlighted in Chapter 8.

4.5 Ethical compliance

As stated in its Code of Research Conduct and Research Ethics (version 6, 2016) "the University of Nottingham requires all staff and students engaged in research to maintain the highest standards of rigour and integrity in the conduct of that research". The code emphasises that researchers are expected to follow the ethical behaviours made of selflessness, integrity, objectivity, accountability, openness, confidentiality and honesty. To ensure that this policy is strictly adhered to by researchers the University requires all researchers to submit applications for ethical approval before conducting their proposed research where it involves human participants. In compliance with this requirement, an application was submitted to the ethic committee which vetted and approved the proposed research with specific reference to the surveys, interviews and focus group discussions before all involvement with the selected participants. The committee's approval is attached to this thesis as **appendix 1**.

Given its nature, three ethical issues received an enhanced attention in the conduct of the research. The first issue was the informed consent of participants. Appropriate steps were taken to ensure that participation was on a voluntary basis and that prior to taking part adequate and full information was given to participants about the project. Accordingly prior to the interviews and focus group activities, a document entitled "Participants Information Sheet", a copy of which is attached to this thesis as **Appendix 2** was given to each participant confirming the nature of their participation and stating that their contributions would be digitally recorded and anonymized prior to any publication and reiterating that they could withdraw their participation at any time including after they have taken part, but prior to the publication of this thesis. The whole information was reiterated orally prior to the start of each activity and the participant was invited to give an expressed consent to take part by signing the consent form, a sample copy of which is attached as **Appendix 3**.

The second ethical issue which drew specific attention was anonymity. In the data collection process, appropriate step was taken to reassure participants that their anonymity will be guaranteed. That guarantee was also enforced in the data analysis

process by ensuring that participants were not identified by name or by other qualifications which could lead to their identification. It was always particularly important to ensure that participants will remain safe and that there would not be any adverse impacts for them due to their participation. Accordingly, each participant was assigned with a code as will be shown in later chapters when reporting the research findings.

The third ethical issue on which the attention was given was related to Data Interpretation. Care was taken in the data analysis to ensure that there was no misstatement or misrepresentation of the statements made. This was done by sending the written version of the transcribed interviews to each participant with the request that they indicate whether the content was an accurate transcript of their statements. None of the participants challenged the transcribed version of their interviews and as such it was concluded that there was no misstatement or misrepresentation. in the same perspective, appropriate step was taken in the reporting by referring to quotes given by the participants in the reporting sections as shown in the subsequent chapters below. This was done to give the reader the opportunity to decide to what extent the interpretation of the data collected is believable.

4.6 Chapter Conclusion

An overview of the general research methodology has been covered in this chapter and shows that drawing from the theories, an appropriate design was conceived for this research project as well as clear data collection methods. The single case study of Cameroon was chosen as the study design and the methodology followed to reach the aim pursued in this research is a combined one where both qualitative and quantitative data collection strategies are applied. The various vehicles used and the reasons for their choice have been presented along with the relevant phases. Overall the outline of the methodology, data gathering, and analysis process applied in this research is illustrated in below figure 15:

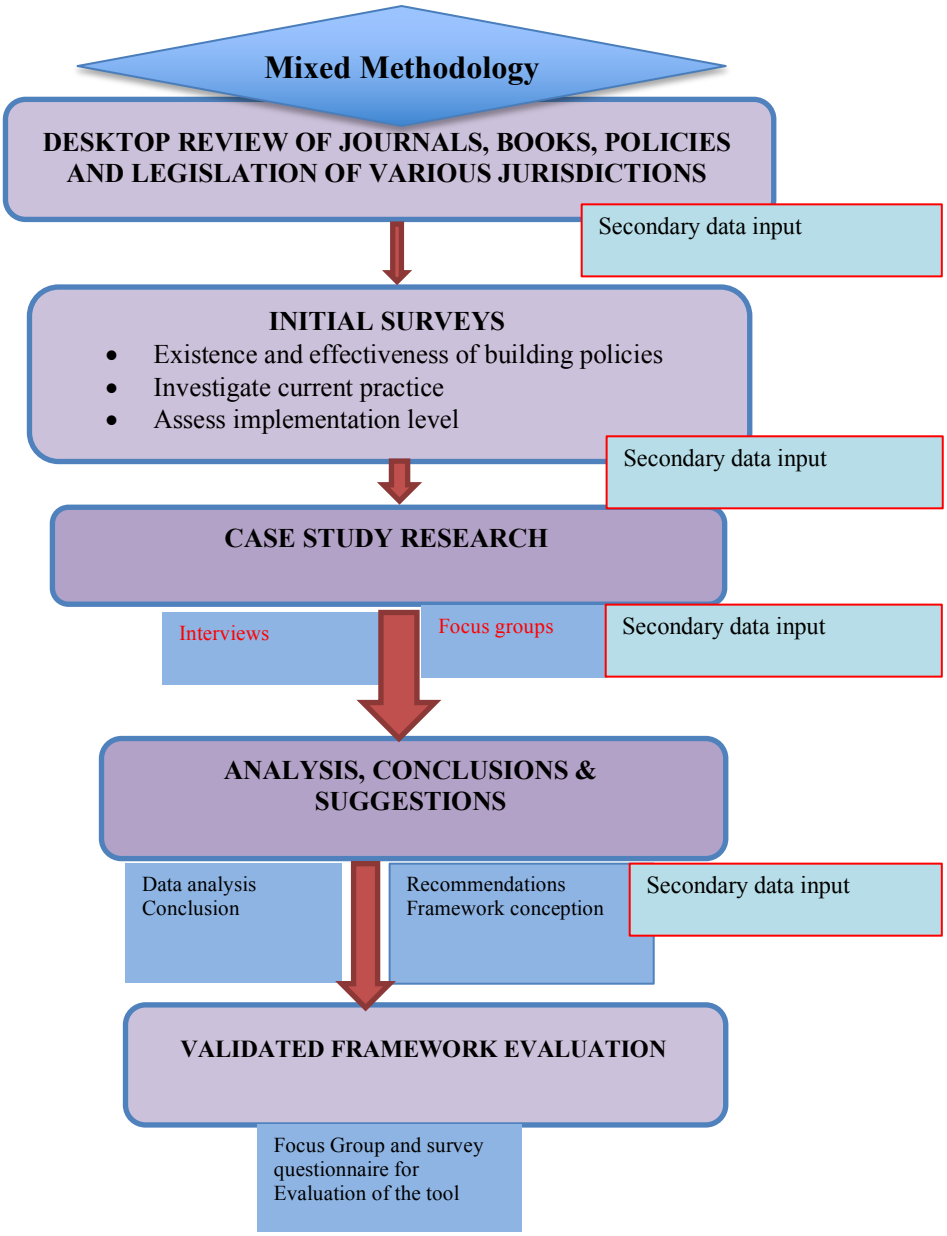

Figure 15: Process of data collection in the case study (Research Methodology and design)

CHAPTER 5: DATA COLLECTION FOR THIS RESEARCH

5.0 Introduction

The data collected involved stakeholders from the Cameroon regions of West, Center, North West and Littoral in addition to three interviewees of Corby City Council in England. This selection of participants was led by research aim and objectives and the desire to gather extensive data, which could assist in identifying the issues at stake and to equip the researcher with sufficient material to analyse the overall situation and develop an adequate instrument based on real and objective findings. Data were collected between March 2015 and June 2018 through desktop reviews of policies, laws and regulations of various countries, survey questionnaires, in-depth interviews, Focus group discussions and observations.

Questionnaires were completed by stakeholders namely Building owners, building occupiers, building practitioners, staff of the local authorities and staff of the central government using the online survey tool known as Bristol Online Survey as well as through paper form completed directly.

In-depth interviews of Building owners, building occupiers, building practitioners, staff of the local authorities and staff of the central government who are all key actors in this research field were conducted. All interviews were audio-recorded, transcribed and translated where necessary as many were in French.

The focus group activity was conducted in two phases for different purposes. At the first phase, 3 focus groups of 8-9 participants were organized and each group was made of representatives of Building owners, building occupiers, building practitioners, staff of the local authorities and staff of the central government. Our aim in conducting such a large number of focus group was to gather the perceptions of all category of stakeholders to better understand the factors leading to the perceived poor/ inadequate implementation of the building regulations and policies and to gather their view on potential solutions.

The second focus group activity was conducted at the end of this research after the framework has been developed. The aim of that second set of group discussion was to present the proposed framework to stakeholders of the building construction field in order to assess their level of agreement to the validity of the tool and to predict its efficiency in practice. The discussion took place in a form of workshop involving 11 stakeholders with substantial experience as shown in Chapter 8 of this thesis.

The overall criterion for the selection of participants was their experience and prior involvement in building constructions activities and their ability to share their experience, thoughts and subjective opinions in an honest and candid manner. It was considered that these ingredients were necessary to generate data which would lead to a more rigorous analysis and lead to better qualitative conclusions as "the accuracy of your findings largely depends upon the way you select your sample" (Kumar; 2011). The chapter presents the various type of data collected and dwells on the methods and processes followed throughout the exercise starting with the desktop review of building policies of the case study country at section 5.1, followed by the interviews data at section 5.2 and the focus group data at section 5.3.

5.1 Desktop review of Cameroonian laws, regulations, books and journals

A brief review of building policies of the republic of Cameroon was carried out. The exercise was achieved by reviewing journal papers and online publication as well as reviewing books from various libraries sources. The bulk of the journal articles accessible was mainly from Cameroon Tribune, a government newspaper in which most government policies are published and commented. The other online resources perused in this exercise included access to the website of the Ministry of Urban development and Housing in which the building policies emanating directly from this ministerial department are published, the website of the national agency in charge of normalization and certifications (ANOR) and the website of the prime ministry where much of the country's policies including building policies are published.

The exercise consisted in scanning through those documents, books and sites, identifying and extracting relevant documents and information which was subsequently analysed qualitatively. In practice, all laws and regulation assessed as applicable in the building field were extracted and examined. In the review process all laws, regulations and policies were compared against each other in order to establish their true nature and detect any incoherence or area of persistence.

From the review it transpires that the current building sector is regulated by several instruments but that the Urbanism Code 2004 (Law N0 2004/003), which is a legislative and regulatory instrument relating to urban planning is the corner stone of the building construction processes in the country. It sets the guidelines for all stakeholders and

clarifies where possible the role and responsibilities of each party to a building project. It operates hand in hand with 5 prime ministerial implementation decrees, namely:

- Decree No. 2008/0736 of 23 April 2008 laying down conditions for drawing up and revising town planning documents;
- Decree No.2008/0737 of 23 April 2008 laying down safety, hygiene and sanitation rules applicable to construction works;
- Decree No.2008/0738 of 23 April 2008 organising land-use procedures and processes;
- Decree No.2008/0739 of 23 April 2008 laying down land-use and construction rules;
- Decree No.2016/3058/PM of 28 July 2016 laying down land use and construction rules.

In addition to the main statutory instrument also operates other regulations such as Circular No. 002-CAB-PM of 12 March 2007 which regulates the use of local materials in the construction of public buildings. It also came to light that with reference to sustainability, Law N ° 96/12 of 5 August 1996 establishing the general legal framework for the environment management in Cameroon. Its Chapters two and three lay a foundation for sustainability and encourage building projects to carryout environmental assessments prior to the realisation of a project that is likely to have an impact on the environment. Through its Art 41 this law prescribes to the local authorities to ensure that environmental assessments have been made and approved by their staff prior to issuing building permits. Meanwhile, the relevant applicable norms for building constructions in Cameroon are set by ANOR and identified in NC234:2002-06 to NC114:2002-06; NC234:2009 to NC235:2009; NC236:2006 to NC238:2006 and NC552:2014 to NC1640:2014 to cite but some.

All of the above policies, norms and regulations pertaining to the building sector along with cut of newspapers was reviewed and analysed as shown in Chapter 6 of this thesis.

5.2 Survey questionnaire

The opinions expressed by various categories of selected stakeholders were perused to identify those that would point towards a trend, which would by inference accurately reflect the national picture. The findings of the survey questionnaires were used to form the basis of the ensuing interviews and focus group discussions. It was considered that

the survey procedure was most suitable at that early point of the enquiry because it would generate data in a numeric manner, so substances could be drawn and applied adequately later on when holding individual or group discussions with stakeholders. This procedure was particularly judged adequate at the earliest stage of the enquiry given the ease with which data collected through the Bristol online survey tool could be analysed and summarised within a short period of time. This section succinctly presents the questionnaire design (5.2.1) and the method and procedure applied in the data collection process (5.2.2).

5.2.1 Survey Design

The survey questionnaires were designed at the earliest stage of the inquiry to capture the numeric description of trends and opinions of the entire stakeholders of the building construction field in the country. It was intended to assess the level of implementation of the existing building regulations and to cross check the facts unearthed from the literature review in general and desktop review of the national building policies in particular.

Following the initial literature review as highlighted in section 5.1 above, four different sets of survey questionnaires were carefully designed through the Bristol Online Survey software and they were targeting four categories of stakeholders (Building owners; Building occupiers and operators; Building professionals and Local and central Government executives). Each set of questionnaires consisted of several sections covering general information about the participants' demography, building laws and policies, practices and information about new building technologies. The questionnaires were anonymous with most providing multiple answers choice to participants, whereas others were open questions and required the input of the participants' own answers. Precaution was taken to reduce any bias by ensuring as suggested by Fellows & Liu (2003, p110) where relevant open questions were placed before related, closed questions. Also, in order to capture the full picture, filter questions were used on specific questions to avoid some participants' unnecessary involvement on aspects of survey that was not relevant to their practice. That technique was mostly used in the questionnaires addressed to staffs of central and local authorities as their level of involvement in the implementation of building regulations is effective at different levels. The questionnaires addressed to Building owners contained 26 items,

whereas those distributed to building occupiers and operators contained 24 items. Questionnaires to building practitioners and staff members of the central and local authorities contained 23 and 36 items respectively. The majority of these items were measured using a mixture of continuous scale (agree, strongly agree, disagree, strongly disagree) and of categorical scale (yes/no, ranking from highest to lowest importance). The aim of these questionnaires was to quantitatively assess the stakeholders' awareness as to the nature of the existing building policies, laws and regulations; assess the level of penetration and implementation of those policies, laws and regulations with the view of formulating clearer hypothesis and analysis framework for the research. Bearing in mind the nature of the targeted audience, the survey questionnaires were designed in French and English. The bilingual model was adopted as to reflect the practice in Cameroon where 80% of the population speaks French and 20% speaks English. This dichotomy arises directly from their history as ex colony of both France and Britain. The draft questionnaires are attached as **appendix 4** to this thesis.

The questionnaires designed were made of 4 distinct parts each, dealing with the variables in the study and all aiming at addressing the research question. Those four parts were: For Building Owners/occupiers and operators of public buildings, an Introduction part, dealing with the participants' demography and gathering information about their building where relevant; One part dealing with comfort and safety of the building and its occupiers; one part dealing with Regulations and compliance; and one part dealing with building technology and energy. For the building practitioners the final questionnaire was made of two parts, namely an introduction part covering the participants' demography and their professional experience; and one part covering their day-to-day practice and their personal development plan with emphasis on the implementation of building laws and regulations. For staffs of the central and local authorities, the questionnaire was more elaborated given the distinction of duties between the two entities. The questionnaire was made of four parts: An introduction part covering the participants' demography, experience and daily practice; a second part covering the implementation of BR at the planning stage; a third part covering the building construction phase with emphasis on building control/supervision and enforcement of BR breaches and a fourth part focusing on the implementation of design and technical norms.

To enhance the effectiveness of the questionnaires and to improve the reliability of the targeted data, the questionnaires were piloted as recommended by experts in the

research field (Fellows & Liu, Creswell and Cassell). Three participants of each group were invited to take part on the pilot simulating real timing online using the relevant passwords to access and complete the questionnaires online. They did so and provided their opinions on the draft questionnaires. Feedbacks from the small sample of respondents chosen for piloting and referred to above were taken on board to improve the quality of the final questionnaires. On the final version the pilot group thought that the questionnaires were intelligible and easy to complete within reasonable time (15 minutes or thereabouts). Prior to issuing the final version of each questionnaires published further discussions were also held with the research supervisors who added more in term of research-orientated approach on the main issues.

5.2.2 Method

This subsection provides a description of how the categories of stakeholders was decided (5.2.2.1) and presents how individual members of each category were selected (5.2.2.2). It also presents the vehicle used in the data collection through the survey (5.2.2.3).

5.2.2.1 categories of participants

Several researchers have indicated that building failure was caused by lack of awareness and other factors commonly attributed to all stakeholders of the building construction industry in developing countries (Kimani & Musungu 2010; Windapo A & Rotimi 2012; Danso & Boateng 2013; Olaitan & Yakubu 2013; Bikoko & Tchamba 2015; Ametepey & Ansah 2015; Twum-Darko & Ntombizodwa Mazibuko 2015). Bearing that in mind, an attempt was made to reach a reasonable representative number of people categorised as stakeholders of the building construction sector regardless of their background, experience and level.

To effectively answer the research question, it was important to capture the views expressed by all interested parties. Given the dynamic of the various components of the general population involved in the building sector, the option to divide the targeted population into four distinct groups based on their respective involvement in the building construction process was preferred. It was acknowledged that stakeholders of the building construction field are not just a homogeneous group of people, but a group of people with different roles and intervention levels in the implementation of laws and regulations. Accordingly, drawing from the basis that in each state, policies, laws and

regulations of the building sectors are formed and implemented by officials, the existing literature on building policies in Cameroon was reviewed and it transpired that the building sector was mostly governed by the 2004 Urbanism Code. This 2004 statute was passed under the leadership of the Ministry of Housing and Urban Development policies and is implemented by the local authorities. The overall building policies of the country are developed and disseminated by the ministry. The enforcement powers are expressly given to the local authorities that are also the deciding authority for planning permissions and as such, they have a central role in the implementation of building laws and regulations. On that basis, staff of these two entities (central and local authorities) were categorised as the first group of stakeholders. The category of local and central authorities refers mainly to employees of the local authorities, employees of the Urban community and employees of the Ministry of Housing and Urban Development.

In the same manner, it was self-explanatory that the execution of building construction projects is carried out by professionals who in principle are involved on the basis of their presumed technical knowledge and experience. Respondents in the group of building practitioners were either members of various professional bodies or individual qualified practitioners including engineers, architects, electricians, town planners, project managers, surveyors, builders, environmentalist and lawyers specializing in building construction.

The third category considered relevant to this project was the building owners. By building owner, we refer to a physical person who actually owns a building constructed under his instruction or supervision. They are owners of the project and as such the strategic and economic decisions emanate from them. Given the practice in the country most of them also construct their building without recourse to a building construction company. In addition, they are central to the implementation of any building laws and regulations and as such their experience, opinions and perceptions are crucial to answer the research question. It was not relevant whether the building construction was actually completed as in practice many buildings are occupied prior to their completion.

The fourth category of stakeholders considered as relevant to answer the research question is made of operators of public buildings and occupiers (tenants) of private building. Participants of this category are the people occupying a building either as tenants or in the case of public buildings the person in charge of overseeing the day to day running of that building. Their involvement is considered relevant on the basis that

in the country, building regulations go beyond the construction of the buildings and in any event many buildings are partly occupied during the building process. It was assessed that their input would shed more lights into the practice of stakeholders of other categories identified above and would also be vital on the assessment of the building comfort in the country.

5.2.2.2 Participants Sample selection

Upon defining the different categories of stakeholders, it was important to identify and select potential participants. In order to work pro-actively, the selection process was made working collaboratively with ARPEDAC (Association pour la Recherche et la Promotion de l'Energie Durable en Afrique Centrale), a non-governmental organisation based in Cameroon and working for the promotion of sustainable energy in the central Africa region. The choice to work with them was made because they already had a substantial bank of data of stakeholders of the building field in the country as they are currently working with the UN-Habitat on other building projects in the country. Potential participants of the first two categories (Professionals, staffs of the central and local authorities) were randomly selected from the bank of data held by ARPEDAC with the only distinction being on the basis of their affiliation to one of the categories listed above. As for building owners and operators of public buildings/occupiers of private building the selection was made by working collaboratively with Innovative Management & Strategy Consulting (IMS Consulting), an independent consulting company based in Cameroon with experience in project management. Drawing from their experience potential participants were randomly selected from their data bank and approached for recruitment. Potential participants were initially contacted using one or more of the approved recruitment methods. For instance, with respect to building professionals and staff members of the central and local authorities, the direct recruitment method was used whereas ARPEDAC openly and physically invited all accessible members of their data bank to take part to the study and on their initial promise to take part, the researcher issued and send invitation letters. For building owners and building occupiers the random method was used for the recruitment. This method was particularly chosen because "with randomization, a representative sample from a population provides the ability to generalize to a population" (Creswell 2003, p156). Using the IMS Consulting's data bank, invitation letters were randomly sent to potential participants.

A significant number of respondents confirmed their willingness to take part in the survey. To ensure a higher return rate an e-mail followed by a courtesy phone call was made to all potential participants including the detailed information to access the BOS website along with the password to access and complete the questionnaires. The aim of the phone call was to ensure that participants had indeed received the mail, and to help where needed for better understanding and use of the software. This was particularly important for participants of the third and fourth categories (Building owners and building occupiers/operators), as the IT level are quite low in the country and the use of such tool is not naturally obvious to many. Two weeks later a further e-mail was sent to encourage participants to effectively complete their questionnaires and to remind them of the dateline. A last e-mail was then sent a week before the dateline with further prompting and encouragement to take part.

With that approach, during October 2015 and December 2015, one hundred participants were invited to take part in the study. Twenty-five questionnaires were distributed to Building owners, thirty to Building Professionals, twenty-five to building occupiers and operators of public buildings and twenty to staff of the central and local authorities of various cities in Cameroon. The questionnaires designed were administered to selected participants through the Bristol Online Survey. On the questionnaires so distributed, twenty building owners, twenty-one building occupiers and operators, twenty-seven building practitioners and sixteen staff members of the central and local authorities returned their questionnaires by the dateline of 30th March 2016, using the password control Bristol Online Survey tool. The ratio between distributed and returned questionnaires by categories is shown in the below table 11.

Category of stakeholders	***Questionnaires distributed***	***Responses received***	***%age of responses received (%)***
Building Owners	25	20	80%
Building Occupiers & operators of public buildings	25	21	84%
Local & Central Authority staffs	20	16	80%
Building Practitioners	30	27	90%

Table 11: ratio between distributed and returned questionnaires

5.2.3 Instrument used for questionnaire design and analysis (BOS)

As indicated above, the survey questionnaires were developed and administered using the Bristol Online Survey Software (BOS). It is a web-based survey tool that provides the possibility of developing a variety of question types with complex data flow built up by the use of filter questions. That tool is password controlled and it also enables the administration of questionnaires once developed as well as the collection of data directly from participants. In the context of this study the tool was use in its natural condition without modification. The decision to use this specific tool in the conduct of the study was motivated by its proven track record, accuracy and reliability within the research community. As highlighted in its website, the tool is used by more than 300 research organisations, including at least 130 universities in the United Kingdom alone (https://www.onlinesurveys.ac.uk/about/). Also, its multiple functions including the spontaneous analysis capacity made its use smooth and time efficient for the project management.

With the BOS instrument, responses provided by participants through the platform are captured and analysed directly and summary of each questions/section is provided with charts or graphs to shed quantitative light on the data so gathered. It is a progressive tool with an integrated auto analysis function, which updates itself providing an analysis of the captured data in various forms including digital and graphic formats. A sample of the effectiveness of the tool is attached as **appendix 5** to this thesis and displays the graphic analysis of the answers given to the first question by all participants of the first category as well as an individual analysis of the same question provided by one participant.

This instrument is effective and assists in accurately recording participants' answers and putting them in a readily usable format such as charts and graphs. From the data generated and summarised in number, inference and/or straight conclusion can be drawn promptly. This accuracy and effectiveness contribute in the validation of the enquiry. The reliability and soundness of this tool was also enhanced by the password control access option, which enabled participants to login securely, to input their answer, to save them and to amend them at any time as they saw fit up and until ten minutes after their submission. That flexibility and confidence enhanced the reliability of the data obtained and it is submitted that the flexibility also contributed in gathering more accurate answers from participants.

This instrument was appropriate as through its design function questionnaires were adequately designed and filtered to fit the targeted audience. The aesthetic and smooth nature of the questionnaires developed through this instrument made it easier for participants to navigate through the survey.

5.3 Interviews

Many authors advocate that interviews are ideally suited to experience-type research questions and can also be useful for exploring understanding and perceptions of things that participants have some kind of personal stake in (Braun &Clarke 2013; p81). This view contributed to my decision to use interview as data collection method in the course of this research as the aim was to exactly gather the views, experiences and perceptions of stakeholders of the building industry in the case study country. I used this method applying the techniques suggested by research practitioners and scholars. This subsection summarizes the actual method and procedure used for conducting the interviews and summarizes the process of handling the data gathered.

5.3.1 Methods

In the course of this research interviews were conducted face-to-face, were semi-structured in nature with the use of interview schedules. The interview questions were open-ended, including indirect questions to obtain information about the current building laws and regulations and the issues surrounding their implementation. The aim of the interviews was to better understand stakeholders' attitudes towards those regulations, their conduct on a day-to-day practice and the actual planning and building process in order to evaluate the process and develop a framework to enhance the implementation rate. The sources for topics included in the interview schedule were the initial findings of the literature review and of the survey carried out at the earlier stage. The interviews were therefore an activity to further the knowledge and hindsight gained from the above sources. The procedure and techniques used are highlighted below:

5.3.1.1 Sampling and participants' selection

Sampling is the process through which the researcher thinks about inclusion and exclusion criteria in deciding who or what they want to hear from or not in order to better understand the problems and answer the research question (Braun & Clarke,

2013; p56). The objective of any sampling activity is to provide a practical means of enabling the data collection and processing component of the research to be carried out whilst ensuring that the sample provides a good representation of the studied population (Fellows & Liu 1997; p139).

As illustrated by the Center for Innovation in Research and Teaching (CIRT) (https://cirt.gcu.edu/research/developmentresources/research_ready/qualitative/sampling), there are three approaches to sampling in qualitative inquiries: purposeful sampling, quota sampling, and snowballing sampling.

In practice, purposeful Sampling is the most used method in selecting participants of interviews during an investigation process. This is achieved by selecting participants based on pre-selected criteria established on the basis of the research question. Silverman (2010) summarizes the adequacy of this sample method by insisting that "purposive sampling allows us to choose a case because it illustrates some feature or process in which we are interested…(and) demands that we think critically about the parameters of the population we are studying and choose our sample case carefully on this basis" (p.141).

Depending upon the nature of the research topic and question the quota sampling strategy can be used to select participants who will take part in the interview data gathering exercise. As outlined by Dudovskiy J (2013) quota sampling is a technical selection process wherein the final sample has the same proportions of individuals as the entire population with the same specificities and personal characteristics. To be effective and credible, this method dictates to the researcher to divide the population sub-groups, establish the proportion of those subgroups within the population and to recruit participants bearing in mind those proportions so that the final sample would be the proportionate representation in term of percentage of the subgroups within the population. This approach will be more credible where there are clear statistical data validated confirming the proportion of the sub-groups with the specific targeted variants.

Alongside the above two strategies operates an alternative strategy known as snowball Sampling or friendship pyramiding. This strategy consists in the participants directing or referring the researcher to other members or section of the population who they subjectively consider might be able to potentially contribute or participate in the research. In practice this selection method is recommended for studies where the

sample for the study is very rare or is limited to a very small subgroup of the general population.

It is strongly advised that whatever sampling method is ultimately chosen, the size of the sample must also be determined carefully. In general, there are no rules for sample size in quality research, however a sample size of 15 to 30 individual interviews is common and recommended research, which aims to identify pattern across data (Braun & Clarke; 2013; p55). On how much data may be required, the CIRT specifically highlight that "in qualitative studies, sampling typically continues until information redundancy or saturation occurs. This is the point at which no new information is emerging in the data. Therefore, in qualitative studies is it critical that data collection and analysis are occurring simultaneously so that the researcher will know when the saturation point is reached".

In the light of the above position within the literature and in order to effectively deal with the research questions the use of purposive sampling to select participants to the interviews was selected. This option was preferred given the nature of the inquiry. Through this method I was persuaded that I would be able to have greater hindsight into the building process and policies as implemented in the country. This option was also motivated by the fact that it was costs effective in nature. Although there was a limited contact with the targeted audience in Cameroon, the researcher benefitted from the bank of data kindly made available to him by ARPEDAC and IMS as well as their experience on the ground. The quota sampling method was rejected on the basis that Cameroon is a country without reliable statistical data resources. Opting to pursue the quota sampling strategy would have required going through formal administrative processes of seeking access to staffs of the central and local government centrally as well as liaising with the National institute of Statistics. This institution is not accessible online and several previous attempts to obtain information from them have proven difficult and impossible. In addition, various organisations relevant to this research are not readily available on the national database and as such it would have been almost impossible to obtain reliable numbers to work out the relevant quotas for each category so as to adequately draw a representative picture of the general population. All these processes would have led to significant delay and associated financial costs to the project.

Also, as access to a good data bank of the targeted audience through the two organizations referred to above was effective, the snowball sampling method as strategy for selecting participants to the interviews was excluded outright.

The procedures used for purposive selection of participants can be summarized as followed: First, a series of interviewee parameters or characteristics merely to match the various categories of stakeholders as classified earlier was set up. Those parameters included for the first category the requirement to be a staff member of a central or local authority regardless of age, sexual orientation or length in service. One important parameter related to this category was their belonging to either a planning team or to a technical team. This criterion was adopted to enhance the benefit of the interview as staffs working in those departments would give greater hindsight and would provide an informed and educated opinion on processes, practices and legislation. With respect to the second category (Building practitioners) the vital parameter was their belonging (subjectively assessed by the potential interviewee) to one of the identified professions namely architects, building engineers, bricklayers, town planners, surveyors, builders, electricians and energy technician. Turning to the third category (Building owners) the only criteria was that they be the owner whether at law or in practice of a building constructed. It was not relevant whether the owner lived in the said building or whether it was rented out. Age and sex were not relevant in the selection process. As for the fourth category of stakeholders (building occupiers/administrators), the only criteria were that they resided in or managed buildings not belonging to them. These criteria were set so as to ensure better representativeness and to generate a broader view of the situation on the ground.

Once the criteria were firmly established IMS Consulting was instructed to help contact potential interviewees in accordance with the above parameters. IMS perused its data bank and matched the parameters to individuals drawn from the data bank.

It should however be emphasized that the purposive sampling method used in this project should be differed from convenience sampling. “A convenience sample is one that is simply available to the researcher by virtue of accessibility” (Bryman, 2004, p.100). An accent is placed on this distinction as accessibility was simply one of the criteria to select interviewees in my research. This was to increase the chances that interviewees were willing to participate in the research and make sure that the sample size was large enough. However, apart from accessibility, other factors such as

relevance, suitability and representativeness of interviewees were also considered when the interviewees were being selected for my research.

5.3.1.2. Interview procedure

Using the above-identified strategies a pool of more than 10 pre-selected participants was selected for each category of stakeholders and invitations to take part were sent out. Interviews proceeded on a one to one basis and I had not set up to interview a specific number of participants. However, after 17 interviews it quickly became apparent that no new issues or topics were being bought forward or raised by participants. As data analysis was progressing at the same time, it became clear that there were no more data emerging and as such the interviews were stopped. At that stage it is summarized that sixteen stakeholders of the building construction industry from a range of backgrounds in Cameroon were finally interviewed, including the following: building owners (2), building occupier (1), architects (2), local authorities executives (6), project managers (1), building engineers (1), central government officers (3) and bricklayers (1). Although the study targeted the whole of the national territory most respondents worked and or resided in the Centre region (Yaoundé), except two who came from the North West and Littoral regions. respectively in addition to those stakeholders based in Cameroon 3 other participants were selected from the United Kingdom, giving their professional background as (one) building controller and (two) planning officers respectively all based at the Corby borough council in the Northamptonshire County. Respondents were selected based on their experience, knowledge and involvement in building construction projects, development and implementation of building policies in the country. The inclusion of the three participants from the UK was on the basis that their professional knowledge and practice could enhance the understanding and contribute to the comparison of practices taking place in developed countries jurisdictions and developing countries jurisdictions in order to meet the research objective.

The diverse backgrounds of the respondents provided a wide range of perspectives on building practices and on the implementation of the current building policies, laws and regulations in the country.

Overall, 17 interviews were conducted in order to gather relevant data from all category of stakeholders and can be summarized in the below chart: Group 1: 6 (Building

practitioners); Group 2:3 (staffs of Central and Local authorities); Group 3:2 (Building owners); Group 4: 1(Building occupiers); others 3 (Staffs of the Corby city council).

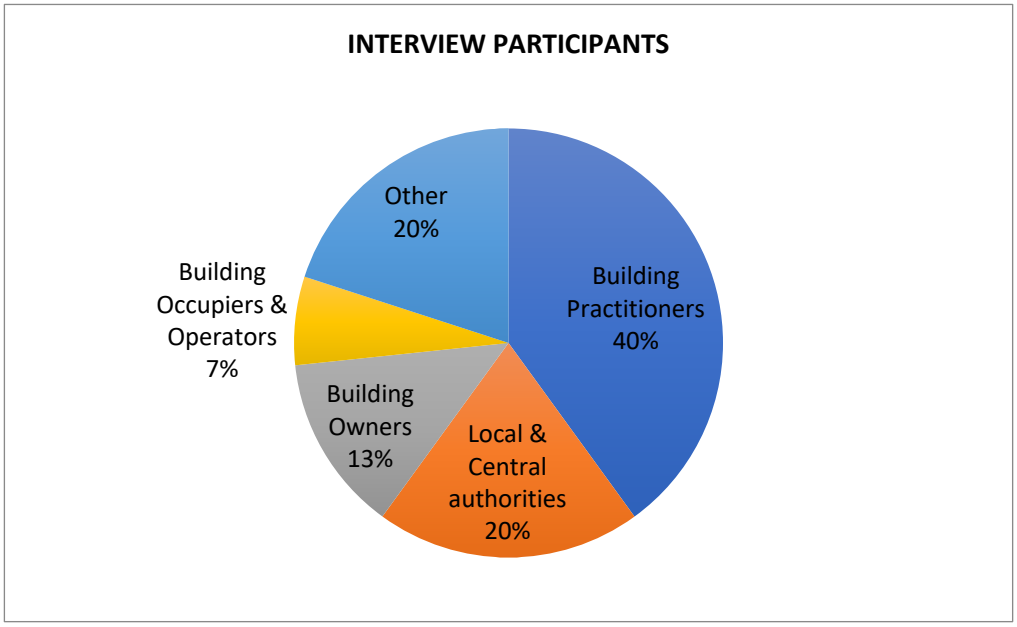

Figure 16: proportion of interview participants by category

5.3.1.3 Interview structure

In general interviews are conducted in three different formats known as structured, unstructured and semi-structured. Interviews are considered structured where series of similar predetermined questions are asked to all interviewees. The main advantage of this approach is in that it allows faster interviews, which can be easily analysed and compared against other interviews of the series. As for the unstructured interviews, they refer to those whereby no questions are prepared prior to the interviews and interviewees have the freedom to discuss any topic raised at the extent they consider sufficient, subject to time. Also, with the unstructured interview format, data collection is informal in nature. This format is often criticized amongst scholars, as the perception is that it attracts high level of bias. The third format is semi-structured in nature. It is a mixture of the two structures mentioned above. In this approach, the researcher has prepared an interview schedule before the interview but as highlighted by Braun & Clarke (2013; p78) but does not rigidly adhere to it either in term of precise wording of questions or the order in which questions are asked. Similar type of questions are asked

to all interviewees but they have the possibility to go beyond the questions/topics being discussed to add additional information which may be deemed relevant to the enquiry. The semi-structured was the selected form of this research as although this format is not suitable for studies involving large numbers of people, it is most helpful and recommended in mini-studies and case studies (Drever; 1995). The choice of this format was also encouraged by the fact that unlike the structured approach respondents would not be limited to the initial questions asked by the researcher whilst the initial determined questions would ensure uniformity across the various sections of data collected for analysis purpose. The initial questions dealt with respondents' experiences, attitudes and knowledge that are applied in the planning and building construction process and were directed in a way that gave the space to respondents to talk openly and express their views. Copies of the interview schedules for the four categories of stakeholders are attached as **appendix 6** to this thesis. In the use of this structure the usual recommended approach was observed by asking open ended questions so as to empower the interviewees and to give them the greatest flexibility margin. This type of questioning was chosen as some researchers advocate that it encourages participants to provide in-depth and detailed responses and to discuss what is important to them and to talk about their perceptions of what was happening, what their beliefs about the event were, and how they felt about the situation under investigation (Braun & Clarke 2013, Hittleman and Simon (2002, p.149). More importantly this method of questioning was deemed appropriate as it was thought that it would reinforce the reliability of the inquiry. It was therefore important to use the correct approach bearing in mind Bogdan and Biklen (2012) reference to the fact that the interviewees define the content of the interview and the direction of the study. In order to create the best opportunity for respondents or interviewees to talk openly, the interaction between interviewer and respondents was considered and adjusted where necessary throughout the interview sessions and a friendly approach was also used to establish a good, trustworthy and easy communication framework.

5.3.1.4 Location and Recording method

Interviews lasting between 35 and 80 minutes were conducted between 30th April 2016 and –13th December 2017, either face to face (N = 11) or by Skype (N = 6). The face-to-face interviews (N10) took place at the Toungou Hotel in Yaoundé in quite room

specifically designated for this purpose in addition to those (N3) that took place in Corby in the premises of the Local Authorities in the city centre. Steps were taken to ensure that the level of noise intrusion and other distracting factors would be significantly reduced if not fully eliminated. As to the Skype interviews, they were conducted remotely with the researcher being based in England and the interviewees (N7) based in Yaoundé in Cameroon. Appropriate steps were taken in advance for the interviewees to either come to the office of IMS in Yaoundé (N5) or for them to be interviewed in their offices (N2). The interviews were recorded using a digital device. For ethical compliance appropriate explanation of the entire process was given to the interviewees with clear option to opt out of the interview either before it starts or at any time through the process including even after the interview has taken place but before the thesis is submitted. Further evidence of the compliance has been exhibited in the section dealing with ethics in this thesis. The data recorded was securely kept in a password control computer at the Nottingham University for analysis.

5.3.2 Handling and analysis of the interview data

At the end of each individual interview, the digital audio recording material was transcribed and translated into the English language as the large majority of interviews were in French. After that initial phase, the field notes which included non-verbal cues and other observations were reviewed and organised. Numerical codes were allocated to each participant in order to preserve their anonymity and to comply with the confidential undertaking made.

The transcribed and translated interviews were analysed using the NVivo 10 Software. This software is useful and assist in the analysis of qualitative data in terms of gathering all the evidence and subsequently organising and grouping it into similar themes or ideas (Bazeley & Jackson; 2013). In this regard, Alhojailan & Ibrahim (2012) insist that using software such as Nvivo for analysing qualitative data is valuable in terms of improving the rigours of the analytical steps adopted for validating the findings as it reduces the potential researcher's subjective bias. The analysis of interviews was initially inductive, as the meanings of each respondent's comments were codified and placed into six different 'nodes' within the NVIVO 10 software. The grounded approach was used in the analysis process as it allows deduction to be made from the data emerging directly from the data rather than from any pre-existing theory (Patton;

2001, p125). Six nodes divided into sub-nodes came out of the coding exercise, summarising the raw data gathered.

5.4 Focus Groups

Braun and Clarke (2013; p110) citing Wellings et al (2016) place an emphasis on the fact that focus groups have the potential to access forms of knowledge other methods cannot and in doing so they can generate a new or unexpected knowledge. They conclude that Focus Groups are excellent method in situation where one wants to elicit a wide range of views, perspectives or understandings of a given issue. This method is therefore perceived as perfect for circumstances where the intent is to lead to some kind of social change or activity. That also reflects the view of Kumar (ibid; p124) as he says that Focus Group is a useful tool in social and urban planning for identifying issues, options, development strategies, and future planning and development directions.

Steyaert and Bouwen (1994) point out that there are three possible group contexts that can be used as a tool for generating data and interpretations about organisations. Those groups context are groups created for exploratory context by the researcher, group created aiming at generating hindsight and new action and intervention groups where the group is merely an instrument for the intervention. It therefore transpires that these variable factors are associated with the purpose of the group regardless of the nature of that group. In the context of this research, the purpose was dual: exploratory and generation of ideas, and for that reason we considered that a focus group would be appropriate to elucidate the topic as focus groups give the opportunity to "hear different accounts or voices at the same time on the same phenomenon", with the aim being to catch in a condensed way the range of different voices (Steyaert & Bouwen; ibid, p128 in Cassell & Symon; 1994). Drawing from that adopted variable we conducted three focus group activities on 06th April 2017 lasting 90mn, 75mn and 65mn respectively. The nature of the groups formed as well as the procedure applied in collecting data generated through the Focus Group vehicle in this research are outlined in the below paragraphs.

5.4.1 Nature of the group and recruitment and location

The biggest question to answer when forming Focus Groups for research purposes is whether they should be heterogeneous or whether they should be homogeneous. Homogeneous groups refer to those with participants who share similar pre-determined characteristics i.e. who have something amongst them in common whereas heterogeneous groups refer to those participants who are all strangers to each other with no general common link whatsoever. The decision as to the nature of the group will usually be influenced by what is appropriate variable in any research. Braun & Clarke (ibid, p114) promote the benefit of both natures and clarify that heterogeneity is appropriate in some cases because it brings different views and produces more diverse discussions whereas in other cases homogeneity is preferable on the basis that the social interaction is already established and flowing and as such the group can generate greater and better data quality as group members may feel at ease and comfortable to speak their mind. Kumar (ibid) insists that whatever the nature of the group the objectives of the study must be the most important feature to consider.

In building construction field, issues are perceived differently from stakeholders depending on which category they belong to. As such, a focus group was conducted within three homogeneous groups made of representatives of each category of stakeholders. Given the nature of the research project it was necessary to form homogeneous groups, as I was looking for people who had experiences or were all involved in some way in the building construction. The common link between group members in this instance was therefore their involvement in building construction either as policymaker (staff of the ministry with the responsibility to develop building construction policies), local authority (staff involved with planning and building control), professional (including engineers, architects, Surveyors, project managers etc …), Building owners and occupiers of building in other capacity than owner.

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. It was anticipated that focus groups with a broad range of stakeholders would generate more interesting and rich data and would give a full picture of the issues under investigation as well as contribute in generating creative ideas as to how to solve the issues under investigation. In opting for this method, we took the view that groups formed in this manner would level the

playing field and reduces inhibitions among people who despite their common interest in building projects may perceive things from different perspectives or have distinct and often conflicting interests in the local context.

Based on Steyaert and Bouwen's (1994 in Cassell &Symon 1994) suggestion that the general size of a group can be between six and 10 people, 40 randomly identified participants were selected from a vast pool of people drawn from the local authority staffs, staffs of the ministry of Housing and Urban Development, registered building practitioners and members of the general public identified as building owners, building occupiers or building operators. The selection was made on a random manner using the stakeholders' database held by IMS Consulting and ARPEDAC, a not for profit organisation in Cameroon working for the promotion of sustainable environment. The random Cluster sampling method was applied in this selection process as Kumar (ibid, p186) indicates that such method would be appropriate where the researcher has the ability to divide the sampling population into groups (based upon visible or easily identifiable characteristics). We were able to do so as it was easy to identify within the general population the various people involved in building construction.

The number of potential participants was purposefully made the double of the actual number needed to complete the activities in order to mitigate last minute withdrawals.

Before recruiting at the central government and the local authorities, the researcher requested permission to recruit and conduct the focus groups by letters. In the requests for recruitment and participation, the researcher discussed the purpose of the research, the composition and criteria of the participants for the focus groups, that assured the targeted audience that the research will provide anonymity, and that participants are free to participate or withdraw at any time. The researcher assured them that no harm shall result from taking part in this research, or by not participating and that the project was validated by the ethic committee of the Nottingham university. As for practitioners and building owners, those randomly selected from the data base were invited to take part in the discussions through an introductory letter and information sheet sent to them in advance. (The content of that letter and information sheet are appended to this thesis as **Appendix 7**). After the agreement to participate, the researcher and the assistant sent the participants confirmation letters followed by a phone call, to thank them for their

participation, and remind them of the date, time, and location of their group. The letter also included directions for the location and reminded the participants that light refreshments would be served.

For those consenting to participate, arrangements were made for a convenient time to conduct the focus group with them and their similarly sampled peers at the office of IMS Consulting, a strategy company based in Biyem Assi in Yaoundé. This location was chosen given its central position and ease of access and because it provided a suitable quiet and comfortable room along with the appropriate recording equipment for the activities.

5.4.2 Focus Group procedure

At the start of each of the focus groups, the researcher welcomed each participant and explained to the group the research, its purpose, the role of the moderator (the researcher), the use of the digital audio recorders, and elaborated how their responses will be handled confidentially.
Focus group participants were requested to sign the individual consent form before the start of discussions and their consent was also gained for the tape recording. The consent form was the same as that used for the interviews **(Appendix 3).** The focus groups were taped and transcribed with the participants' prior permission.

Drawing from Braun & Clarke's (ibid; p115) experience and views that small groups of 3 to 8 participants work best in term of generating a rich discussion and are easier to manage, participants were placed within 4 different groups of 6 to 7 participants each. Groups were made of representatives of building practitioners, building owners, building occupiers or administrators of public building, representatives of the local authorities (the implementers and enforcers of building policies and regulations) and representatives of the ministry of Ministry of Housing and Urban Development (the policymakers). The initial intent was to run about 4 discussion groups in order to gather the maximum possible views on the issues at stake. However, after the third group discussions it became apparent that we had reached a "saturation point" as the issues discussed were now merely redundant of the views expressed in the earlier group discussions and on that basis, we concluded that the quantity of data generated was

sufficient and largely covered the possible views on the targeted issues and consequently cancelled the scheduled fourth workshop. Overall 19 participants divided into 3 groups effectively took part and the general demography reveals that almost 31% of participants were either staff of the central government (policymaker) or of local authorities (implementers and enforcers), whereas 47% were building professionals and 21% were building owners. The high percentage of building practitioners is justified by the variety of professions involved.

As observed by Steyaert & Bouwen (ibid) the focus group interview is similar to the individual interview in many ways as it can be of different form with the same good practice. Flowing from this principle we opted to use an interview schedule similar to the one used in the individual interview. In this task however, consideration was given to the fact that with this activity the interaction is between the participants rather than between the interviewee and the interviewer. We therefore conducted the focus group activity 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.

During the discussions, the researcher made a conscious effort to summarise and/ or paraphrase comments, which he judged long or complex in order to ensure that the comments made were adequately understood by all participants and by himself. In the same manner the researcher consciously tried to remain neutral and refrained from displaying body languages that could be interpreted as agreeing or disagreeing or praising any comment.

At the conclusion of each focus group discussion, the researcher provided a summary of the salient points of the discussion and invited the participants to add or clarify any point as they considered necessary. The researcher then thanked the group members for their time and contribution and discussed the intention to share the final, completed research with them.

As recommended by the best practice for conducting focus groups, the researcher ensured that as soon as a session was completed, he debriefed it with the assistant while the recording device was still on and they labeled all notes taken and anonymous codes allocated to each participant.

A total of 19 participants, including 15 men and 4 women, participated in the three focus groups. Most participants described themselves as building practitioners (42.10%). The remainder participants were either staff of the local and central

authorities (31.57%), building owners (17.78%) or occupiers of building in other capacity than owners (8.55%).

The first group started at 9am. From the eight confirmed attendees only six arrived on time. One was late by more than half hour and the other did not turn up. The discussion lasted 92 minutes and was conducted with 6 participants as summarised in the below table 12.

Number	Identification code	Category/ Title
01	FG01/001	Building engineer & Researcher (Building Professional)
02	FG01/002	Town Planner (CA)
03	FG01/003	Energy Engineer (Local Authority)
04	FG01/004	Building Engineer (Building Professional)
05	FG01/005	Teacher (Building owner)
06	FG01/006	Architect (Building Professional)

Table 12: Summary of Focus Group 1 participants' demography

The second group discussion scheduled at 11am started at 11:30am. Out of the eight confirmed participants, one failed to turn up. The discussion which lasted 65 minutes was then conducted with seven participants as summarised in the below table 13.

Number	Identification code	Category/ Title
01	FG02/001	Policymaker, MINDUH (Central Authority)
02	FG02/002	Building Owner
03	FG02/003	Environmentalist (operator of public buildings)
04	FG02/004	Architect (BP)
05	FG02/005	Engineer & Project Manager (Building Professional)
06	FG02/006	Technician Yaoundé 6 (Local Authority)
07	FG02/007	Building Engineer (BP)

Table 13: Summary of Focus Group 2 participants' demography

The last group started promptly as scheduled at 3pm and from the eight confirmed attendees, two did not turn up or were significantly late. The discussion lasted 79 minutes. The group was ultimately made of six participants as summarised below:

Number	Identification code	Category/ Title
01	FG03/001	Policymaker, MINDUH (Central Authority)
02	FG03/002	Building Owner
03	FG03/003	Architect (BP)
04	FG03/004	Building Engineer/ Project manager (Building Professional)
05	FG03/005	Building Engineer/ Project manager (LA)
06	FG03/006	Land Management (CA)

Table 14: Summary of Focus Group 3 participants' demography

5.4.3 Handling of the focus group data

Upon completing the group discussions, the digital audio recording material was transcribed, and reviewed and the field notes which included non-verbal cues and other observations are reorganised. 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, ibid). Thematic analysis is a process for encoding qualitative information where "a theme is a pattern found in the information that at minimum describes and organizes the possible observations and at maximum interprets aspects of the phenomenon" (Boyatzis, 1998, p4). Braun & Clarke, (ibid) advocate that thematic analysis is a useful method if the investigator is researching an under researched topic, or if the researcher is collaborating with participants whose views on the topic are not known. Alhojailan, (2012) also indicates that this method is suitable 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. We opted for this analysis method because

in addition to the fact that our study matches the above submissions it provides flexibility for approaching research patterns in either an inductive or in a deductive way (Alhojailan, ibid). Also, it was critical for us to focus on the explicit description of the content of communication as given by the participants and to limit the level of consideration of the implicit meaning of their statements and as stated by Vaismoradi et Al (2016), we considered that this method was most relevant to achieve that aim. We executed this analysis method applying the inductive approach because as argued by Braun & Clarke (ibid; 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. (the data) rather than from any existing theory. In the analysis process we observed the six phases suggested by Braun & Clarke (ibid; p202) starting with the researcher transcribing, reading, and getting familiar with the data. The second phase consisted of creating the initial codes, or features, of the data collected. The third phase was characterised by the search of the themes and collating the codes. This process included the identification of concepts as themes if the concept was expressed with extensiveness, frequency, or intensity. In the fourth phase, we reviewed the themes and created a thematic map including the subthemes. Once done, we categorised and named the themes. The last phase was as reiterated by Braun & Clarke (ibid) the writing of the substance drawn from the analysis.

In practice, we executed the thematic analysis in three stages in this study. I started by transcribing the focus group discussions into written texts. Once the discussions were adequately transcribed I moved to the coding of the text. This coding exercise was carried out in two phases namely (a) the emersion process as defined by Braun & Clarke (ibid; p204) characterized by the thorough reading of the discussion texts along with the encoding of every emerging relevant theme, and (b) the classification of these themes into different groups. This was executed following the selective coding approach as it involved identifying "a corpus of instances of the phenomenon" relevant to my research questions and then selecting those out (Braun & Clarke, ibid; p206). The classification of themes was mirrored on those revealed in the survey questionnaires earlier on. In order to keep coherence and focus the various codes unearthed were reduced to three generic themes which summarized the factors affecting the implementation of building laws, regulations and policies, the stakeholders' subjective assessment of the potential solutions and the current practices on the ground regardless

of the statutory and regulatory provisions. Those three group of themes deal with the issues at the heart of the main research question. The first and third group of themes are divided into different subgroups including the causes of poor or non-implementation of the existing building laws and regulations in Cameroon and the current practices of each category of stakeholders as well as the combined effects of those categories in the overall implementation process. The second group of themes includes strategies to enhance the implementation rate and suggested practical steps to correct the deficit observed. The data was reduced, and the themes were organized manually through a process whereby I systematically recorded the quotes relevant to each theme in a page of an excel document created for this purpose with each subtheme recorded in a different color.

Once the coding was executed, I moved into the third phase of thematic analysis which was interpreting the codes. With regard to the first group of codes (factors affecting the implementation of existing building laws and regulations), the code interpretation was made by comparing the salient features of the merged codes in the focus group texts with the existing laws and regulations. This was to better understand how the stakeholders' conduct and practices depart from the initial policy goal relating to building construction and what strategies they use to perpetuate those conducts. With regard to the second group of codes (i.e. stakeholders' subjective proposed solutions), the aim of data analysis was to generate ideas which could later be incorporated in any proposed framework to enhance the implementation rate. Those ideas would deeply inspire from the daily practices described in the third theme. The general strategy was to constantly compare the codes in different categories in the one hand and then to work out their relationship to find the patterns, associations and explanations among the themes.

Prior to the final analysis of the themes generated I referred my coding suggestion to the Focus Group assistant with whom I supervised the discussion for evaluation and feedback before I could complete the deep analysis of the observed pattern. I took this step as many scholars advise that for validation purposes, it is recommended to engage an outside reviewer at this early stage to test if the themes the researcher identified are compatible with the whole of the text or not (Alhojailan, Mohammed Ibrahim, 2012). The main purpose of this procedure was to build reliability in themes analysis coding. The assistant's feedback was considered and discussed, and the final list of agreed themes was drawn. That process was also repeated after selected quotes were applied

to each theme at the end of the analysis process. This two-stage validation process was followed and applied because it makes the data at the second level of themes less prone to errors and mistakes (Alhojailan, ibid).

5.5 Chapter Conclusion

This chapter has presented the data collected in the prosecution of the inquiry. It specifically highlighted the nature, procedure and processes followed in the data collection and the next chapter will deal with the data so collected.

CHAPTER 6: ANALYSIS OF RESULTS

6.0 Introduction

The data gathered and described in Chapter 5 were analysed using an array of strategies drawn from those recommended by scholars and researchers of the policy development and implementation field. As briefly summarised in Chapter 5, qualitative data gathered through interviews and focus group discussions were analysed using the thematic and content approaches whereas the data gathered through the survey questionnaires were analysed using the integrated Bristol Online Survey software. Full analysis of each set of data collected through the designated vehicles is presented below starting with the qualitative data secured through the desktop review of existing building policies in section 6.1, followed by the analysis of quantitative data gathered through the initial surveys in section 6.2 and by the qualitative data obtained through interviews and focus group discussions in section 6.3 and 6.4 respectively. Section 6.5 draws a conclusion on the chapter.

6.1: Analysis of the data collected through the review of building laws, regulations and policies in Cameroon.

This sub-section analysis specific building policies in Cameroon and presents my critical reflection on the data gathered through the review of existing literature of the building policies and practices in Cameroon. The various issues identified are summarised succinctly with focus on the processes of important phases of a building construction. As identified in the preceding chapter, the building policy instruments studied through desktop and books reviews are namely the Urbanism Code 2004 and its implementation decrees (Decree No. 2008/0736 of 23 April 2008 laying down conditions for drawing up and revising town planning documents; Decree No.2008/0737 of 23 April 2008 laying down safety, hygiene and sanitation rules applicable to construction works; Decree No.2008/0738 of 23 April 2008 organising land-use procedures and processes; Decree No.2008/0739 of 23 April 2008 laying down land-use and construction rules; Decree No.2016/3058/PM of 28 July 2016 laying down land use and construction rules), the Prime minister Circular No. 002-CAB-PM of 12 March 2007 on the use of local materials in the construction of public buildings and Law N ° 96/12 of 5 August 1996 establishing the general legal framework for the environment management. Each of these instruments is reviewed below.

6.1.1 The Urbanism Code 2004 and its five implementation decrees

Although the legislation does not specifically state within its articles what is its aims, a deep review of the literature reveals that its aim was to "improve the living conditions of the urban population and reinforce the economic role of cities." (Charlier & M'cho-Oguie; 2009). Like for any typical building policy, it is submitted that the overall aim of the Urbanism Code introduced in 2004 along with its implementation decrees was to regulate the erection and destruction of buildings, the alteration of their structure and to ensure that buildings constructed in the urban areas are sustainable and safe for the occupiers and for those working within the construction sites. The review of this instrument suggests that the above policy aim is scheduled to be achieved through a dual process with one planning phase followed by a construction phase. The process at the planning stage is set as shown in the below Figure 17.

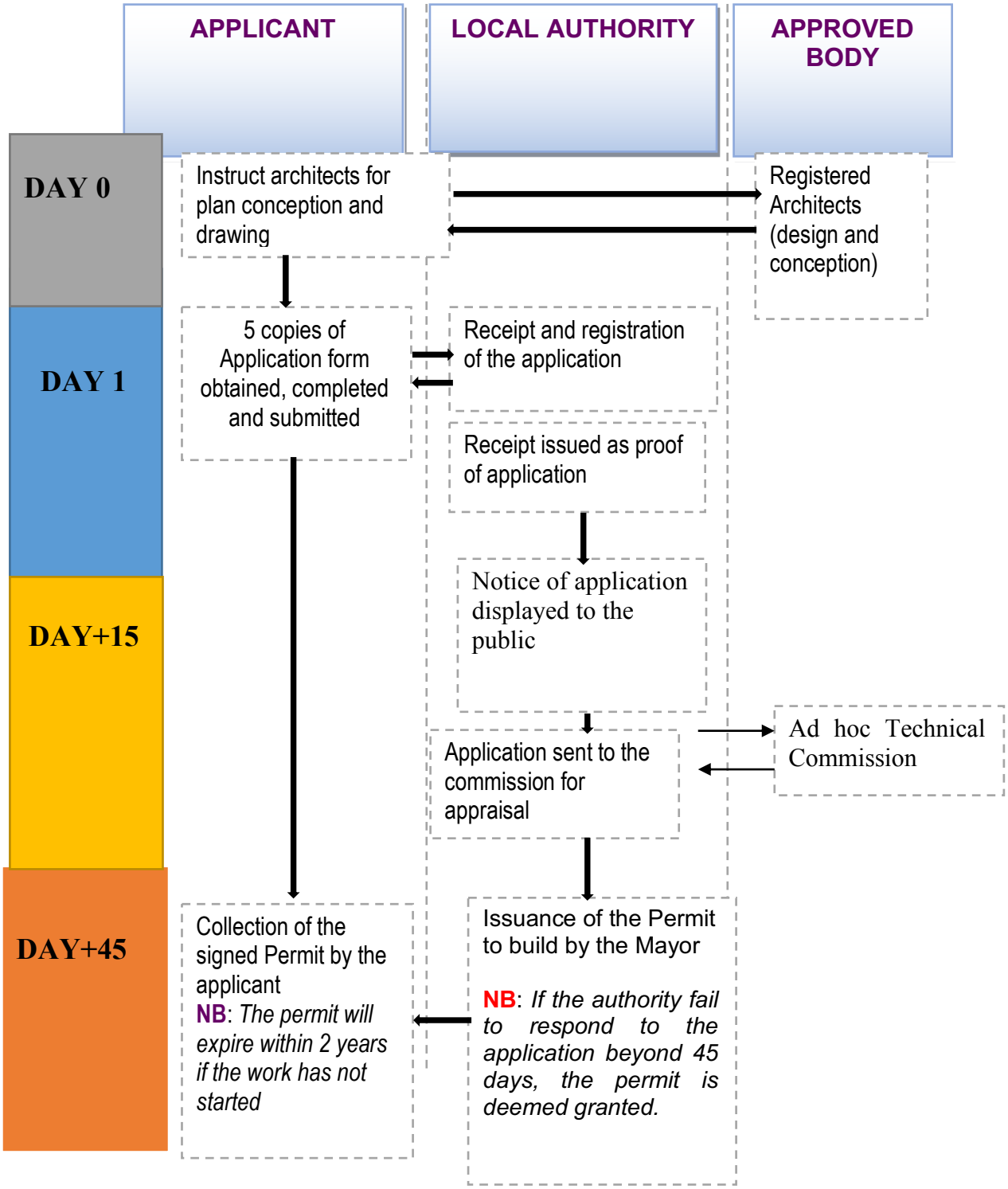

Figure 17: Planning permission application process in Cameroon

Once the planning permission process has been successfully completed, the builder can simply embark on the execution of his project through the construction phase. There is no requirement to notify the authority when the construction phase has started and there

is no efficient mechanism to control building sites neither before the start of construction work or during the actual construction phase. The process in that second phase is summarised within the below Figure 18

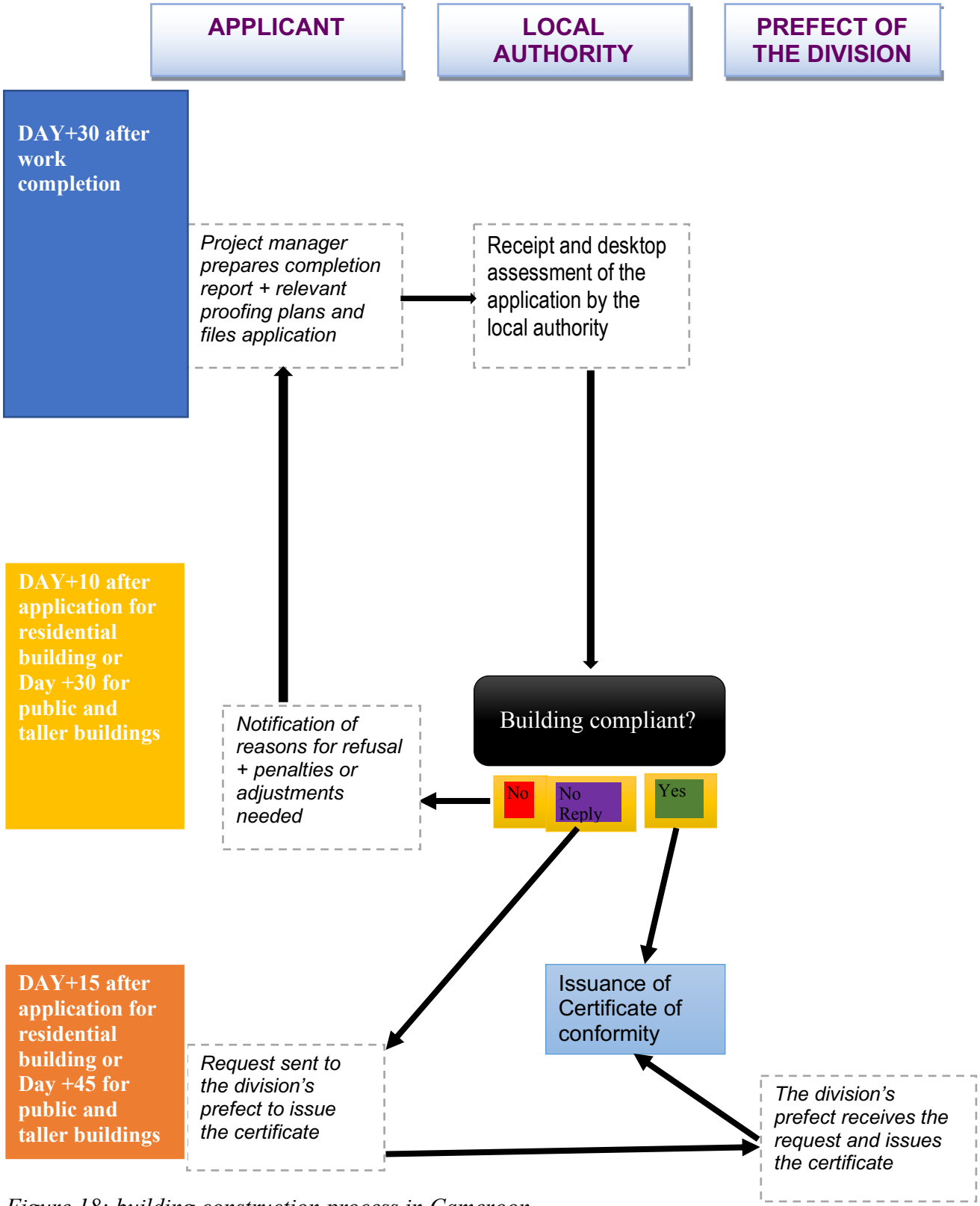

Figure 18: building construction process in Cameroon

The standards in the construction field are clearly established and published by the ANOR. Those standards are compulsory and represent the minimum expected from stakeholders engaging in building constructions. Unfortunately, there is no mechanism to ensure that the people involved on the ground abide by those standards. In fact, there is no designated mechanism to check compliance during the construction phase. The only inspection mechanism is that requiring the local authority to ensure that building sites have the relevant planning permission before engaging on any work. During their visits on the ground the local authority's agents are only expected to verify that a permit to construct has been issued. Even so, the literature review reveals that in practice stakeholders continue to build without having obtained a permit as the law allows the builders to commence their project if they could prove that an application was submitted and that after 45 days of submitting that application no response was received from the local authorities. There is a loophole as the statute is silent on whether the local authorities can still interfere after the work has commenced. Tchamba & Bikoko (2015) identify this state of affair as a major problem particularly as there is no prescribed automatic/ compulsory statutory control during the construction phase.

An analysis of the processes shown in Figure 17 and Figure 18 above reveals that there are numerous insufficiencies in the way planning applications are prepared and dealt with by the authorities and the direct consequence of the inadequacy in the process is the poor implementation of the 2004 statute. The main remarks can be summarised as follows:

At the **pre-planning stage**, there is no harmonised way of working and there is no instrument such as best practice guide for the stakeholders to follow in order to comply with the building regulations. Whilst the law requires the building owners to ensure that their designs are prepared under the supervision of a suitably qualified and registered architect there is no specific safeguarding steps taken to verify that the signature on the document is actually that of a regulated professional. That also applies to the survey reports and other engineering work that must be done on papers after the survey to ensure the overall viability of the project. Most importantly there is no evidence that at the pre-planning stage there is consultation between the architects, the engineers and

other stakeholders as to the soundness and nature of the project. Whilst it is accepted that the current regulation does not dictate such practice it amounts to the first stone strengthening the failure of the effective implementation of the building laws and regulations.

At the **application stage** the procedure is decent as it clearly indicates where and when the application should be submitted. The process is also clearly described with respect to the various steps after submission. The process seems efficient as it directs that within 72 hours of receiving the application it should be referred to the technical commission for assessment. Art 33 of the 2016 decree dictates who the members of the commission are. The Mayor presides over the commission. The other members are 1 representative of the ministry of housing, 1 representative of the ministry of environment, 1 representative of the ministry of public works, 1 representative of LABOGENIE (National Laboratory of Civil Engineering, part of the ministry of public works), 1 representative of the fire service, representatives of the professional bodies authorised by ministry of urban development and housing (no specified number) and where relevant 1 representative of the ministry of culture.

The real question about the commission work is that in practice it may not always be possible to gather a team of people requiring specific experience and competencies as those needed for the commission. It is well known that the country struggles with shortage of qualified people in the fields required when dealing with planning applications. Setting such requirement can actually be the downfall of the building policy as understaffed and without sufficient number of qualified technicians many applications may just get the approval without adequate vetting or alternatively because it may take longer (more than 45 days) to get a competent commission to seat and review the applications, constructions may simply start. Indeed, art36 of the 2016 decree expressly states that if by the 45th day after submission of the application no response is received it will be deemed granted and the construction work shall start!

The other shortcoming of the process with the commission is that Art35 (3) of the 2016 implementation decree does not fix a quorum for the commission to meet. It simply states that the decision on planning application is made on the vote basis and is awarded or rejected if a simple majority of present members vote on one way or the other. This

process suggests that even without the presence of an expert in charge of a specific aspect of the assessment the application can nevertheless be approved even without the full understanding of all areas of the application. This is easily a trigger for poor outcome and constructing unsafe buildings. This also betrays the lack of seriousness at the implementation stage of the policy.

Construction stage: With respect to the commitment for the building to be constructed in accordance with the details contained within the planning approval, Art37 (1) decree 2016 dictates that the building permit with the relevant information must be displayed on the site throughout the life of the building project, and Art37(2) simply states that the project manager undertakes to construct the building in accordance with the planning permission and in accordance with health and safety standards set within the legislation.

The statutory health and safety standards are described within the Prime minister decree No.2008/0737/PM of 23 April 2008 laying down safety; hygiene and sanitation rules applicable to construction work and the standards are described in the ANOR's catalogue.

It is worth emphasising that there is no provision for fixed statutory inspection or control throughout the building construction stage. The whole phase is left to the project manager/owner hoping that he would be conscientious enough to deliver a sound building which complies with the minimum standards, and which is in line with the planning permission granted or sought at the beginning of the project. Art 37(2) of the 2016 decree simply stipulates that the project manager is personally responsible for the implementation of the planning permission document as issued and for the building to be constructed in accordance with the national building regulations and standards. Art 53(2) of the 2016 decree highlights that at the end of the construction phase if a certificate of conformity is not granted due to non-compliance the project manager will be notified of the penalties and other sanctions (civil and penal) against him. Further pressure is put on the project manager through the mechanism of Art56 of the 2016 decree, which stipulates that despite the issuance of a certificate of conformity the project manager or the owner will remain liable for any defects or irregularities that may be found later on.

The risk with the lack of control by either an independent body or the municipal authorities is that there could be no guarantee that the standards are thoroughly enforced and complied with by the project manager or by the building owners. Once a building has been covered it is simply impossible to know whether the material used was compliant or not and any subsequent control can only be a guessing work. There is no check and balance so as to ensure an adequate quality and to ensure that the laws and regulations as well as the standards are effectively implemented in this process.

Post construction (Certificate of conformity)

At the end of the construction work, it is required that the project manager lodges an application for a certificate of completion. The documents required in support of the application are made of the ordinary application form along with a duly signed report (by the project manager) attesting that the work was completed in accordance with the standards, regulations and the planning permission granted. He must also submit the relevant proofing plans in support of his report. Once the application is submitted the Local authority must within 15 days (for ordinary residential buildings) or 45 days (for higher and for public buildings) issue the certificate or if they deem that the work has been done in breach of the regulations and/or standards then they may not issue the certificate. Instead they must notify the project manager/owner of the sanctions for the breach and of any adjustment that is required to render the building compliant.

The striking and surprising feature of this process is that neither the local authority nor any other body is statutorily required to inspect the building or carryout tests prior to the issuance of the certificate of conformity.

The above mechanism is unsound as it cannot be realistic to expect that the project manager who supervised the construction work throughout would say anything than confirming that the work has been completed in compliance with the regulations. He cannot reasonably be expected to be a fair judge of his own performance. It is submitted that an independent body should be appointed after the application has been made to physically attend the site, inspect the building and prepare a report which should be submitted to the authority prior to the grant/refusal of the certificate of conformity.

The disappointment is that there is no statutory disposition for building control at this crucial stage. The regulations merely refer to exceptional circumstances where a control/inspection of the building site can take place. It states that the process can only

be triggered by the mechanism set in Art118 of the 2004 law according to which at the request of the Mayor or exceptionally of the central administration or of any citizen the technical services of the municipality or the local civil servants (duly mandated) can at any time visit building site for a control mission to check/inspect whatever aspect of the building project as they deem fit. Presumably this will occur only when there have been blatant and glairing breaches and where there have been specific complaints. Giving the local context it is doubtful that such complaints may be forthcoming.

In the light of the above it clearly transpires that with the current process it is inherently obvious that the existing building laws and regulations may not be adequately implemented in the country. The process appears to be poorly thought and ought to be reviewed to enhance the implementation rate.

6.1.2 Circular No. 002-CAB-PM of 12 March 2007

The government has within its long-term policy objective set its sight on making the housing costs much affordable to the general population. As such it created an agency known as MIPROMALO in 1990 to promote the use of locally fabricated materials with the hope that it would trigger the reduction of the cost of building construction. Even so, it took ten years after the creation of that agency to be operational. The Circular No. 002-CAB-PM of 12 March 2007 which regulates the use of local materials in the construction of public buildings was subsequently published to support to government policy on the promotion of the use of local materials. The question is whether the policy goal can actually be achieved as on the ground the feeling is usually that the costs of all type of material is similar and often local materials even subjectively assessed as more expensive that their imported competitors.

6.1.3 Law N ° 96/12 of 5 August 1996

Although the country has not made any giant step in reinforcing sustainability within the building construction field, it is noted that Law N ° 96/12 of 5 August 1996 establishing the general legal framework for the environment management in Cameroon in its Chapters 2 and 3 lays a foundation for it and encourages building projects to carryout environmental assessments prior to the realisation of a project that is likely to have an impact on the environment. Through its Art 41 this law prescribes

to the local authorities to ensure that environmental assessments have been made and approved by the central authorities prior to issuing building permits. Even so, a review of the building construction policies in the country show that there is no evidence that in Cameroon performance analysis is carried out prior or after building work. It can therefore be concluded that sustainability in building is not yet specifically included within the national policy. Even so, on the ground, several concerted actions by academicians and international institutions appear to be working to this aim. For instance, Dr Mempouo and UN-Habitat have worked together in completing the Climate zoning which could enable building practitioners in reaching the sustainability agenda in better and easier way.

In conclusion, the review of the main national building policies reveals that although the laws and regulations governing the building construction field are not gathered within a single document such as a building code, they aim at ensuring that building are constructed safely and in compliance with the building standards. Despite having a national agency in charge of norms it is observed that the applicable norms are mostly those of the ISO as the ANOR has not yet developed and validated national norms in extensive areas of the building construction. Those developed remain vastly unknown as there is no systematic dissemination of validated norms.

6.1.4 ANOR

There is no much information about the national agency in charge of norms and certification. The only reliable information available is that available on their website. It transpires that it is a governmental agency created by a presidential decree in 2009 with the mission to contribute to the conception/development and to the implementation of the government policies in relation to norms and standards in the country by working collaboratively with private and public entities. Although they express that their duties as including the issuance of certification they do not specify what the full process is nor which norms are mandatory in the building construction field. A review of the website reveals that over the past years a number of norms have been validated within the building construction field. However, those validated norms remain broadly unknown to the stakeholders due to a failure to popularise them. The norms validated are simply briefly mentioned with no further discussion and they are for sale.

6.1.5 Newspapers

The bulk of the country newspapers mostly covers political and tabloid news with less interest in policy matters such as those related to the building construction field. Even so, it is regularly reported that building collapses have been occurring persistently (Cameroon Tribune, 13 June 2016 N° 11114/7313). The content review of the relevant articles clearly indicates that building policies are grossly disregarded with the authorities doing very little to discourage devious practices and to penalise those who flout the regulations. The above article points an accusing finger on poor workmanship and use of poor and sub-standard materials for the pattern of building collapse observed. From reviewing the country building policies and description of the daily practice, it appears that the laws and regulations of the country are very basic and the feeling is that it they are uncoordinated and lack in depth. Other evidence indicates that despite being so basic in nature those building regulations are not effectively implemented as witnessed by the recurring building failures. Attempts were made to gather further statistical information from the national institute of statistic but were unfruitful due to the staff lack of cooperation and unavailability of data online.

6.2 Analysis of the survey questionnaires

This section analysis and discusses the data gathered through the questionnaire surveys. The analysis was done through the BOS instrument presented in section 5.2.2 of this thesis with the answers of each participant to each question synthesised into various graphs and charts. The cluster method was used in the analysis process because it could help clarify the distinguishing features of each group of stakeholders and establish their distinctness or otherwise (The University of Reading; 2001). In that process, combination of the individual answers to each question by participants of the same category of stakeholders were subsequently compared statistically to draw an overall picture of the views of all participants on the issue. After that stage the results of each of the four categories of participants were reduced and compared against the others and inferences drawn in a descriptive manner. The review of questionnaires returned by each category of stakeholders provided a general overview of their perception on various topics including the participants' views on the causes of poor implementation of building policies (1), an overall picture of the building practice in the country from

different perspectives (2) and the participants' initial thoughts as to how building policies could be better implemented (3)

6.2.1 participants' opinions on building policies implementation and barriers to effective implementation

- **Building policies are not implemented**

All categories of stakeholders were specifically asked whether in their opinion and experience building policies were effectively implemented in the country by building practitioners. That perception was gathered by measuring the level of compliance with the building policies by professionals. The overwhelming majority of participants of each category emphatically responded by the negative with 60% of Building owners, 75% of building occupiers and 56.3% of staffs of central and local authorities holding such view. The only category expressing a diverging view was the building professionals themselves as 59% of them thought that they observed building regulations. Even so 41% openly admitted that they did not. The below Figure 19 exhibits those opinions.

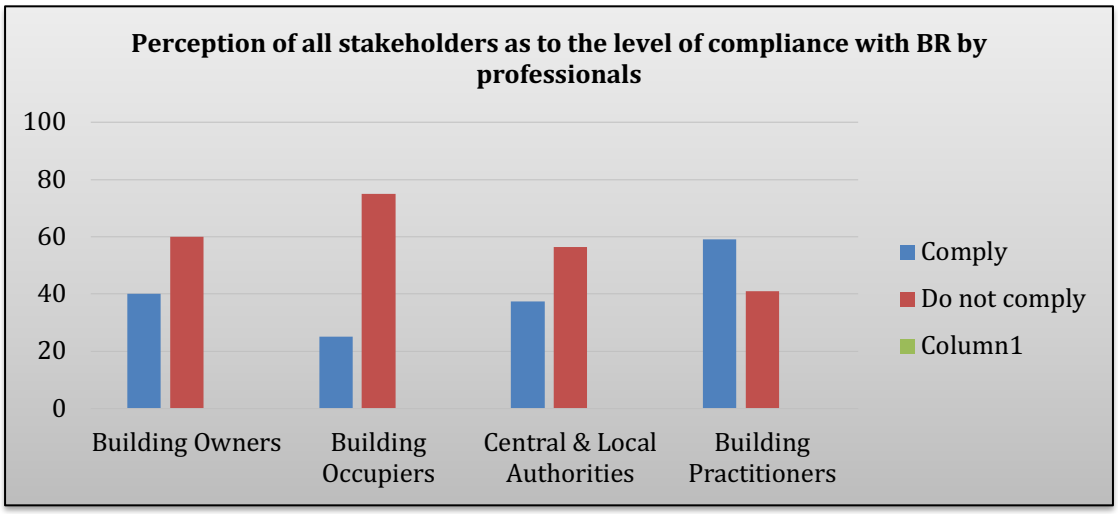

Figure 19: Perception of all participants on the level of building compliance of BR by Building professionals

Other evidence of non or poor/ ineffective implementation was traduced by the discomfort feeling expressed by participants in their buildings. The data gathered reveal that overall buildings are not overly comfortable as they are reported to be colder during the raining season (40% of building owners and building occupiers) and hotter during the dry seasons as reported by 70% of building owners and occupiers). Overall

buildings are believed to be more comfortable during the raining seasons as assessed by 55% of building owners and building occupiers compared to 30% only during the dry season. These figures apply indiscriminately to the various cities that took part and therefore highlight the fact that building materials and structures are used indiscriminately all over the country regardless of the different climate zone. Also, this suggests that buildings constructed in the jurisdiction are often either constructed in disregard of the approved design or that the design was not done in accordance to the art (incompetence of professional in that case) or that the material used may not have been compliant. In any event it traduces that the policies regulating either the design, construction or materials has not been observed adequately.

Those data are reflected in the below Figures 20 and 21

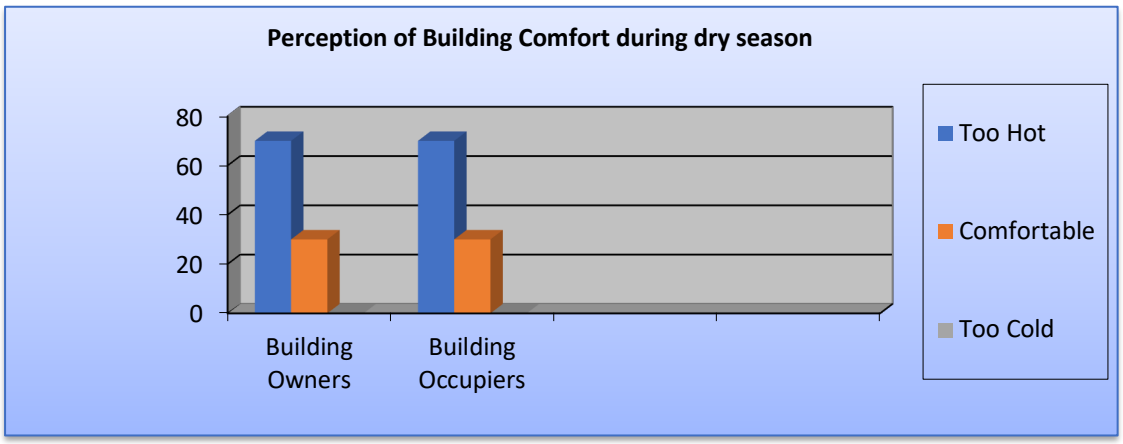

Figure 20: Stakeholders' Perception of building comfort during dry season

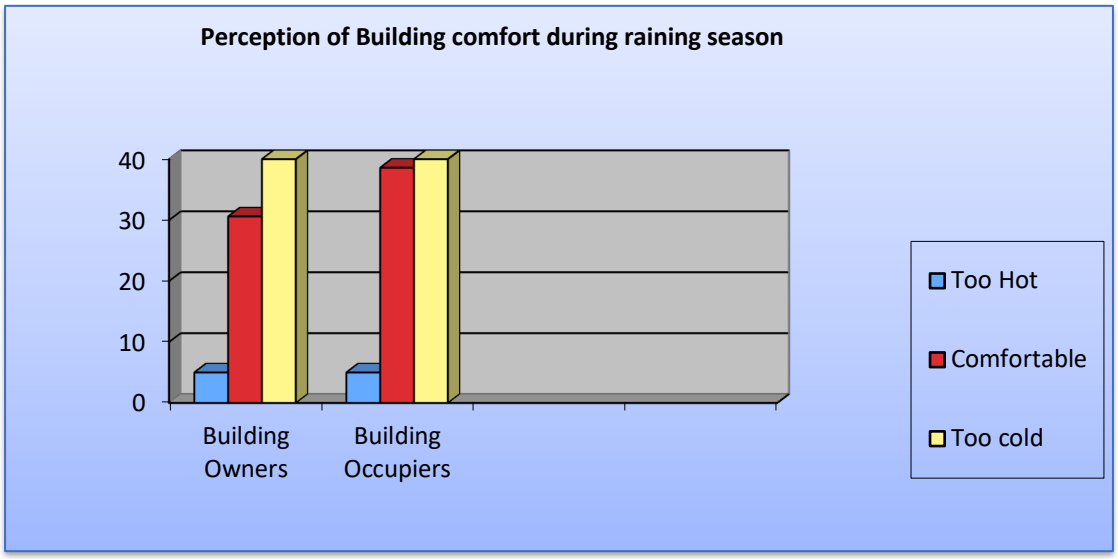

Figure 21: stakeholders' perception of building comfort during raining season

- **There is a glaring lack of monitoring documents or failure to complete the prescribed documents**

Turning to the documents completed by professional at the handover stage of the construction process more than 41% of building professionals surveyed advised that they did not complete the paperwork at all. Only 20.6% of participants of this category indicated that the building manual was handed over at the end of building construction to the owner and the same percentage also indicated that a full health and safety file was made available and handed out at that stage. On the same trend, a mere 14.7% of participants recorded that operation and maintenance manual was available and handed out to the building owners at the end of the construction work. In general participants indicated that such failure to obtain prescribed documents contributed to the poor or non-implementation of building policies. The full picture is shown when a paltry 3.1% of participants say they were with issued a compliance certificate at the end of the building process (i.e proof that all prescribed documents for all stages have been completed and approved). That information is confirmed by Building owners as when asked about the documents handed over to them at the end of the construction of their buildings 76.2% said they were not given any document. Participants of the category of building owners opined that documents that were likely to be most present at the commissioning phase were those related to the operation and maintenance of the building with 9.5%. Only 4.8% of participants indicated that a health and safety and building manual files for each were handed out at this phase. In only 4.7% of cases were all documents present. The findings are displayed in the below chart (Figure 6.7).

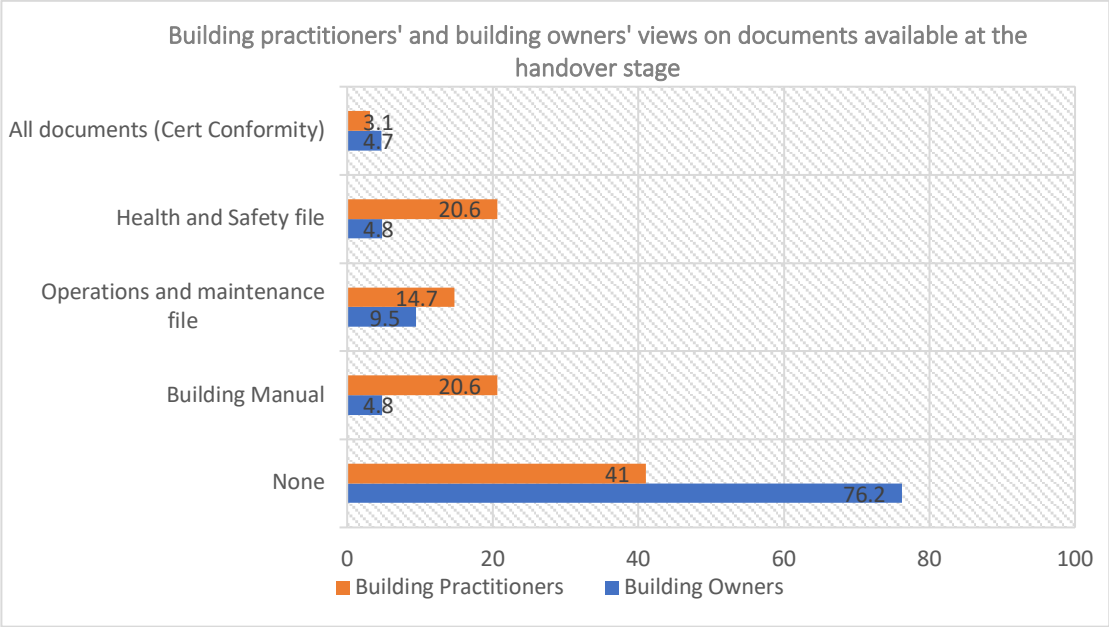

Figure 22: Stakeholders' views on documents available at the handover stage

The above findings suggest that in practice stakeholders do not comply with prescribed processes and/or do not keep evidence of compliance during the construction cycle. It may therefore be very difficult to enforce compliance without such vital documents. This indicates that building laws and regulations from the perspective of prescribed documents are not effectively implemented.

- **Causes of non-implementation of Building Policies**

Participants who openly agreed that building policies were not effectively implemented in the country were asked to succinctly indicate in their subjective view what could be the causes of the failure. A number of potential causes (10) identified from within the literature review was offered to each participant for ranking in the descending mode with 1 being the first most likely cause and 10 being the cause with the less adverse impact on the implementation of building policies. In that exercise participants of the group of building owners, building occupiers and staff of local and central authority all ranked the ignorance (lack of awareness) of building policies and processes by the general public as first cause closely followed by corruption. Indeed 68% of building owners, 66.66% of building occupiers and 75% of staff of local and central authorities ranked the ignorance cause as first whereas 33,33%, 28% and 44% respectively ranked corruption as second most likely cause. The category of building practitioners had the

same feeling, but the majority of its participants inversed and ranked corruption as first cause followed by ignorance of building policies with

a. Lack of awareness of building policies by all stakeholders

Participants of all Professionals were asked about their level of familiarity with the country's current building laws and regulations. The range of answers reflected that they were not aware of the various laws and regulations at the same level. In fact, only 38.4% of participants declared themselves as familiar with the Urbanism Code. That number dropped to 28.8% when asked to declare their familiarity with and awareness of the prime minister's circular of 2007 on the use of local materials. In the same manner only 19.2% of participants surveyed in this category admitted been fully aware of the Ordinance setting out the modalities for the building permit. The score was even lower for the ordinance governing land tenure, as only 13.5% of participants were familiar with that regulation. The salient fact was that whatever the laws and regulations taken into consideration less than 50% of the entire community of building practitioners was familiar with it. Practitioners were open as to their ignorance and their replies to the question are summarised in the below chart.

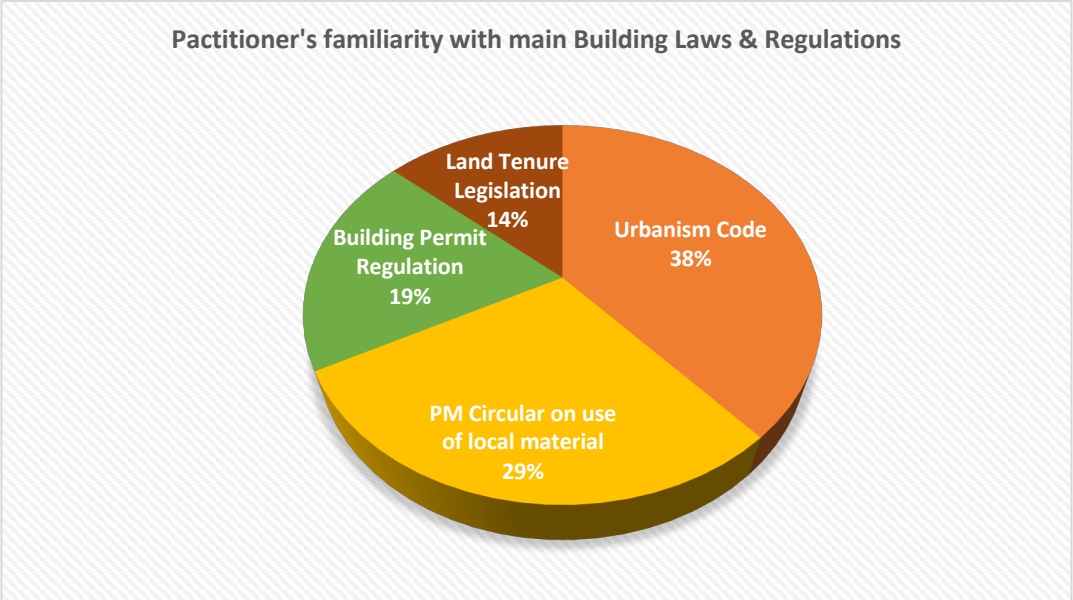

Figure 23: Practitioners' familiarity with main building regulations

That lack of awareness of building policies from the part of practitioners was corroborated by the combined views of building owners and occupiers who also admit not being aware of the building laws, regulations and norms as expressed by 78.3% of owners and building occupiers and operators of public buildings. Almost the same percentage (75%) of participants of the group of staff of local and central authority also indicated that in their opinion the main cause of non-compliance was owed to the lack of awareness of building policies and processes by the general public and including the building professionals.

In the same line of thought, the unawareness caused was also reflected through the non-respect of planning laws and regulations. Indeed, when asked about the planning permission more than 2/3 of participants of the combined category of building owners and building occupiers (78.9%) made it clear that contrary to the regulations they did not obtain a permit to build prior to the start of the construction work. Only 21.1% declared having complied with the requirement. The cause for the non-compliance is merely attributed to their ignorance of the regulations and or of the process or both.

Further evidence of the lack of awareness/ ignorance of building policies by all category of participants was also reflected through their knowledge of the sustainability issues and government policies. Only 5% of building owners declared being acquainted to the building technologies and their relevance to the government sustainability vision. That was well reflected in the survey of their usage of renewable energy source of energy conservation strategy used in the building as more than 64% admitted that no strategy was used in their buildings. That view was confirmed by building professionals who when asked responded in majority (55%) that in the last 5 years they have not been or have rarely been involved in building project involving the inclusion of sustainable technologies or energy saving strategies.

b. Corruption

In addition to the lack of awareness all categories of stakeholders openly stated that corruption was a major factor affecting the implementation of building policies. 100% of participants of all categories identified this phenomenon either as a first or second cause of ineffective implementation of building regulations in their opinion. The participants' views on what caused people not to observe the prescribed building laws and regulations. 6 causes drawn from literature review were proposed with the request to rank them on a scale of 1 to 6 with one being the most likely cause. The survey

revealed that the most likely cause from the practitioners' perspective was corruption with 37% of participants classifying it as such. Staffs of the local authorities also considered that corrupt practices were significant causes but ranked it as second cause (with almost 42%) behind ignorance and lack of awareness of policies. the building owners and building occupiers strongly affirmed that this was the most likely cause of non-implementation of building policies with more than 80% of participants of those categories forming such views.

c. Administrative bottlenecks

Participants also overwhelmingly perceived the lengthy administrative processes and the tedious legal and regulatory requirement as significant factor discouraging the general public from abiding with the regulation and thereby affecting the implementation of existing policies. For instance, the survey revealed that the process of obtaining the building permit was far from smooth as 53.8% of people who applied for the building permit declared that their application was rejected never granted without any obvious reason. In any case 100% of the applicants surveyed revealed that the administration took more than the statutory period (45 days) to decide on their application. 93.8% of the surveyed population made it clear that they did not bother obtaining or renewing the building permit and attributed the cause to the administrative bottlenecks.

6.2.2 Participants' assessment of the current practices on building construction field

- **Self-building practice**

Building owners were asked the question about who constructed their buildings and they overwhelmingly confirmed the literature review findings that in major urban cities more than 2/3 of buildings are constructed by their owners without recourse to contractors or building practitioners. Indeed, 66.7% of building owners indicated that they constructed their building themselves whereas 22.2% of participants only indicated that they used the service of a qualified building contractors. 11.1% did not reveal who constructed their buildings. That view is summarised within the chart below.

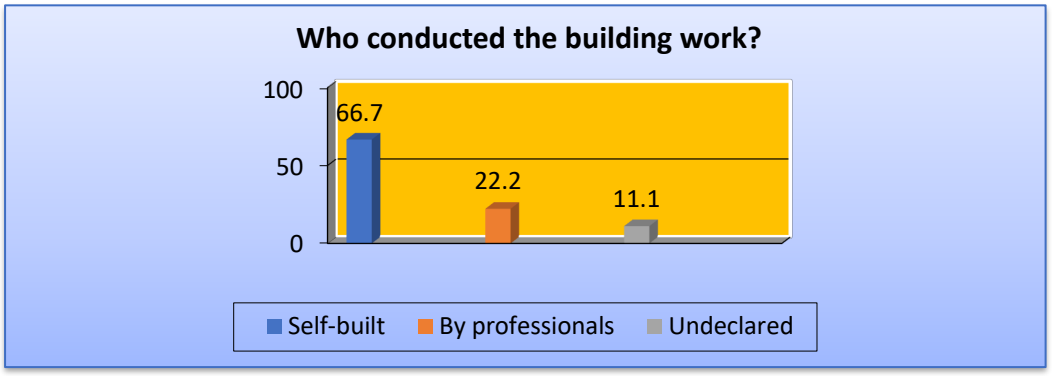

Figure 24: Owners' responses about who constructed their buildings

- **No control/inspection**

When asked to discuss the actual practice during the construction phase, participants made it clear that despite the requirement that buildings be inspected/control throughout the construction phase it was not really the case. Indeed, the survey of building owners revealed that 40% of buildings only were the subject of an inspection throughout the construction phase. That perception was confirmed by staffs of the local and central authorities as on the question asking whether construction sites were the subject of inspections after the grant of the permit to build; almost 20% of participants were unable to express an opinion as this was not within the scope of their duties. Of the remainder 81% or so of participants almost 70% advised that they only did that occasionally with 30% confirming that inspection of building site post issue of permit to build was automatic in their department. Without being asked the question directly, building practitioners corroborated the views of the other categories about the poor inspection/building control regime by identifying the failure to control building site as the main driver of non-implementation of building policies with 81.5% regretting that the local authorities did not always carry out their inspection/control duties.

- **Laxity and permissiveness of enforcement authorities**

The majority of the surveyed participants reported that in practice the local authorities acted in ways that allowed the stakeholders to disregard the existing building policies. for instance, although the policies prescribed a compulsory inspection of buildings during the construction phase, building owners and practitioners indicated that in practice only 36.8% of buildings were actually inspected/controlled throughout the

construction phase. That proportion is almost matched with 70% of implementers (staff of central and local authorities) conceding that for various reasons ranging from lack of staff to budgetary constraints they did not always inspect/control buildings during the construction phase. That view was shared by building practitioners who said that there was no settled effective monitoring or evaluation of the implementation by the authorities with 81.5% of them admitted that the authorities only carryout a monitoring or control of the implementation process occasionally. The survey also highlighted the authority's permissiveness in showing evidence that buildings were constructed and occupied without evidence of compliance such as certificate of conformity as only 3% of building professionals reported having obtained a certificate at the end of construction. The overwhelming evidence was that in general in the event of breaches, sanctions were almost never issued and where penalties were issued they were not enforced in practice.

Conclusion

The level of agreement is significant as to the fact that Building practitioners who should be the force behind compliance and implementation do not themselves observe the existing Building laws and regulations. All stakeholders share that opinion across the board including the professionals themselves. The hypothesis that the existing laws and regulations are not effectively implemented in the country is therefore confirmed as evidenced in the below chart.

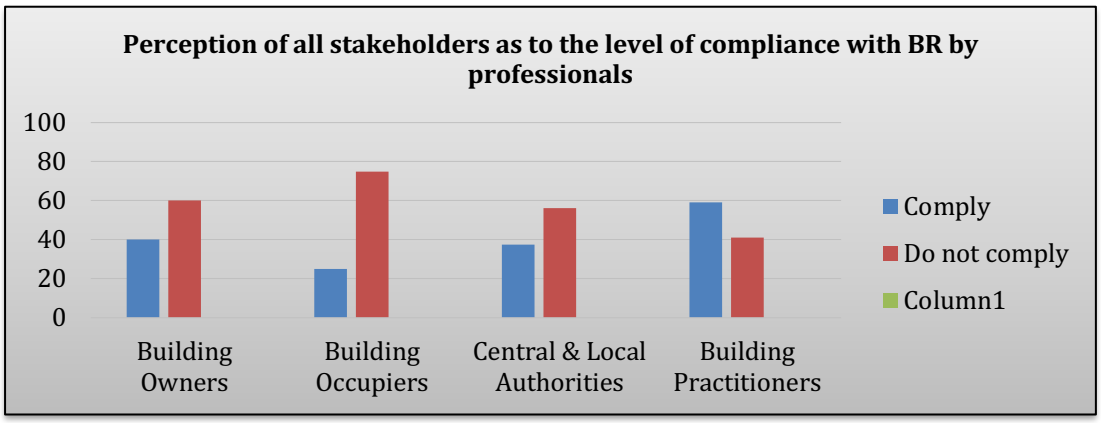

Figure 25: Stakeholders' perception as to the level of compliance with BR by Professionals

6.2.3 Suggestion for improvement

Participants' opinions were sought as to what would encourage stakeholders and trigger a greater adherence and compliance with the building policies. 5 answers were proposed and participants were encouraged to choose 3 of the answers. The answers were (Better education, difficulty in bribing the officials, reward for compliance; severe enforceable penalties for non-compliance and a promise of a safer building). The result shows that the participants opined for various solutions with the best solution being the better education of stakeholders with 32.4% follow closely by severe penalty for non-compliance with 29.4%. The third preferred answer was the promise of a safer building with 20.6%. The difficulty to corrupt officials ranked fourth with 14.7% of vote. The lowest choice was the reward for observing building regulations with 2.9% of voices only.

In the meantime, participants overwhelmingly argued that the government's action was critical to inverse the current trend. They suggested that the government could interevent acting through awareness campaign programs (34.8%) as well as through trainings (21.7%) and mass media information programs (21.7%).

Conclusion

As clearly highlighted in the above analysis it is apparent that existing building laws and regulations are not effectively implemented in Cameroon and a plethora of causes are also identified. Suggested approaches are advanced for solutions. Because of the nature of the enquiry the survey approach has confirmed the basic facts picked from the literature review. In order to think of an adequate strategy that could assist in enhancing the implementation level of building policies in the jurisdiction, it was deemed necessary to give stakeholders of various identified categories a platform to explain their view in depth and to share their experience greater detail. It was also critical to understand the local context. That thought triggered the decision to gather further data through interviews and focus groups.

6.3 Analysis of Data gathered through Qualitative methods

This section summarises the analysis of data collected through the in-depth interviews in the case study country and in England respectively (6.3.1), as well as those collected

during the focus group discussions (6.3.2) in the case study country at the main research phase.

6.3.1 Analysis of the data gathered from in-depth interviews in Cameroon and England

The analysis of the data is split in two minor parts to reflect the views of stakeholders in the case study country in the first part and to review the experience of practitioners of England in part two.

6.3.1.1 Interviews of stakeholders in Cameroon

Interviews were conducted in French and/or in English, recorded and fully transcribed. The analysis was initially inductive, with the meanings of each respondent's statements and paragraphs grouped into different 'nodes' using qualitative research software (NVIVO 10). The analysis of the data gathered was done using the Grounded Theory approach (Creswell p14, Patton p127 1987; Glaser and Strauss 1967) because this strategy allows important issues to emerge directly from the data and thereby reduces the impact of subjective preconceptions. The coding exercise brought six main nodes namely: (1) the participants' demography; (2) overall participant's views on the building policies in the country; (3) the perceived barriers to the implementation of the existing building policies; (4) participants' suggestions on how to make things better, (5) the relationship between stakeholders of the building construction field in Cameroon and (6) the implementation of building policies in England. The 'barriers node' was divided into two sub-nodes (barriers external to the policy and barriers internal to the policy) whereas the "Proposed Solutions" node was divided into three sub-nodes (solutions related to the context, solutions related to processes and solutions related to the policy itself). The other main nodes did not lead to any sub-nodes.
Assessment of the sub-nodes listed above drew out greater nuance and highlighted additional opinions, issues and suggestions. To supplement this predominantly qualitative analysis, quantitative analysis was conducted of excerpt-counts to determine the total number of references for each node and sub-node. This quantitative coding recorded the frequency of mention rather than the respondents' position or interest in the node or sub-node. In compliance with the ethics requirements, adequate steps were

taken to preserve and maintain the participant's anonymity. Quotes from participants that provided a succinct description of the aspects of causes and proposed solutions to the issue of poor implementation of building policies and current practices were also recorded. The participants' demography node was excluded from the analysis as it was deemed irrelevant to the overall findings.

Results

- **Barriers**

Participants' statements were attributed to barriers if they used words such as 'cause', 'barrier', 'trigger' 'restriction', 'issue', 'concern', 'lack of', 'risk' and 'problem'. Participants did not display any difficulties in enumerating various causes and challenges that they considered as hampering the implementation of building policies. 165 references capturing the perceived causes or barriers to effective implementation of building policies were identified with 143 related to the causes identified as external to the policies and 22 related to those related to barriers internal to the policy. Those causes and references are summarized in Figure 26 below.

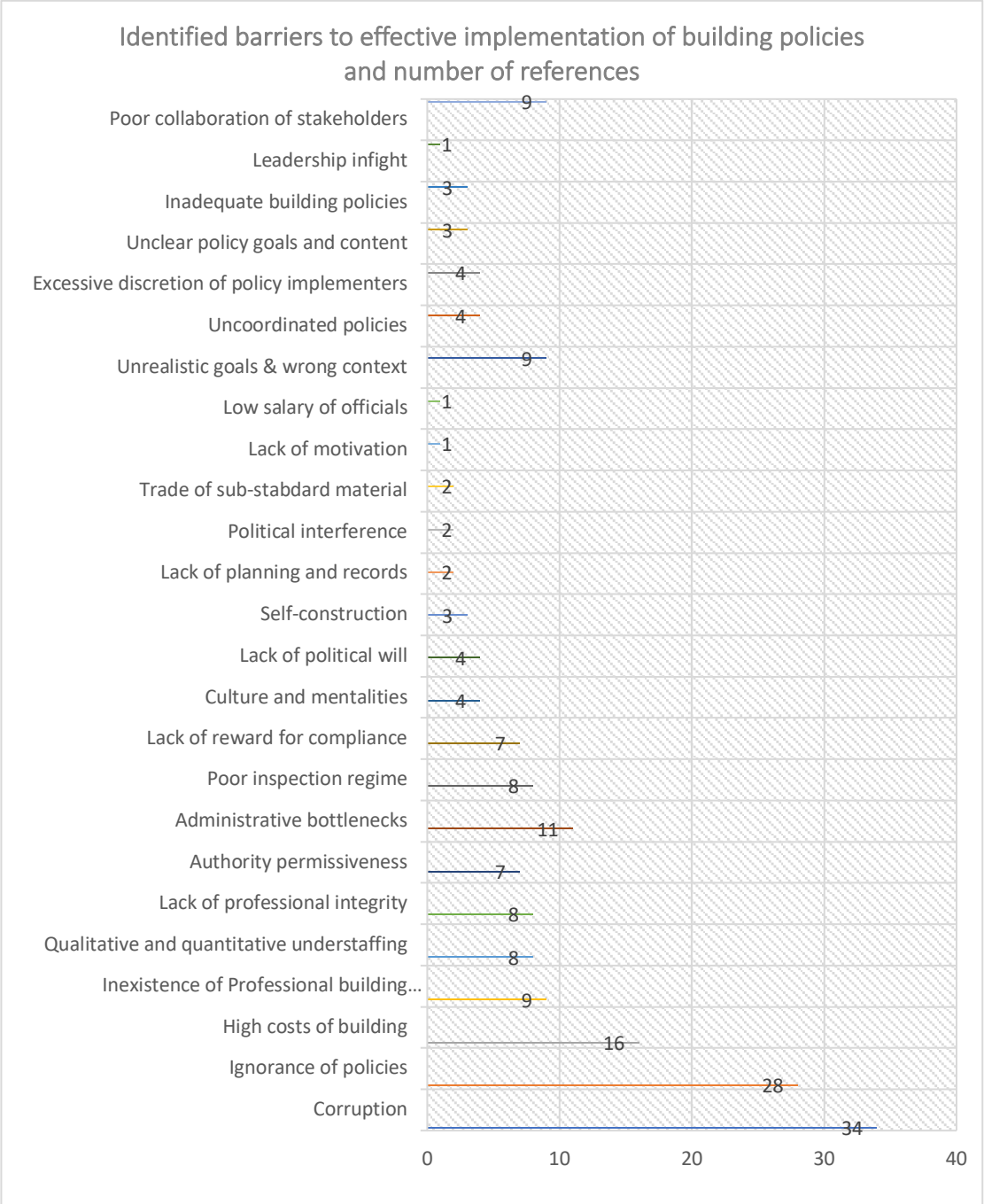

Figure 26: Barrier to effective implementation of building policies (Digits in purple = causes internal to the policy; Digits in red = causes external to the policy)

The five most salient barriers are external to the building policies and are (i) Corruption, (ii) Ignorance of building policies by stakeholders, (iii) high costs of building construction, (iv) Administrative bottlenecks and (v) the inadequate training of professionals respectively. Almost 58% (95) of recorded references clearly identified these 5 causes as gravediggers of the effective implementation of building policies. 100% of participants identified corruption as being the most prominent cause and

foundation of all other barriers with a combined total of 34 references made. That is incapsulated within the following statements: “Bribe is the mother of all achievements here” (Respondent #12). “what is often said in terms of corruption in Cameroon, hum, sometimes I say it is certainly endemic” (Respondent #14). “Corruption has made its bed in our land and until it is defeated all effort in the building sector like in all other areas will be lost” (Respondent #9).

The third most prevalent barrier was the high costs of building construction with 53% of participants identifying it as such with a total of 16 references made. The costs referred to in this occasion are actually those associated with the purchase of building material, the acquisition of permit to build and other administrative associated costs such as architect fees and government taxes. In general, they say. “The administrative costs of various bottle necks make it just impossible to observe the law” (Respondent #2); “it is expensive to comply with the regulations as doing so leads to payment of lots of taxes and any way people have no money” (Respondent #13); “The regulations are scorned for the simple reason that people have no means to build adequately. I mean financial means. It is not cheap to buy building material that complies with the standards” (Respondent #11).

Participants also overwhelmingly identified the administrative bottlenecks and delay as the fourth pervasive barrier with over 35% of participants backing that view with 11 references summarized by Respondent #9 who commented that “the delay in decisions to issue building permits as well as delay to the issuance of court orders lead to the breach of laws and regulations by the people”. This rhetoric is also heard from Respondent #10 when he says “It is systemic, the deadlines are too long. That is, the deadlines prescribed by the texts are not respected, even by the Administration.”

The lack of or inadequate training of personnel was identified as the fifth most prominent barrier with more than 35% of participants listing it as such and supporting their position with a total of 9 references. Participants strongly point fingers at the lack of training from all borders including the training of local and central government staff as well as that of building practitioners who for most have never had a formal training. Those who had some kind of training indicate that their professional knowledge has never been updated. Those views are summed up in the following quote of Respondent #12 who says builders “have no formal education and I don’t think that they know anything about those laws.” Respondent #6 also says the same in respect of local

authority staffs when he observes that "there is really no training per se but there is a presentation for two to three days on how the structure operates."
The other barriers identified as external to the policy are numerous but can be classified as minor given the infrequency of their reference by participants in general as illustrated in Figure 6.11 above.

With respect to the barriers internal to building policies themselves, participants considered that specific aspects of the various policies contained within the germs of the impossible or difficult effective implementation. More than 20% of participants using 9 references observed that the building policies were unrealistic and usually designed without consideration to the local context and in their views, it was almost impossible to effectively implement such policies. Respondent #4 is sharp on that point and says "all the laws we have are laws we copied from other countries such as the French norms, the British norms and the German norms, which are imported from other countries. They cannot work here as we have different ways of life". The same proportion of participants also criticize the scattered and uncoordinated nature of building policies before concluding that it chokes any genuine attempt to effectively implement the policies themselves. To that effect Respondent #5 rues that "those laws and regulations you say cannot be implemented 100%. "Yes because they come from everywhere, the ministry of health, ministry of Ministry of Lands, Cadastre and Land Affairs, MINDUH, local authorities and so on. And worst everybody is the boss when they intervene. It cannot work". The other minor barriers identified as internal to the policy are identified within the above Figure 26 above in blue digits.

- **Overcoming barriers**

During the interviews, participants were invited to discuss their views on how the causes identified by them as preventing to the effective implementation of building policies could be overcome. Statements reflecting solutions to tackle the identified causes often identified necessary actions needed by various categories of stakeholders and the desire for change ("*they should*", "*I think the authorities should*", "*professionals should" "we should" "needs to change*"). Other comments in this node included words such as *"I suggest", "to think about", "to make sure", "ensuring that", "we/ they could/should*". It was observed that participants did not encounter any difficulties expressing their thoughts on proposed solutions. In general, they provided greater depth

and proposed specific courses of action. The proposed solutions node was sub-divided into 3 sub-nodes as illustrated in Figures 27 to 29 below. Those sub-nodes are (i) solutions related to the local context, (ii) solutions related to the processes and (iii) solutions related to the policy itself. The most salient proposal made by 100% of participants was ideas relating to improving education, awareness raising; popularization of building policies and improving stakeholder's education with 25 combined references. Participants commented that; "Awareness raising campaigns should be organised on knowing the laws of urbanism, building laws, on the type of people who should be recruited for building" (Respondent #6). "*I think initiatives should be made to educate people and get them truly involved in decision making*" (Respondent #2). This strategy requires the central and local authorities to take leadership and act. The second most popular strategy recommended by participants which also falls under the first sub-node was in direct response to the corruption phenomenon identified in the barrier node. More than 1/3 of participants made 7 references in suggesting that developing a strategy to enhance professional integrity could contribute in achieving the effective implementation goal. They comment that "*A proper strategy should be found to tackle this conduct which put life at risks. The government should put in place adequate methods to address the moral shortcomings of civil servants and may be of everybody because the system is rotted*." (Respondent #1).

Tougher and effective sanctions against corrupt officials and enforcement of sanctions for breaches were the third and fourth highest proposed strategies, respectively under the heading of solutions related to context, and were both mentioned by just under one third of the participants and attracting 4 references each; "*the law must be respected. It is necessary to be very stringent in this respect*" (Respondent #7); "May be tougher punishment and greater integrity from the officials could trigger a better response." (Respondent #9).

The other strategies suggested by participants as pertaining to the context sub-node were more generic and limited as illustrated in the below Figure 6.12.

The strategies proposed and classified as pertaining to the process sub-node were 6 starting with the suggestion that easing the building process permit could contribute in achieving effective implementation of building policies. That suggestion was made by almost 18% of participants ad was supported by 5 references. With the same proportions participants also thought that a better dissemination of existing policies

would contribute in reaching the target. These two proposals are clearly in direct reaction to the identification of high building costs and ignorance of building policies as causes of poor or inadequate implementation of building policies. other suggestions recorded under the sub-node of process were the prescription of compulsory documents (by 3 participants and 3 references) followed by the establishment of an effective enforcement regime (by 2 participants and 3 references), the standardization of practices on building sites (by 2 participants and 2 references) and the establishment of an effective collaborative work framework (by 2 participants and 2 references) as summarized in Figure 6.13 below.

Participants intervened moderately with respect to the strategies identified as pertaining to the third sub-node (related to policies). 5 Participants suggested that in order to curtain the scattered and uncoordinated nature of the current policies, an effort should be made to develop a single document such as a building code where all policies and technical specifications may be held. That suggestion was captured in 6 strong references including the one made by Respondent #11 "*We can have one building code only in which all the regulations are compiled. That can help the professionals and even the individual who really wants to learn about it. It will then be easier to trace what should be done and reference it*". The other proposed solutions pertaining to this sub-node are reflected within Figure 29 below.

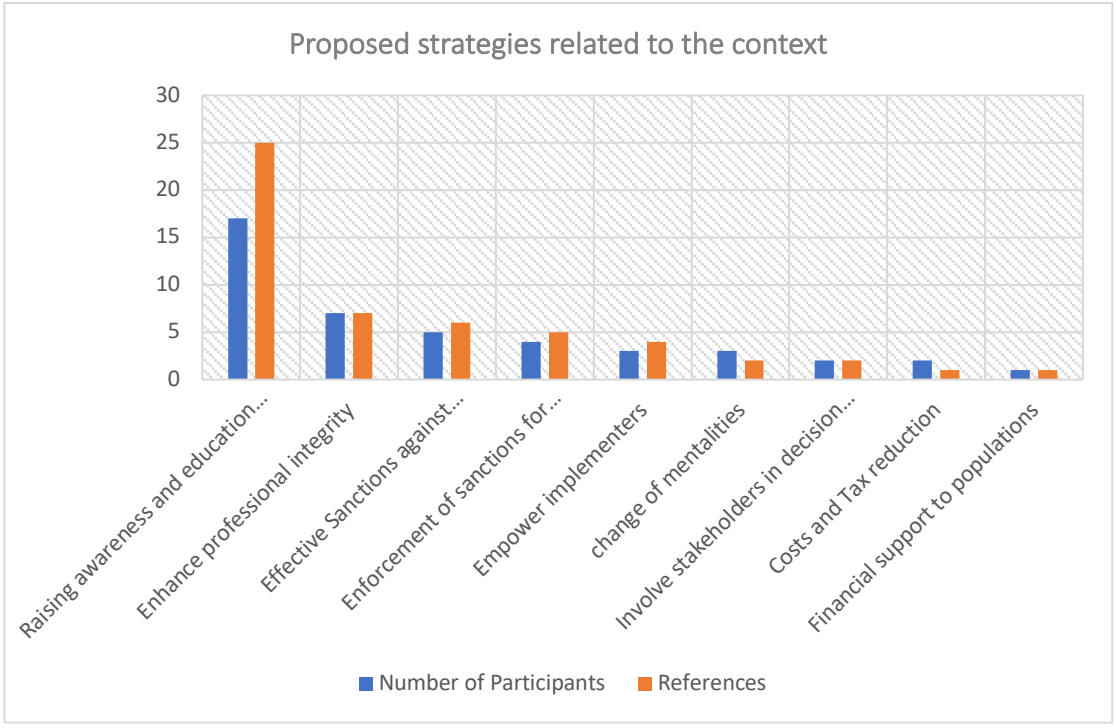

Figure 27: Proposed Strategies related to context

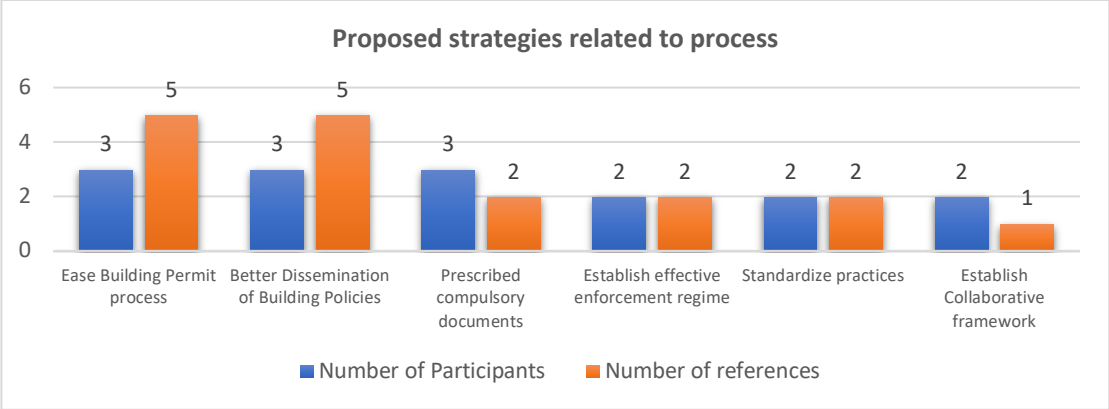

Figure 28: Proposed strategies related to process

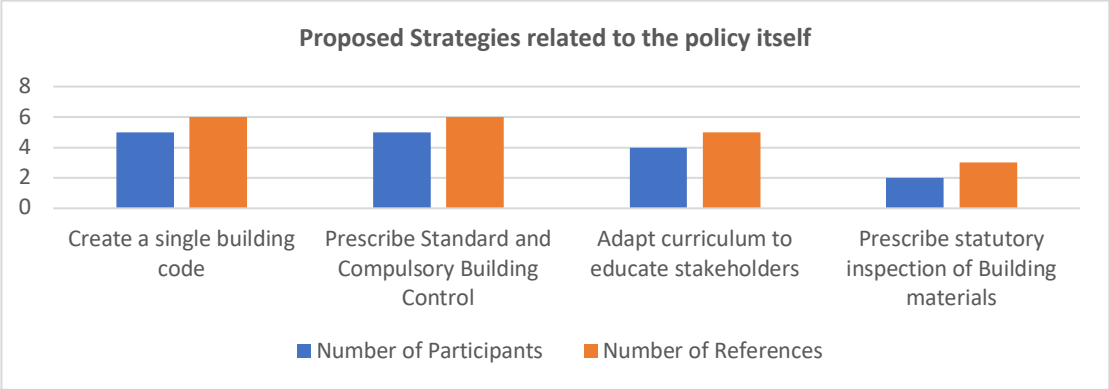

Figure 29: Proposed Strategies related to the policy

- **Collaboration between stakeholders**

From the data collected it emerged during the analysis process that participants have strong views on the collaboration between stakeholders of the building construction field. Their views were captured under one node. The general consensus as expressed by almost 60% of participants and defended through 20 references was that there is simply no collaboration between stakeholders of the industry. "*there is little or no collaboration at all amongst stakeholders when constructing a small or average house*" (Respondent #2); "*I don't think they work together because if they have been working together then you will not have what you see here*" (Respondent #13).

The English experience (interviews in England)

The other node created in the analysis process was destined to capture the views and experience of practitioners of the jurisdiction of England in order to identify their

specific success factors. It transpired from the data as agreed by the three interviewees of that jurisdiction that their building policies were effectively implemented due to specific strategies identified and implemented. The success of effective implementation in England is largely attributed to clear processes, concise building policies, strong technical knowledge of practitioners and implementers as well as to culture and general awareness of the population. It is also remarked that unlike in developing countries self-building practice is almost inexistent. The position in this jurisdiction is summed up by Respondent #15 when he says "*The planning laws and building code are very precise and I simply do not see how a professional can claim confusion or lack of knowledge to justify any breach*". Respondent #17 follows and states that "*I think our success is mostly due to the strong and transparent processes really because all building companies know the regulations and they know that any breach will be dealt with*"; "*The statutory inspections always take place and I cannot imagine a building being constructed without being inspected no that does not happen here*". When asked about the people's attitude and relationship with the existing regulation Respondent #16 summarises what his peers had said by stating that "*the vast majority of people do abide by the planning laws. A very small minorities know exactly what they are doing when they are doing it and deliberately do flout the law, but I would say the majority of people do actually abide by them*."

The three participants from England discussed the causes of their perceived success and extensively attributed it to the competency of the entire technical team. With the specific case of building controllers, Respondent #17 clarifies that the system allows for people to qualify as building controllers through two main roads: an academic road and through accumulated experience in the building field. In this latter figure an intense in-house training is provided upon recruitment. That is exactly the same situation with the building planners. Overall Respondent #17 explains for example that "*we are extremely knowledgeable when it comes to building regulations that is obviously because most of us became building controllers after significant years of experience. For example, we are three in the team right now and I am the only one that came through academic training. The two others worked for at least 15 years each one as carpenter and the other as a surveyor*".

When questioned about their view on the collaboration on building sites between the various stakeholders Respondent #15, a planning officer was adamant that they are there first of all to assist the people to construct compliantly and as such their encounter

is rather friendly. In fact, she insists that when people are unsure they always come to them for prompt advice knowing that they would do everything to make the process easier for them to achieve their project. She goes on to say, "*I think that we are a whole team because as soon as the planning permission is issued the file is passed to the building control team with a clear note and often they phone us when a situation is not quite clear*". A review of the building regulations in the UK reveals that in any event the project owner must notify the building construction team at least 48h before the start of the building work and links well with the collaboration illustrated. The building controller interviewed has also been adamant that their mission is to "guide the building team in constructing efficiently and in line with the regulations". He explains that his encounters with practitioners on the field is always friendly and they often discuss how to better the project together.

Given the sheer references to the corrupt practice in Cameroon the question was asked to participants of the English jurisdiction whether such phenomenon existed in their routine. The non-verbal cue picked up from their body language shows that they were simply baffled and plainly stated that to their knowledge it did not exist. When they were asked whether there was a possibility that a bribe could make them disregard the proper inspection/control of a building Respondent #17 took time to summarise that "*the building control officers would be on a salary from the local council. It would be a high salary but you know erm I have been in the building control for 30 years and it the salary that helps educate my children pay my mortgage. Erm so erm any kind of bribe that would ever be offered in my way would be quite laughable really. With Local authority, employment conditions help you if you real and Pension as well also helps you erm so a bribe is really a non-starter*".

Participants of this jurisdiction were also asked whether despite their absolute views that building polices were effectively implemented there were any barriers to the improvement of the already good conditions. They identified three specific barriers. Surprisingly the first barrier identified was the creation of independent building controllers. They unanimously thought that it has lowered the standards within the built environment in general due to the fact that everybody including the councils now had to fight to get clients. Whilst it may be a good thing for the consumer they insist that it has lowered the standards. The second barriers identified was the lack of continued development plan financed by the authorities. Practitioners suggested that such additional training could assist in maintaining their technical knowledge to the top

standards. The last barrier which was more of a wish was naturally the insufficiency of financial resources as Respondent 15 thought that it prevented the authorities to hire sufficient number of personnel to be more efficient.

Discussion

The barriers identified in this enquiry confirm the initial findings made in the survey study done at the earlier stage of this research. They provide further insight into the causes and difficulties in implementing building policies in developing countries. In general, there was consistency across the board whether on the perceived barriers or to the proposed strategies. The identified barriers were classified as either external or internal to the policies. This classification was made in order to identify the barriers or causes directly linked to the policymaking and to differ them from those related to the actual deployment of the policy on the ground. The most crucial information arising from the data is that corruption is pervasive in the country and significantly affects all activities in the building sector. Corruption is entertained by unclear policy goals and unclear processes. When corruption is coupled with the other major barrier (ignorance of policies by all stakeholders) unanimously agreed by all participants, it simply become impossible to implement the building policies. In fact, these two barriers have been mentioned extensively in the literature (Bikoko & Tchamba 2015; Ametepey & Ansah 2015; Twum-Darko & Ntombizodwa Mazibuko 2015; Rahmat 2015) and the outcome of this study suggests that nothing has been done to address the situation.

The ignorance and lack of awareness of Building regulations barrier identified by participants can be directly linked to the unrealistic policy goals as many participants felt that the current policies were not fit for the context. Many perceived them as a mere copy and paste product deriving from developed countries with no relevance to their context. That can explain the lack of interest in those policy and hence the high level of ignorance observed. It is also submitted that this links with the barriers “lack of motivation” “lack of political will” “self-construction” and “unclear policy goals” as they all tend to justify the failure to engage adequately and in a compliant manner with the regulations.

The challenges and barriers faced by practitioners and decision makers regarding the effective implementation of building policies in this jurisdiction are clearly identified both within the literature review and in this study. However there has not been any visible targeted strategies to jugulate the identified causes. The interview respondents

have been asked to make suggestions, but the proposals made appear to be highly generic as they provide global blanket solutions such as awareness raising and education of all stakeholders, and development of strategies to enhance integrity. The proposed solutions could be better understood during a focus group activity. Although the aim of this enquiry is not to look at policymaking, it increasingly becomes apparent that a greater source of ineffective implementation lays in the policy conception and development phase.

The interviews conducted with practitioners of England linked well with the above findings and serve to identify ingredients leading to success and what enable them to effectively implement their building policies. Lessons could be drawn from this experience in suggesting ways forward.

Conclusion:

Discussion with the selected interviewees enabled us to have a clearer understanding into the causes of the poor level of implementation observed in the building construction field. Whilst the quantitative survey carried out at the beginning of the project identified causes similar to those evoked by interviewees, the interviewees went deeper to explain what they understood by those causes. Whilst corruption remained perceived as one of the significant factors, its association with other identified factors revealed that unsatisfactory policy harmonization (characterized by lack of cooperation between the various ministries) made worst by unclear processes and the general ignorance further weaken the implementation process. Poor policy strategy coupled with budgetary constraints (characterized by shortage of human and financial resources) and overburdening bureaucracy also constitute the bedrock of the poor outcome observed. Interviewees attempt to identify how best to improve the situation on the ground seems to lack in depth as their proposed solutions are rather generic. However, many consider that the keys to success lay in establishing a proper education and sensitization of all stakeholders as well as developing an adequate strategy to jugulate the corruption handicap. This would go a long way to curb the excess and abuse of powers displayed by staffs of the local authorities and politicians and would promote legitimacy amongst all stakeholders which could in turn strengthen the powers of the implementers and inspire confidence. Other strategies such as standardization of practices, establishment of a collaborative framework, costs and taxes reduction and

greater integrity of officials are also summarily evoked as potential drivers of a better outcome. There is evidence that adopting a proper strategy and equipping implementers and practitioners with good and strong human and financial resources whilst pursuing the active education of the general public could lead to better outcome as highlighted by the interviewees from England.

6.3.2 Analysis of the Focus Groups data

Through the coding and analysis process referred to in Chapter 5, four themes which are considered as an accurate picture of the content across the three focus groups were identified. Those themes are similar to those born out of the survey questionnaires developed earlier. Those themes are: (a) the causes of non or inadequate implementation of existing building regulations, (b) proposed solutions to the issues highlighted, (c) derogative practices on the ground and (d) stakeholders' opinion on building laws, regulations and policies.

With regards to the actual analysis, a qualitative analysis was undertaken by ranking causes and proposed solutions as "frequently recorded" (mentioned at least once by each participant of the three group discussions), "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.

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

Table 15: Causes of non or inadequate implementation of building laws and regulations by FG participants

The causes derived in this study provide new 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 & Ntombizodwa Mazibuko 2015) as well as with those of the earlier enquiries made in this research and presented above.

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

(a) 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 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 blind eyes on illegal activities (such as building without a valid permit or not intervening to stop illegal and unsafe constructions 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 figures regularly intervene to invalidate their decisions this is reflected by the submissions of FG03/006 for example when he says 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*"

(b) 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."

Throughout the discussions and across all groups strong references were made by all participants, without exception indicating that stakeholders have been poorly educated and this has resolved in the current ignorant trend. It is suggested that improving the implementation rate should stem from tackling this issue head-on.

(c) 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 create a space for opportunist and untrained individual to cover the needs of the poor and uneducated populations. The groups agree 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.*"

It is also obvious from the data that 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 who is of a different profession 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 of the local authority 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*."

(d) Self-building practices

Self-building practices have been identified by each participant of the three groups 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 concurs with that statement and clarified 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 costs 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 summarily presented below:

(a) 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 a line from 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." 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 proceeds of planning and other applications are controlled by the later without them having any say. To that effect FG01/006 angrily states that "*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 hampering the effective deployment of building laws and regulations. The line is summarised by FG01/003 who 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."*

(b) 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. It is observed that (FG03/005) "*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 ministry of 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*." In a triangulation mission a review was done, and it is apparent that there is no strategy at

the heart of the government to coordinate the various regulations applicable throughout the building construction process. This malfunction ought to be analysed and adjusted if the government is serious in addressing the issues subject of the complaint.

(c) <u>Administrative bottlenecks</u>

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 build 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 he 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 specifics causes were recorded under this head and are summarised below.

(a) <u>Inadequate/ Insufficient financial resources</u>

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.

(b) 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. FG02/003 summarises this view 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."*

(c) 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)"*

(d) 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 FG02/001in 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.

(e) 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*."

(f) 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

Proposed solutions	**Incidence of proposed solutions**
Establish clear processes (systematic recordings and follow up)	Frequently recorded
Severe penalties against official caught in corruption and traffic of 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

Table 16: Proposed solutions and incidence on suggestions made by FG Participants

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.

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*."

Conclusions

Overall although many causes were identified, participants did not appear comfortable with the ideas of making suggestions on how to improve the implementation framework and 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 17.

Stakeholders	Causes from the perspective of	Proposed solutions from the perspective of
Central Authority	• 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	• 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

Local authorities	• 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	• 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
Building Practitioners	• Corruption • Inadequate technical knowledge • Ignorance of laws and regulations • Lack of collaboration • Lack of building controls • Regulations out of context • Confusing regulations	• 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
Building Owners	• Ignorance of laws • Corruption • Resistance to cultural change • Financial hardship	• Education of the population • Strict penalties for breaches • Create enabling context • Subsidise constructions • Alleviate administrative processes and reduce costs

Table 17: Overview of the causes and proposed solutions of the factors impeding the implementation of building regulations per stakeholder's category as perceived by FG Participants

6.4 Discussion of the findings drawn from the analysis of the whole data collected

- **Barriers and proposed solutions from the participants' perspective**

This study has enabled the gathering of data which have provided new insight into the difficulties and constraints surrounding the effective implementation of building laws

and regulations in developing countries. The data also open wide open the understanding on the local practices on the built environment field and gauged the stakeholders on how the barriers identified could be tackled.

From the three source of data (survey, interviews and focus group discussions) there was a significant level of consistency in the responses provided. With respect to the perceived causes, proposed solutions and views on current practices there were no cases where a cause or a solution was persistently evoked by less than two participants. All the barriers 25 identified (Figure 26) above fitted well into the failure to adhere to one or more of the three categories of drivers (competency, leadership and organisational) and thereby supported earlier literature on factors affecting the effective implementation of policies in general (Fixsen et al; 2005).

With specific reference to the causes of the non or ineffective implementation of the existing policies, it is observed that they concur with the causes identified in earlier studies (Dahiru et al (2012); Berrisford S (2010); Kimani & Musungu (2010)). However, three barriers which are not systematically identified in earlier studies came to light. The first of those three was the inexistence of professional building controllers as separate and independent profession. This barrier was commonly cited with insistence (9 references during the interviews phase and a myriad of references throughout the focus group discussions). It seems that the failure to adequately identify this barrier in earlier research can be attributed to the fact that the general blanket of lack of or inadequate training of professional could also encapsulate it. It can also be due to the lack of thorough questioning and depth of the discussion during the data collection activity. Indeed, the persisting and structured interviews and focus group discussions held in this study allowed participants to elaborate deeper on each cause and it quickly transpired that from their perspective building controllers had no specific and relevant training. Staffs of the local authorities considered as building controllers are merely jobbers recruited from various walk of life and including some people with no formal education and people poorly equipped both intellectually and financially to effectively measure and deliver to the full extent the goals expected from them. Like in England it would help if the central government could revamp the practice in this field by making the building control a whole independent profession in the same way as architects and engineers. For that to happen a proper training and qualification system

should be instigated in addition to the practical training provided on the ground by the local authorities. the training of those selected would ideally be centred on building policies and ways of ensuring that they are adequately implemented.

The second barriers which have only been mentioned infrequently in the literature in this field refers to the lack of or poor collaboration between key stakeholders of the built environment when they are involved in the same projects. This may be since earlier studies would have associated this cause to the generalised corruption as the objection to compete is due to the individual stakeholders seeking to make use of their position to gain undue advantages and flout the system. The review of the practices observed in building sites show that engineers and architects who are meant to work collaboratively for the project delivery often look at each other as opponent. Many participants attribute this to the leadership fight, but most participants justify such conduct by the corruption and greed approach as collaborating may mean sharing the proceed of corruption together.

The third barrier which was not often mentioned in earlier research was the lack of professional integrity which can on various perspective be also associated to the corruption phenomenon, which was by far with the lack of awareness of building laws and regulations by all category of stakeholders identified as the most significant causes of the poor implementation observed.

It was also striking to notice that participants repetitively identified the authority's permissiveness as catalyst of the non-implementation of building policies in the country. Despite the international agenda on implementing innovative building policies for the fight against global warming and energy shortage, authorities of the developing countries still seem to be unphased by the pressing agenda. This institutional inertia links well with the main causes (corruption and ignorance of laws and regulations by all category of stakeholders) and is corroborated by other identified causes such as poor and inexistent processes as well as with the administrative bottlenecks.

Overall the barriers identified can be interpreted in two ways. Firstly, the barriers recorded as external to the policies suggest that all category of stakeholders including staff of the local authorities who are supposed to be the implementers in chief are ignorant of the building policies. In fact, the low level of education in the country coupled with the lack of proactivity by the central government have adversely affected the general population's ability to appreciate the primary aim of the building policies so as to be able to effectively assess its benefit not only to them but also to the country's

general welfare. The lack of education and the lack of planning and the failure to set clearer and traceable processes reinforce the chaos and simply render the possibility of effectively implementing the existing policies too remote and unrealistic. With respect to the causes identified as internal to the policies, it is observed that the way building policies are developed and adopted lack a scientific approach. Various participants of the study complained countless times about the fact that policies were merely a replica of those adopted in western and advanced countries and therefore did not reflect the local context. This easily explains the cultural difficulties facing the general public and building professionals in general. For instance, the system is made as if there were trained building controllers and as if there were budget facilities to facilitate the implementation of the conceived policies, however in reality the case is different and as such it is simply unrealistic to expect effective implementation. That link well with the other causes internal to the policies such as unclear and uncoordinated building policies. for instance, an analysis of the policies betrays a lack of seriousness at the conception level as without a central coordinating authority it will simply be impossible to ensure that the policies are implemented by the various intervening ministries (health, urban planning, Land management, interior ministry).

Whilst using a display of the current practices on building sites in the country, participant contributed significantly to a better understanding of the causes of poor or non-implementation of building policies, their invitation to discuss the best strategies in tackling the identified barriers did not yield any strong views beyond generic proposals such as educating the stakeholders and reinforce the fight against corruption. Even so it is remarked that the range of solutions proposed by participants of the studies in all three set of data collected remained highly consistent. Many of the suggestions made were similar to those previously identified within the literature (Thorne et al 2005; Ametepey and Ansah 2015). In that respect 100% of participants of the interview and focus group discussions individually suggested that a proper strategy should be put in place to raise awareness as to building policies, to educate the general population and suggested that effective implementation of building policies may not be achievable unless this pre-requisite is attained. Discussions often led to the proposition of specific strategies to different category of stakeholders such as the mass media education, radio and tv programs for the general public, modernisation of the educational program and institution of a specialised training school for building planners and controllers for

professionals, and regular policy assessment by the central authority using mechanisms that include all stakeholders. Above all participants insisted that any successful strategy must go hand to in hand with transparent processes and deep cultural change. The experience of the approach used in England and Wales as highlighted in the in-depth interviews can serve as lesson in planning solutions ahead.

- **Recommendations**

Overall data gathered from the group discussions during the field activities shed deeper light into the findings of the earlier interviews that the level of compliance with existing building laws and regulations is extremely low and faults are largely attributed not only to the ignorance and 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 grouping the various laws and regulations within a single document such as a building code the building sector could be coordinated and by placing such document under the guardianship of a single authority 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 crucial and this training proposal that there be a creation of a completely new profession specifically for the building controllers and building planner as the lack of such specialist practitioners makes the building inspection/control inexistent, poor and sustains fraud and corrupt practices. Also, 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 process 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. The first step may be through the establishment of uniform processes and practices to curtail the extensive corruption and malpractice. Lastly, the attitude of professionals on building sites must improve and the government should develop a strategy aiming at keeping their professional and integrity standards at a high level at all time. That can be done through dedicated continued development program during which an emphasis must be placed on collaborative working on a building site as well as on ethics. The approach may be successful if there are adequate civil, pecuniary and penal sanctions against professional caught in dishonesty and other malpractices.

6.5 Chapter Conclusions

The review of the implementation of building laws and regulations in Cameroon indicate that the government policy on building construction is blurred at best and incoherent in any event and that the existing regulations are simply not effectively implemented. A plethora of causes are identified and corroborate the conclusions from earlier studies carried out in other developing countries that corruption and inexistent or poor processes are the bedrock of ineffective implementation of existing building regulations (Dahiru et al (2012); Berrisford S (2010); Kimani & Musungu (2010)). Even with the best policies and regulations it is clear that unless an adequate strategy is adopted the number of proposed solutions will not produce any relevant result and efforts to implementation policies and regulations will continue to fail. The study has further revealed that practices on the grounds are not uniform and stakeholders proceed as they see fit regardless of the statutes as far as each of them is concerned. That disorder goes unpunished as the enforcement mechanism simply does not exist and when it is provided cannot be implemented. It is therefore submitted that an implementation tool that integrates the various building stages, processes and stakeholders could enhance the implementation rate and standardize the practices on the field thereby setting a coherent and uniform path for all stakeholders. Overall, the analysis of the data collected in the various form reveal that lack of process and coordination at various levels as well as lack of accountability are significant factors in the poor implementation of building policies in the country. From the qualitative and quantitative data uncovered, it transpired that there are specific gaps and challenges in the following five main areas:

a) Governance: poor administrative setting; inadequate organizational, legal and policy frameworks;
b) System of work: Inexistent uniform plan of work and absence of a collaborative framework; Poor record keeping and non-adherence to processes
c) Monitoring/ Enforcement: Lack of building control activity, assessment, monitoring and enforcement;
d) Awareness: Lack of popularisation of laws and regulations; Poor knowledge and education;
e) Technical: Lack of expertise and human capacity;

Overall there is a need for a clear Process reference, which provides for a structured sequence of activities during the building construction cycle and which would include communication and feedback processes at the various stages along with a collaborative working approach by professionals.

CHAPTER 7: FRAMEWORK FOR EFFECTIVE IMPLEMENTATION OF BUILDING POLICES, LAWS AND REGULATIONS IN DEVELOPING COUNTRIES

7.0 Introduction

The research presented in Chapters 3-6 above has shown that there is a need to develop an implementation strategy to discipline the stakeholders in the building construction field in developing countries to boost the implementation rate of existing laws and regulations. An implementation instrument that could show what to do, who will do it, when it has to be done and suggestions as to how it should be done would drastically reduce the impact risks on the industry and help solve the problem of non-implementation of existing building policies and regulations. The challenge was to develop a framework that will be equally timely, relevant and fit for its purpose. The National Implementation Research Network (NIRN) reiterates the view shared by several other scholars that "implementing a well-constructed, well-defined, well-researched program can be expected to take 2 to 4 years (Bierman et al., 2002; Fixsen et Al, 2001; Panzano & Roth, 2006; Prochaska & DiClemente, 1982; Solberg, Hroscikoski, Sperl-Hillen, O'Conner, & Crabtree, 2004)." The framework is designed essentially for well-constructed policies and as such effort was made throughout the construction of the framework to ensure that the policymaker and implementers monitor the implementation process permanently and use their findings to evaluate and re-construct the policy where necessary for better outcome. Overall, this chapter presents and describes the Framework for Effective Implementation of Building Policies, laws and regulations (FEIBPLR) in developing countries, developed as direct result of the findings of this research and rooted within the existing scientific implementation theories and the RIBA Plan of Work. The chapter initially summarises the aim, objectives and benefits of the framework before referring to the theoretical approach taken in its development. It then ends with the full description of the features underpinning the framework.

- **Aim of the FEIBPLR**

As stated earlier in this thesis, the aim here was to provide a working instrument which can be adjusted to different situations by different stakeholders to help implementers

successfully deploy the building construction policies in practice and all stakeholders of the building construction industry to adhere to those policies and regulations. The framework acts as an instrument to help stakeholders about the steps and strategies needed to build sustainably in compliance with existing laws and regulations. For non-professional or inexperienced practitioners, it provides a transparent process to follow; for experienced building professionals, policymakers and local authorities it provides building construction considerations such as the good practice habits and describes dynamically complex working relationships and systems, as well as a uniformed approach which will help decision makers and implementers to input into and use the framework developed and to perpetuate its continued review. With that in mind the framework developed is designed to guide the stakeholders to work collaboratively at key stages of a building project and inspire implementers and policymakers in the way they facilitate and encourage the deployment of the indexed policies. By interacting in such manners stakeholders of the building construction would optimize their actions, improve confidence in the regulations and in each other, resulting in a greater adherence to existing laws and regulations and higher standards in the sector.

It is also considered that an efficient tool should ideally be capable of bringing the best out of a given building policy no matter how poor it is perceived and as one which can competently clarify or answer the following questions and take the answers into the implementation strategy:

- ❖ Whether those who need to act to achieve the expected outcome at all stages do what is required from them;
- ❖ Whether the actual preferences, behaviours and experiences of the various categories of stakeholders have been taken into consideration;
- ❖ Whether all the people/organisations involved in delivery have been identified and most importantly to establish the links between the various stakeholders.

- **Objectives of the FEIBPLR**

The main objective of this framework is to provide guidance on how best to adhere to existing building laws and regulations by setting processes that would prompt all stakeholders of the building construction field to work in a way that leads to effective implementation of building policies, laws and regulations. That is achieved through this instrument that:

- ❖ Establishes an effective collaborative framework between key stakeholders;
- ❖ Encourages key stakeholders, both individually and collectively to develop practices and strategies that will achieve effective adherence to building regulations, co-ordination and planning in the delivery of their respective responsibilities in a building project cycle;
- ❖ Establishes an effective management framework and help clarify roles and responsibilities from the project conception till the post construction phase;
- ❖ Provides guidance on services and contractual arrangements to assist in achieving best practice of the building construction
- ❖ Encourages practices that would lead to the construction of safer and sustainable buildings.
- ❖ Encourages working methods and focus that would adhere to the government building and sustainability policies.
- ❖ Establishes a pathway towards a compliance regime that enhances awareness raising, training and development of key staff and that monitors and evaluates the progress measures.

- **Intended Benefits of the FEIBPLR**

A successful instrument would contribute in guiding future development and implementation of building laws and regulations with reference to the most salient individual contextual factors and thereby improve the likelihood of a better outcome. Key potential benefits of this framework and what pitfalls these aim to avoid, based upon a review of theories surrounding the development of frameworks and the results of the qualitative research with stakeholders, are shown within Table 18 below.

Potential Benefits	Pitfalls to avoid
Guide the entire construction process with emphasis on regulatory compliance	Intervene in the whole building construction cycle rather than in some parts only
Standardize administrative and make technical processes transparent in regulatory compliance	Favor corrupt practices Give too much discretion to local authorities and inspectors
Encourage the establishment of communication and information exchange strategies between key stakeholders of the building construction field.	Overburdening individual stakeholders Request input Delay in project delivery
To keep implementers at task with planned inspections and building controls	Corruption Make inspections voluntary Blurred penalty regime
Improve the flexibility to match home owners' needs and the global sustainable policy	Impose a sustainable agenda on home owner;
Enable government to achieve their building policy goals with much fidelity	Exclude some stakeholders on decision making process; Facilitate corrupt practices
Popularize building constructions laws, regulations and processes.	Ignore contextual factors Keep regulations in statutory books only
Motivate stakeholders to act compliantly	Act oppressively Leniency in case of breach High administrative costs and lengthy processes

Table 18: Summary of benefits of the framework and pitfalls to avoid

7.1 Theoretical approach for the proposed tool development

This section initially presents the distinction between theories, models and framework and provide a justification as to why the development of an integrated framework as

implementation instrument rather than the other instruments in this research was adopted (7.1.1), before presenting the methodology adopted in the development of the framework (7.1.3).

7.1.1 The form of the proposed implementation tool

In order to develop an appropriate and relevant instrument, it was appropriate to distinguish between theories, models and frameworks within the implementation science. It was thought that doing so would guide us in selecting and applying the most relevant theoretical recommendations with the hope of yielding a greater implementation rate using the developed instrument.

Nilsen (2015) suggests that the choice of the relevant tool is capital for the success of any implementation. He insists that "while there is overlap between some of the theories, models and frameworks, awareness of the differences is important to facilitate the selection of relevant approaches". He then goes on to clarify the distinction between the theories, framework and models which are all perceived as relevant tool for effective implementation of policies. In that exercise he draws from his comparative study on the topic to submit that a theory is a set of analytical principles or statements designed to structure actual observations, subjective understanding and explanation of phenomenon. He summarises his intervention by placing an emphasis on the important feature of a theory which is to operate by defining variables initially and then draw predictions from the nature of relation between the different variables. In conclusion, Nielsen (2015) clarifies that a theory would be considered as relevant where it plainly explains how and why given relationships lead to specific events. It therefore transpires that a theory as working instrument will be suitable where the aim is to explain a phenomenon. On this basis developing a theory would have been the best option for us in this research if from the data gathered clear variables could be identified so as to construct the exact nature of relationships between them and draw predictable conclusion from those relationships. This would have required a longer period of study and different conditions to develop a sound, convincing and reliable theory and the overall aim would have been focused on explaining the finding. On that basis we took the view that developing a theory from the data gathered would not be the best approach

to resolve our research questions and to enhance the implementation rate of building laws and regulations in developing countries.

Nielsen (2015) also looked at models and concluded they are identified by a conscious and deliberate simplification of phenomenon to render them more accessible to the common users. In general, it is considered that a model will be more relevant where the aim is to go beyond the mere definition of a phenomenon to provide a local understanding of that phenomenon. In practice it is difficult at times to establish a difference between model and theory but the material distinction resides in that "a model is descriptive, whereas a theory is explanatory as well as descriptive" (Nielsen 2015). Given the close proximity between the two instruments and for the reasons indicated above we concluded that whilst developing a model would go a long way to set grounds for better implementation of building laws and regulations in the intended jurisdiction by helping to understand why policies were not currently observed or adhered to, it would not be the best option available to have an immediate and timely impact as sought from the research questions.

The third tool examined by Nilsen (2005) in his research was the framework. He observes that the main feature of a framework is that it can be a structure, an overview or a plan "consisting of various descriptive categories, e.g. concepts, constructs or variables, and the relations between them that are presumed to account for a phenomenon". Under these lenses, a framework is more comprehensive, and its strength appears to come from the fact that it only describes hard evidence and does not entertain speculations and empty explanations. The framework goes beyond mere description or speculation (theory) to provide a contextual explanation of the identified phenomenon and bear in mind various other surrounding factors in its development. On these findings it transpires that a framework would be better suited where phenomena are observed and classified into different groups. Given that the overarching aims of the use of theories, models and frameworks in implementation are to describe and/or guide "the process of translating research into practice", understand what influences implementation outcomes and evaluate the whole implementation process or develop "theoretical approaches which aim at understanding and/or explaining influences on implementation outcomes, we concluded that developing a framework would be more relevant and better contribute to solving the research questions of our study. That decision is made on the basis that a framework would integrate broader contextual

elements such as political, financial, administrative and socio-economic issues as well as motivation, lobbying, and technical, professional and administrative support.

7.1.2 Methodology adopted for the framework development

The methodology adopted for the development of the framework was inspired on the principles of "Applied Construction Research" as detailed in Holt (1998; p12) with specific reference to the stages leading to the developed framework. In the application of that methodology specific ingredients drawn from the literature reviews were also selected and integrated within the framework conception. Those selected ingredients specifically came from secondary theoretical strategies namely the Fixsen's implementation framework presented within the literature review section of this thesis in Chapter two, the RIBA Plan of work process document and the Contextual Interaction theory (CIT) detailed below.

7.1.2.1 The Applied Construction Research Principle

The applied construction research instrument was used as skeleton for the overall development process of the framework as it provides coherent strategic path for the development of an instrument in the magnitude of the one we are aiming for. This method was chosen because it is recommended for processes aiming at finding solution to specific problems such as the one posed in our research. It was considered that adhering to the steps recommended by Holt (1998) would certainly lead to a relevant tool and would enable us to develop a sound and efficient framework. The principle operates on the basis that the current system of work is inexistent or imperfect and would require specific actions to be improved. In order to avoid the bias of developing a process that is not fit for purposes, several steps were follows as precautions to reach a scientific improvement of the current process. Those steps are illustrated in Figure 30 below and require the tool developer to 1) start by identifying the current practice (evidence-based findings), i.e. what is the norm as currently applied on the ground and then 2) analyse and understand how the norm operate to identify the scope for improvement. Once the potential for improvement has been identified, 3) analyse the best way to use the current knowledge whether theoretically, practically or from existing research to develop an improved way of doing things. 4) The new instrument so developed can then be put through a sound validation mechanism in order to assess its soundness and evaluate the extent of improvement and the workability of the

instrument. At this stage it is recommended that feedbacks generated from the validation method used be referred to and analysed to adjust and where necessary sharpen the proposed instrument before its publication. 5) once satisfied of the value of the proposed instrument it can now be put at use. Those steps are show by holt (1998) as illustrated within Figure 30 below:

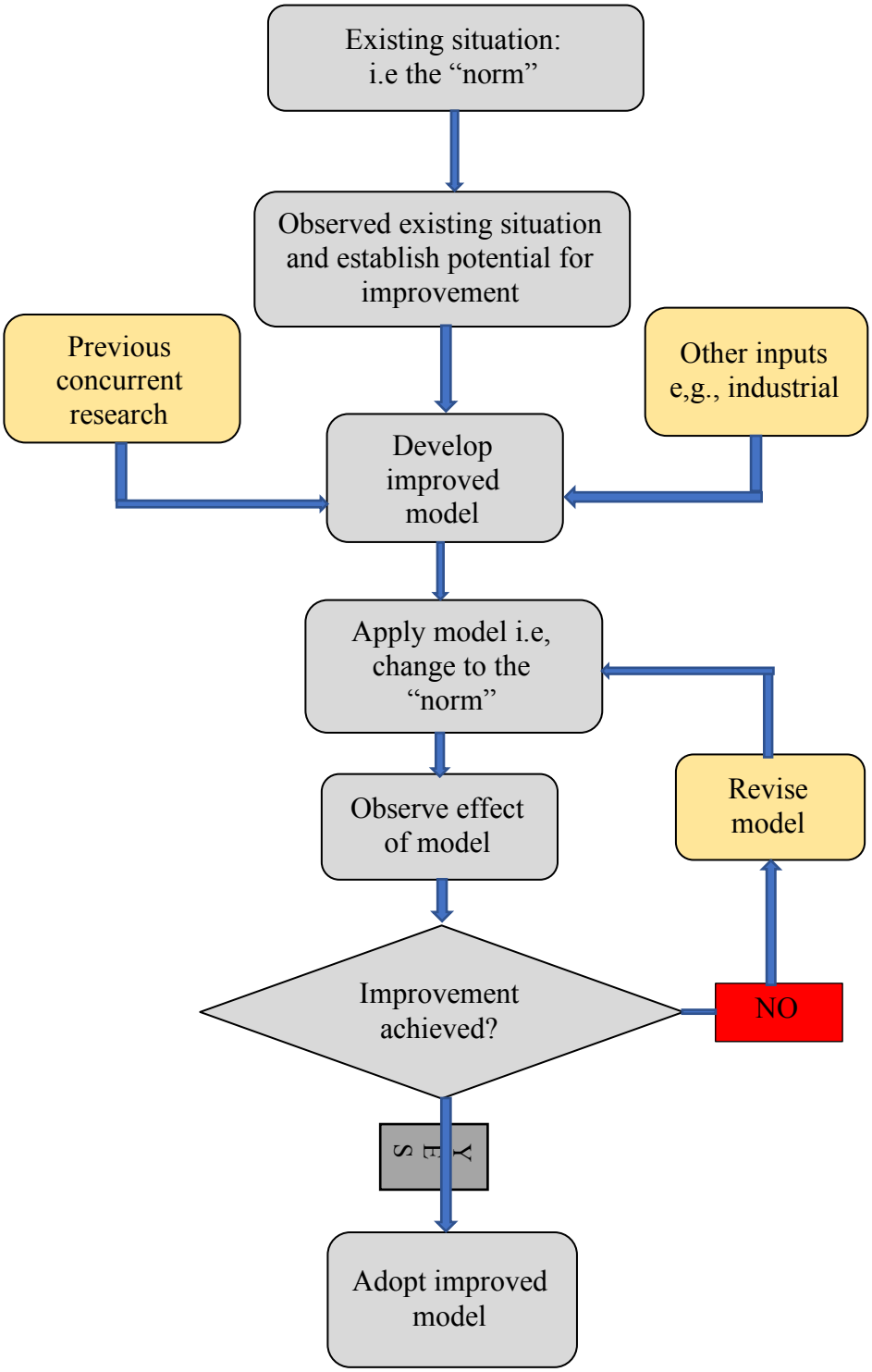

Figure 30: Process in Applied Construction Research (Source: Holt, 1998; P12

7.1.2.2 The RIBA Plan of Work 2013

The RIBA plan of work is a reference document developed and which describes a logical sequence of steps that should be taken by all those involved in the briefing, design, construction and post-occupancy process of buildings to ensure greater cohesion within the construction industry through adequate and timely decision on construction projects management and delivery. The document distinguishes 8 crucial stages (2013 version) and 8 major lines of tasks that must be followed by stakeholders on all building sites to enhance efficiency in the project delivery. The eight stages are designed in a way that covers task undertaken by various categories of stakeholders throughout the building process starting from the project initiation phase to the building occupancy. The eight stages are:

Stage 0: aiming at appraising and providing a strategic definition of the building project before the full project plan is created. This stage which did not exist in previous editions has the main aim of ensuring that sustainability and other innovative issues are thought and considered at the earliest stage of the project.

Stage 1: sets out the window for preparation and full brief of the project

Stage 2: the concept design of the building is fully considered at this stage and the full costs and strategies to deliver the adopted design concept is also planned at this junction.

Stage 3: this stage sets out the ground to implement the concept design adopted at stage 2. Greater coordination is needed at this stage to align the design and the cost information so the whole project can remain realistic and under control.

Stage 4: the technical design stage reflects the thorough requirement placed upon the design team for the project and at this phase, the technicians consider the various queries raised about the design conceived and finalises the design having included the structural, architectural and building services requirements in line with the overall strategies knowing that sub-contractors may be involved in the implementation.

Stage 5: This is the construction stage and covers the effective completion of the physical building. It refers to the manufacturing of building material and actual onsite constructions. At this stage the various mobilized teams including sub-contractors are deployed.

Stage 6: entitled handover and close out always allows for the project administrators to effectively and orderly review the project's handover and plan its successful delivery at the end and to keep an adequate strategy in hand.

Stage 7: entitled "in use" this stage aims at ensuring that an effective strategy has been adopted and implemented throughout the project delivery for the post occupancy evaluation and future development/improvement.

Overall the RIBA Plan of Work sets each work stage with clear boundaries, and details the tasks and outputs required at each stage to cover each of the 8 stages. The 8 tasks lines are summarised as follows:

Core Objectives: this bar sets the main objectives and principal activities for each of the 8 stages shown above. It is crucial for the guidance aim of the Plan.

Procurement: The nature of the specific activities required at each stage for procurements and tenders will depend on the procurement route selected.an important feature of the tasks is the activities related to the inspection of building sites as well as the administration of contracts as employers or as main contractor with specific reference to assembling the project team.

Programme: Under this task bar adjustments are made to enable an overlap of stages where clients' needs or demands which may not be implemented through the usual sequential implementation of the stages of the RIBA Plan. This task bar requires an effective collaborative framework amongst all stakeholders to keep the delivery on schedule and to satisfy the projects owners.

Planning: This task bar describes the activities of relevant stakeholders at each stage to ensure that the planning permission which is a salient feature of any successful building construction is sought and obtained. The extent of the activities needed from different stakeholders will depend on the stage at which the town planning application is required to be made.

Suggested Key support tasks: This bar clarifies the activities needed to meet the sustainability aims of the building and sets out tasks that will enable the project delivery to be n line with the statutory requirements. It also aims at ensuring that the project team is diligently assembled with consideration to health and safety and other legal requirements. Activities set all have a great deal of collaboration in the delivery process.

Sustainability checkpoints: This bar does not come automatically for all projects and it is up to the project owner to activate it or not and that will depend upon the

sustainability needs of the project owners or the legal or statutory imperatives. Where it is applicable the activities needed will be in line with the checkpoints included the 2011 Green Overlay to the RIBA Outline plan of work 2007 downloaded from the Royal Institute of British Architects website and appended to this thesis as **Appendix 8.**

Information exchange: This task bar gives directions as to the information that will be communicated at the information exchange at the end of each stage. Emphasis is placed on the agreement as to the content of the information to be delivered as well as the task of each key stakeholders in delivering the information. The salient point of this task is collaboration between stakeholders and effective communication.

Government Information exchange: This task bar reflects the UK government strategy on building construction matters and indicate which information should be communicated to the government by the project manager at each stage.

The RIBA Plan of work, a copy of which is appended to this thesis as **appendix 9** is a working instrument followed by building practitioners in the delivery of their projects in the construction field and with it, buildings are constructed safer and clear guidance is given to prompt and trigger excellent project conception and delivery whilst complying with the regulations and building policies.

It is worthy of a note to document that whilst the RIBA Plan of work is the most used framework followed for building constructions as it guides building stakeholders in delivering their projects in concerted manner, it only deals with the dynamic of the project itself, and whilst it bears in mind the regulations it does not specifically deal with the effective implementation of the existing regulations. It operates on the assumption that all stakeholders already abide by the regulations and aims. The gap is therefore where regulations are ignored or poorly adhered to the whole Plan of work can collapse. It is was therefore important for us to use the building construction phases identified in the model to develop a strategy which could ensure effective implementation of building regulations whilst deploying the plan of work.

7.1.2.3 The Contextual Interaction Theory (CIT)

The particulars of the CIT were fully described in section 2.3.2 of this thesis above. As indicated, the main feature of the CIT is the ability to raise the collective moral and to get people working together from the central government through to the local

implementers and simple enforcers on the ground within a specific environment. That is typically achieved through education, training, mutual open and frank discussions as well as the improvement of the social environment for the general public's benefit without disregarding the existing empirical factors. That can only be achieved where there is enough trust between the stakeholders to entrust the central administration with a discretionary power knowing that they will account honestly to the people. Whilst that trust is held firmly, it operates both ways as the central government also holds such trust in the local implementers that they are granted real and effective powers to dictate the deployment of the policy on the ground. Where appropriately implemented the CIT leans on its three pillars as illustrated in Figure 7 in chapter 2 above to guarantee a successful outcome. Those pillars are: (a) Stakeholders' motivation, (b) Education/ information of stakeholders and (c) real power of implementers.

7.2 Framework Development process

The Oxford English dictionary defines process as "series of actions or steps taken in order to achieve a particular end". As mentioned above, the process of developing the framework was done following the skeleton proposed by Holt (1998) and shown in Figure 30 above.

The finding drawn from the data presented in chapters 3-6, including current practice within the building construction industry like the RIBA Outline Plan of Work 2013, Building Information Modeling (BIM) as well as theories stemming from earlier researches or publications made by scholars on implementation such as the CIT and the Fixsen model and other secondary data provided the foundation for developing the Framework for Effective Implementation of Building Policies, Laws and Regulations (FEIBPLR).

The development began with a process evaluation of the Cameroon building laws and regulations and their implementation. That exercise consisted of documenting how they were made, how they operate in practice and to describe the process that may explain the observed outcomes which the initial hypothesis was (that existing laws and Regulations are not effectively implemented).

Particular attention was given to contextual factors that could influence the outcome (level of education of the general population, cultural factors, budget constraints, corruption). In general, contextual factors were determined as all elements at the micro level that might have an impact on the implementation of existing regulations for the construction of compliant buildings. Those factors can be found at personal level, such as individual's perception of the aim of a building, perceived quality of building by professionals, the level of organization of the staff of the local administration and their perception of their role as well as the interactions between all stakeholders.

The above factors were classified based on the extensive literature on policy implementation (Hogwood and Gunn 1984; Makinde Taiwo 2005; Fixsen et al. 2005; Durlak & Dupre 2008) and in doing so four main factors that have a potential impact on effective implementation of the building laws and regulations in Cameroon were identified:

a) socio-cultural factors (resistance to change, corruption, inadequate support from the government, lack of political will; abuse of power and maintaining of the status quo)

b) **Strategic planning and delivery** (lack of awareness as to the regulations by all stakeholders, lack of control; unclear policy goals, lack of coordination of the central authority's action, lack of incentive),

c) **economic accessibility** (reduced capacity to cope with administrative costs associated with building project; poverty; cost of building material, budget constraints),

d) **Technical deficiencies** (insufficient qualitative and quantitative human resources; poor or non-existent processes; lack of training).

These four factors served as focus points in our data analysis as we used the grounded theory approach to analyse the interviews and the thematic method to analyse data collected from the focus group discussions. Throughout the analysis phase we proceeded from our philosophical positioning (realism) to use both inductive and deductive approaches to identify and classify factors which could be considered as drivers of a framework which could adjust or correct the inadequacies noted as triggering the poor implementation. Overall, as stated in the data analysis section of this

thesis, the study mainly revealed that existing building laws and regulations were not adequately/effectively implemented due to a plethora of causes and that there was a need for an implementation framework to trigger an improvement. Practically, the framework process was developed so as to produce a mirror effect of the skeleton proposed by Holt (1998) (figure 30 above).

It was considered that the existing situation in building constructions would be the entire building policy, building laws and building regulations of the jurisdiction in consideration. For the purpose of this study, the case study jurisdiction was Cameroon and therefore the existing situation was represented by the current building policies, laws and regulations as presented in Chapter three above and included the Urbanism code 2004 (Law No 2004/003) and its implementation decrees. In addition, the national standards on building constructions set by ANOR were considered relevant in addition to the unreferenced ISO for areas not yet considered by the ANOR. Given the uncoordinated and scattered nature of the statutory and regulatory instruments affecting building constructions in the country it was impossible to properly identify the full plethora of other laws and regulations such as those related to the environment, to energy use and to health and safety.

It was also considered that although several processes exist in the building construction field, the commonly and straightforward process was the RIBA Plan of work developed by the UK and observed in most countries. The process is simple and efficient and as such we adopted 5 implementation phases which would encompass the eight phases of the RIBA plan in their dynamic. The difference is due to the fact that an implementation instrument is different from an execution instrument such as the RIBA Plan of Work giving their initial aims. The five implementation stages (phases) retained in our framework development were: (1) the project initiation and pre-design phase, (2) the design phase; (3) the planning phase; (4) the construction phase and (5) the occupancy and operations phase. This distinction was made with the timing of impact of relevant building laws and regulations in general in mind as they are applicable at distinct stages. We considered that adhering to this breakdown in the framework development would reflect what is already done in practice on the ground whether consciously or not. In our case study it was obvious that the regulations distinguished between those five stages and specific requirements were set for each stage.

Drawing from the analysis of the extensive data gathered during the investigation process and presented in chapters five and six above, gaps were identified in the way building regulations and policies were implemented in practice and the scope of their improvement assessed. The said assessment formed the basis for the development of the framework which we believe would contribute in improving the implementation rate by plugging the gaps identified and suggesting innovative ways of dealing with the issues.

In the development process care was also taken to follow the theoretical recommendations made in the CIT as shown above and by Fixsen et Al (2005) as highlighted in Chapter two above. Drawing from the literature positioning of these two approaches to hit effective implementation of policies, we considered the context (developing countries) and drew from the data collected to select a mixture of drivers deriving from both the CIT and the recommendations of Fixsen et Al (ibid) to adopt 6 drivers identified as capable of enhancing the implementation rate in the building construction field of the targeted audience. Those drivers are classified under the following banners: Organisational, Leadership, Competency, Collaboration, Communication and motivation. Analysis of the data gathered suggested that a framework constructed with this cocktail of drivers handpicked from the research work of Fixsen et al and from the CIT with emphasis on local context would significantly transform the building construction field in developing countries if efficiently observed. Steps were taken to identify tasks that would need to be executed in addition or alongside those prescribed within the RIBA Plan of work as well as processes that should be followed to ensure that those drivers are activated aptly in the implementation process so as to yield the desired outcome. To better understand the function of the adopted drivers in the framework we present them individually as follows:

Competency Drivers: these are the inspiration behind the set of tasks directly related to the recruitment, training and coaching of stakeholders who will be intervening in the building project at various phases. It is submitted that a framework with focus on the timely recruitment of skilled and knowledgeable staff as well as good training prior to the start and throughout the project life will make them more competent and thereby trigger confidence in each other as well as the trust of the project owner and of the

general public. The same applies to the coaching part, particularly as the newly recruited and probably under skilled staff would need support to mature and acquire the necessary technical knowledge to be comfortable in the change of behavior. Training/ coaching and good working environment are facilitator of behavior change and as such the training part of this driver is intended to progressively impact upon the stakeholders and provoke the sought-after behavior change. With such approach it is submitted that building laws and regulations would be better implemented. The focus placed on these drivers in the delivery of the key activities as suggested in the framework associated with the other strategies and drivers adopted will ineluctably lead to an enhanced implementation rate.

Organisational drivers: Fixsen et Al include as constituents of this group of drivers the facilitative administration, the system intervention and the decision support data system. They are presented in the form of activities or difficulties encountered at each stage of the implementation process of the identified policy. with specific focus on facilitative administration the data gathered revealed that the administration did not show enough attention as to whether building laws and policies were actually observed on the ground. It was therefore considered that a tool that integrate ingredients capable of bringing greater scrutiny to existing laws and regulations and procedures would participate in enhancing the implementation rate on the ground. Most compliance instruments now open information on risks, stakeholders' qualification, private third party's vetting, and open processes on inspection and controls of building sites. The literature review and the subjective opinions voiced during the interviews and group discussions suggest that compliance and efficiency in planning regulations and building constructions can be achieved by promoting greater transparency. This can be implemented through dedicated tasks or activities by efficiently adopting strategies that can reduce excessive discretion in planning and building permit approvals and establishing a system of disclosure of information on how technical and other criteria have been met. We considered that a strategy that renders the administration proactive and triggers actions from them which could focus on the intended goal to reshape and lead organizational change at each stage would be one appropriate to bear in mind in the framework development.

Leadership Drivers: Reflecting on the outcome of the data analysis presented in Chapter 7 above, it became crucial that the drivers identified by Fixsen et al under this title be integrated in the development of the framework. Indeed, the evidence revealed that there was a consensus amongst all stakeholders on the nature of the challenge facing the industry as well as the proposed solutions for effective implementation of building policies in the jurisdiction. In that respect, it was crucial to ensure that the relevant stakeholders involved in the delivery have an actual incentive to deliver. In this perspective, it was worth keeping in mind that the data analysis exposed an embarrassing lack of expertise and ignorance at all level and it is submitted that this situation necessitates the need for a top-down approach to raise awareness amongst the stakeholders involved in the house building process as well for the purpose of having an adequate leadership in the implementation mission. Because the research also revealed that there were inadequate or insufficient technical and practical skills in the current system to effectively see through the implementation of existing regulations, we take the view that including ingredients that could immediately adjust/ plug the gap through leadership could strengthen the chances of successfully implementing the existing policies. When invited to make suggestions, all category of stakeholders put forward a range of proposed strategies which are either similar or complement each other for the improvement of the decried situation. It was therefore considered that the technical leadership as oppose to adaptive leadership as described by Fixsen et Al should be integrated within the framework to place an emphasis upon the project manager as the single point of accountability. We took the view that if all stakeholders on a building site were fully aware of the point of accountability and clear process as to how to report events and actions from the site the chances of reaching a higher implementation rate would be greater. That single authority should therefore establish clear procedures and processes from the early planning stage and ensure that these are followed in practice at all stages.

Collaboration Drivers: The data collected revealed that there was a systemic lack of collaboration between stakeholders of the building made worst by the poor communication between different branches of the central and local authorities. Research participants agreed in a concerted manner that this lack constituted a serious barrier to achieving the national building policies goal. Bearing in mind the finding we considered that an efficient framework should include a strategy that can enhance

collaboration and thereby reduces the risk of failure. A review of building laws and regulations of Cameroon and England respectively and the data gathered from the interviews conducted in the United Kingdom suggested that the success rate observed in the implementation of the latter's implementation mission as opposed to the failure of the former's implementation task was rooted within the level of cooperation existing in their respective system. A building project involves complex issues and stakeholders are all inter-dependent. On that basis it is self-obvious that a better collaborative framework the project delivery would lead to a better outcome. In the development of the framework all of the above was born in mind with greater consciousness of the ISO44001which sets out the framework for successful collaboration in the delivery of complex projects. In that perspective consideration was given to the 8 stages of effective collaboration as set by ISO44001, namely (1) the Strategic awareness of the areas and associated benefits of collaboration and its conformity to the aims of existing laws and regulations; (2) Strategic knowledge of the risks of strategic collaboration and the pre-conditions for successful implementation; (3) an effective assessment of the organisation's capacity and ability to collaborate adequately, particularly in a context where stakeholders are ignorant of the laws and regulations in the first place; (4) A structured process for stakeholders and colleagues' selection; (5) A structured approach to define in simple terms how the collaboration should function and how the stakeholders should actually work together'; (6) A joint focus for innovation and the creation of mutual added value; (7) A clearly specified directives as to how the cooperation will be monitored and maintained during the project and after its delivery and (8) A proper contract setting out obligations and rights that must be abide by for the collaborative relationship to survive. This collaborative consideration will be more effective if it is considered and dealt with from the project conception phase and as such care was taken to include at all construction phases of the framework drivers that would enable the delivery of this aim. The added value of including this strategy as central part of the framework is to raise the collective moral and reinforce trust amongst all stakeholders ranging from the builders to the policymakers and implementers of building laws and regulations.

Motivation Drivers: existing research show that for any given policy to be effectively implemented, stakeholders must be motivated and as such we used the case study undertaken in this inquiry to establish the specifics things that can motivate

stakeholders of the building construction field to abide by the regulations and thereby cause a better and greater implementation of the national building policies and regulations. The study revealed that motivating factors were different from each category of stakeholders and ranging from incentives to adhere to existing policies to fear of severe penalties for breach of existing regulations amongst many others. In designing the framework care was taken to include specific tasks that would enable professionals to feel a sense of achievement during and at the end of their mission. For building owners, occupiers of building and public authorities, specific tasks aiming at reinforcing the consciousness and reassurance of safety features on building construction sites and in buildings were incorporated as analysis of focus group discussion identified this feature as one of the most important motivational drivers capable to provoke a better implementation and adherence to existing regulations. Effort was also made to create a shared vision through the introduction of tasks and processes aiming at improving the unfairness perception of the existing processes overwhelmed by corrupt practices as deplored by all categories of participants. In that respect effort was made to adopt activities and records accessible to all stakeholders on request which could be assessed, monitored and evaluated at all times.

All the above ingredients were put together in the framework development through a dynamic process summarised within the below mind map developed from the skeleton of the Applied Construction Research.

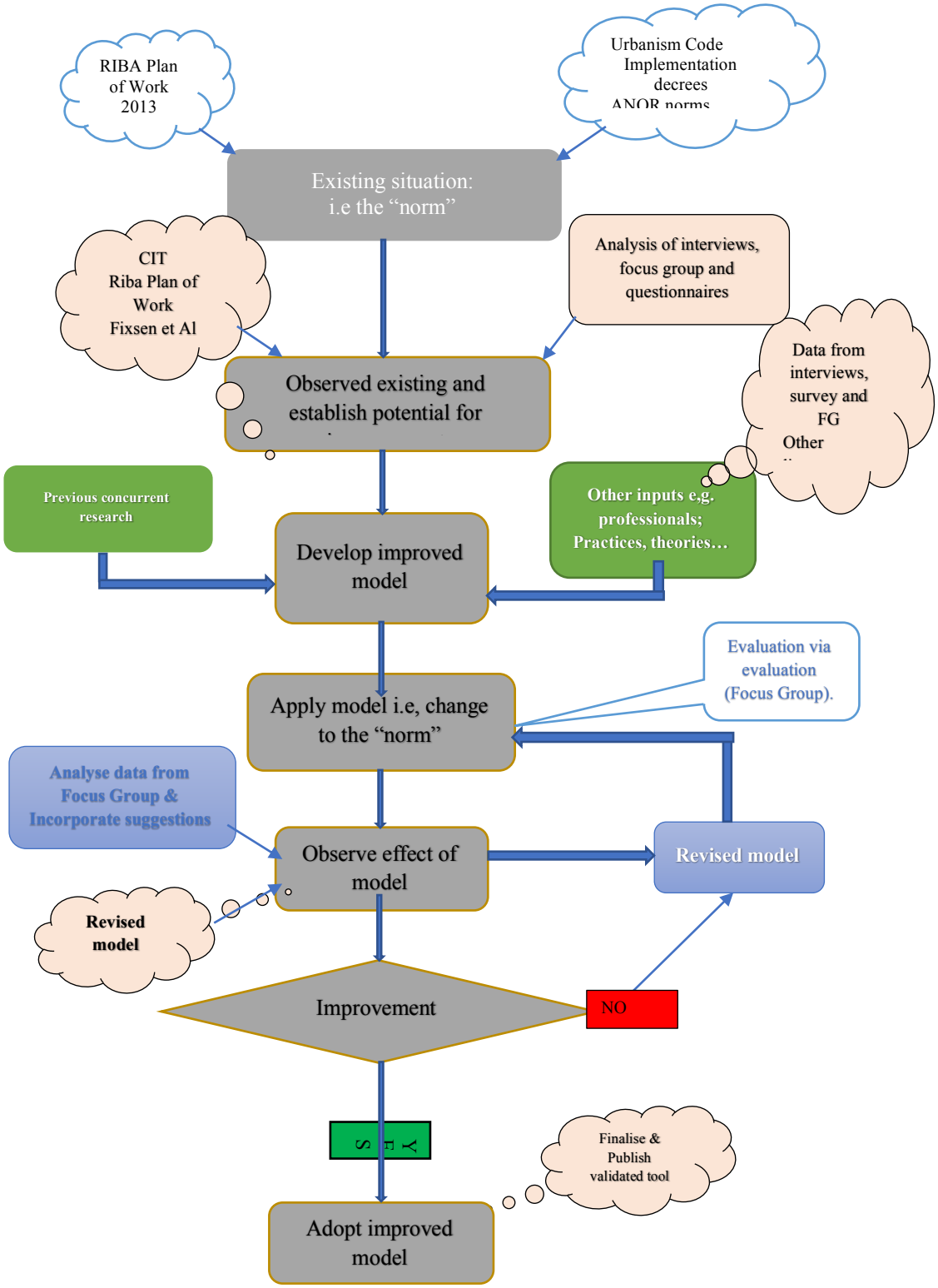

Figure 31: Illustration of activities planned and taken for the proposed framework development

7.3 Design and Description of the FEIBPLR

This section describes the integrated framework for Effective Implementation of Building Construction policies and Regulations, developed from the research presented within Chapters 2 to 6 above. Effort is made to provide justification for each aspect of the framework. The aim, objectives and advantages of the framework have already been presented in the preceding section. The design of the framework is presented within sub section 7.3.1 and the full description of the framework is presented within Section 7.3.2. It should be highlighted that the suggested processes within the framework are not prescriptive in nature but could be adapted by the project team so as to reflect the specific context, the technical, human and financial resources available and above all the cultural approach.

7.3.1 Design

The integrated framework draws from the existing process of initiating, designing, constructing operating and using building projects to identify or suggest tasks and activities which if followed can contribute in making stakeholders more compliant as long as building laws and regulations are concerned. The framework was designed to incorporate the 5 main phases of a building construction project. These are: (a) the project initiation and pre-design phase, (b) the design phase, (c) the planning phase, (d) the construction phase and (e) the post construction phase reflected by occupancy and operation. Leaning on the RIBA plan of Work 2013, the framework for effective implementation of building policies, laws and regulations works across the full range of sectors involved in a building construction projects and directs how to effectively deploy activities related to the full project management, actual building construction activities, procurement management and policymaking and implementation processes. The instrument identifies legally binding and other non-binding but recommended documents which should be kept in the suggested good practice form so as to increase the chances of achieving the government's implementation target on the building policies and regulations. This reference document also works on the central principle of suggesting how the stakeholder should approach the delivery of the agreed building contract taking a holistic view of the existing legal and policy requirements and focusing upon the relationship between key stakeholders in hitting the shared goal with much fidelity.

7.3.2 Description

Taking inspiration from the existing research and bridging from the secondary data and outcomes of this research we opted to develop a framework that is integrated in the RIBA Plan of Work 2013. Because effective implementation requires a substantial amount of legal and administrative tasks, the FEIBPLR identifies and sets out various documents which can be either compulsory or merely recommended by the policymakers and sets out activities that we propose to integrate at each of the building construction stages as mapped by the RIBA Plan of Work 2013 and which we believe will enhance the implementation of building policies laws and regulations during construction projects. In this exercise the framework specifically indicates the leadership level of intervention of each stakeholder by differentiating between which stakeholder initiates an activity and which party approves it. The document also includes a column in which the relevant drivers for each phase and activity are recorded. That column serves as a prompt for stakeholders, so they can remain focus on the overall objective and smoothly move into the desired change mode. The last column (Notes) is designed to provide basic guidance to stakeholders on what should be initiated to successfully enforce the proposed ideas and clarifies how success could be measured.

The FEIBPLR works on 5 operation phases which encapsulate the 7 phases of the RIBA Plan of Work as shown in the below table 19 mapping the integration achieved in the process. As can be noted from the table 19 below the FEIBPLR has integrated the planning part of the process which is merely a task in the RIBA 2013 Plan as a full stage into the existing RIBA Plan highlighted in red and identified as **stage 4a** within the table. It was crucial for us to set the planning section as a full stage because planning laws and regulations are central part of all government building policies. Because the aim of the FEIBPLR is to enable an effective implementation of building policies rather than mere project management it was crucial to give greater scrutiny to activities that take place at the planning stage as much of the successful implementation cannot be achieved without a special attention to this element which by its nature is the rock bed of all building laws and policies.

At this junction it has to be said for clarity' sake that the tasks identified or recommended and described within the FEIBPLR are purely designed with the policy in mind and do not alter the main activities described in the RIBA Plan of work for each

prescribed stage. In fact, it is suggested that they work hand in hand and our model simply lean against the RIBA Plan of work to further direct stakeholders of the building construction in developing countries to adhere to a methodical working process and thereby achieve higher standards and fidelity in the policy delivery. This is why the documents, activities and drivers described within the FEIBPLR aim at reaching the output of the RIBA Plan of work at Stages 1-2 through the activities described at the Project Initiation phase whereas the output of Stage 3-4 are reached through to the prescribed activities of the Design Phase and the output of Stage 5 better delivered through the clarified and added activities listed at the Construction phase of FEIBPLR and the same for output of stages 6-7 through the occupancy and Building Operation phase. Throughout the process, the tasks listed within the RIBA 2013 and the FEIBPLR work concurrently to achieve the same goal, the added value of the latter being an emphasis on compliance and fidelity in the delivery of the overall policy goal.

<table>
<tr><td rowspan="2">RIBA 2013</td><td>Stage 0</td><td>Stage 1</td><td>Stage 2</td><td>Stage 3</td><td>Stage 4</td><td>Stage 4a</td><td>Stage 5</td><td>Stage 6</td><td>Stage 7</td></tr>
<tr><td>Strategic Definition</td><td>Preparation & Brief</td><td>Concept Design</td><td>Developed Design</td><td>Technical Design</td><td></td><td>Construction</td><td>Handover & Close Out</td><td>In Use</td></tr>
<tr><td>Framework for Effective Implementation of building Policies, Laws and Regulations</td><td colspan="2">Project Initiation & Pre-Design Stage</td><td colspan="3">Design Phase</td><td>Planning Phase</td><td>Construction Phase</td><td colspan="2">Occupancy and Operation</td></tr>
<tr><td>Communication system / Information Exchange / Collaboration</td><td colspan="9">Through BIM or the recommended system</td></tr>
</table>

Table 19: Framework for Effective Implementation of Building Policies integrated to the RIBA 2013 Stages

The different components of the developed framework, namely the phases, the documents and the drivers are succinctly presented in the below sub-sections

7.3.2.1 FEIBPLR Phases

As explained above, the framework is designed to cover the seven stages of the RIBA Plan of work as it is already aligned with the standard construction phases approved internationally and endorsed by powerful organisations such as the British Construction Industry Council (CIC). The adopted phases aimed at providing step by step guide to stakeholders of the build environment and establish greater cohesion and collaboration amongst them knowing that this would lead to an effective delivery of the government building policies. The 5 phases work together to generate the final output as shown in the below diagram

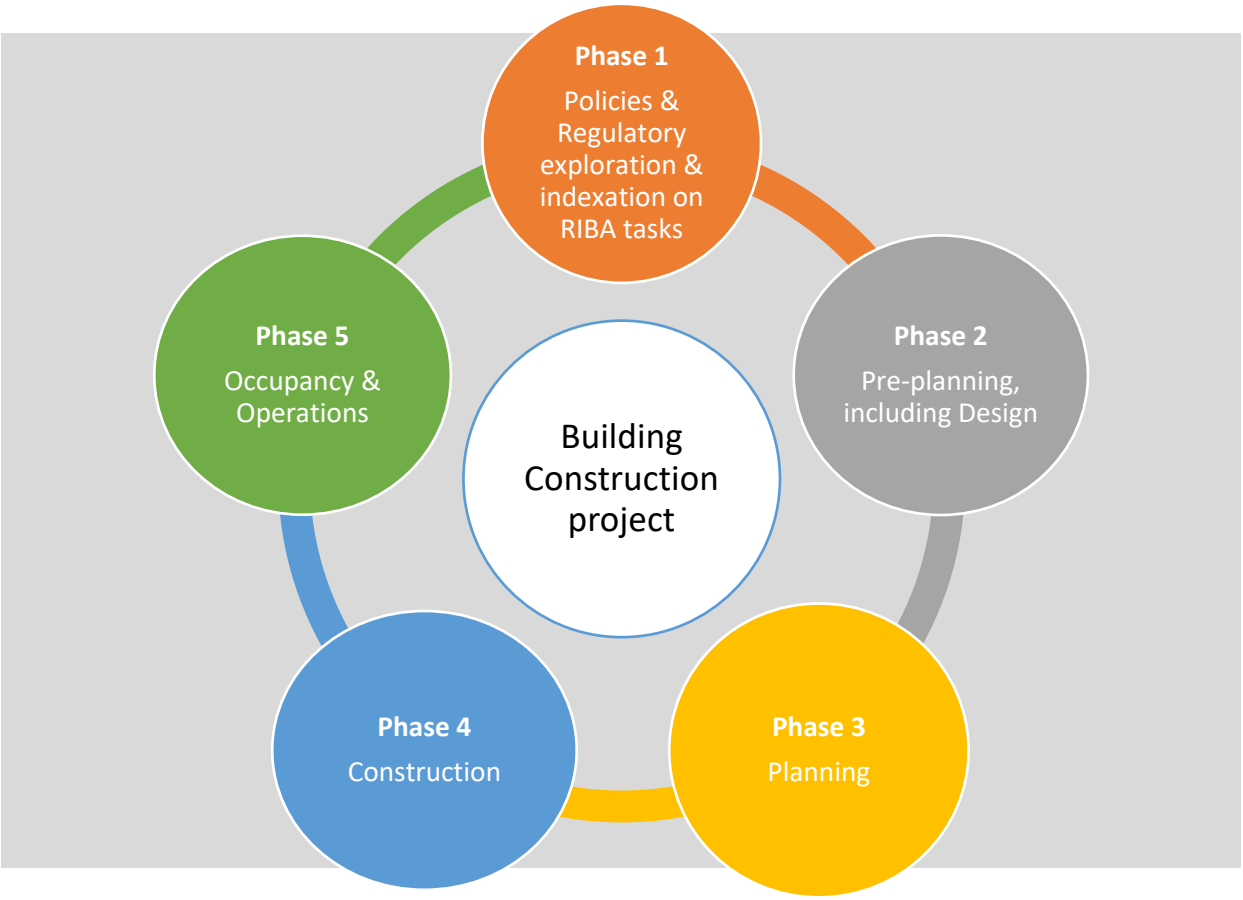

Figure 32: phases of the Framework for effective implementation of Building policies

a- Phase one (Exploration of Policies & regulatory requirement and Indexation on RIBA activities)

This stage covers the strategic planning and preparation of the whole project. The activities prescribed at this phase are intended to enable the project management team and the owner to efficiently appraise the project and to have in place a dynamic approach and automatic gestures that would keep the government policies and regulations in mind at all times, inspire confidence in empowering the confidence of the project owner to be compliant and remain so throughout the process. Activities prescribed at this stage also raise confidence in stakeholders as to their understanding of the project and reduce the scope of future strategic, technical or legal disputes. At this phase the briefs prepared are important as they form the foundation of the whole process. The documents created at this stage will for most found the basis of monitoring and appraisal of the strategy for regulatory compliance, hence from the outset the focus is placed upon the building commissioning as at the end of the project this activity will deliver the verdict as to whether the building has been constructed in compliance with policies, laws and regulations of the land. It is probably the most delicate phase of the whole process and requires a thorough collaborative and honest approach in the appraisal stance. Concerted efforts are dictated to all participants ranging from the local authorities to the building owners so that the ingredients of successful implementation are activated. The tasks prescribed seek to use the identified drivers to set the ground for full adherence and compliance to the building policies. successful implementation of existing policies and regulations will be greater and easily monitored if from the outset they have been identified and indexed to the various building activities listed in the RIBA plan of work.

b- Phase two: (Pre-planning, including Design Phase)

This phase leans against the tasks scheduled to take place at stages 2-4 of the RIBA plan of work and prescribes new activities which concurrently enhance the focus on the regulatory and implementation of the actual building policies. Whilst the RIBA 2013 focuses on the achievement of excellence on technical and procedural delivery of the construction project, activities prescribed at this phase of the framework target gestures and good practices which will lead to better delivery and fidelity with the policy or regulatory goals. Like with all other phases, bespoke documents are generated and maintained throughout the project's life so as to prompt all participants to remain

compliant and to engage with initiatives which would enhance the chances of effectively implementing the existing policies, laws and regulations whilst setting the basis for future policy development/improvement. The focus of this phase is on activities that would prompt the technical stakeholders to act in compliance with the legal specifications and local norms in the conception bearing in mind the overall country's building policies goal, notably with emphasis on sustainability. This is an important stage and requires the effective leadership of all stakeholders at their respective function for a successful output. This driver works on the assumption that by leading with example the technical staff and the management team would communicate the desire and motivation to all other stakeholders and inspire greater confidence not only in the building being constructed but also in the project owner and the general public.

c- Phase three: (Planning phase)

This phase along with the fourth phase of the framework are considered as the most important with respect to implementation of existing building policies and regulations. In most developing countries such as Cameroon there is no building code and the bulk of building regulations is made of planning regulations and bylaws made by local authorities. As opposed to the RIBA Plan of work's approach where planning is only listed under their task bar, this framework has mapped it as a full phase with dedicated activities and prescribed documents which if observed adequately should increase the implementation rate or level of existing building policies. The documents identified are mostly already identified within the existing building regulations but because of laxity and permissiveness of various stakeholders including the actual implementers such as the local authorities and their staffs as well the poor quality and quantity of staffs and ignorance of all stakeholders they are either disregarded or not even created in the first place. The framework places a duty upon the implementers to create those documents and upon professionals and project owners to ensure that they have complied with the requirements. It is estimated that by working collaboratively and responsibly stakeholders could compensate each other's institutional shortcomings and thereby contribute to the improvement of the implementation level. Greater focus is placed upon the local authority's activities as the success or failure of the implementation mission vastly depend upon their ability to effectively supervise and control building work and to efficiently issue and enforce breaches either through their statutory powers or

through the courts. In that sense the major drivers for this phase are Leadership, Collaboration and efficient organisation.

d- Phase four: Construction phase

The RIBA Plan of work has excellently listed activities which must be completed in delivering a bespoke constructed building. The framework works around those tasks to prescribe further activities and paperwork which will contribute at ensuring that stakeholders remain true to the owner's project and deliver in full compliance with existing building laws and regulations. The documents prescribed within the framework are strategically designed to put pressure on stakeholders for further effort in complying with the policy and regulations and most importantly to curtail the wishful thinking of those inclined to give way to corrupt conducts whether as instigators or as beneficiaries. The overall aim of the framework is to trigger best practices and transform mentalities on the long term.

e- Phase five: Occupancy and Operations

The last phase of this framework covers the activities listed within stages 6 and 7 of the RIBA Plan of work. the activities listed are crucial for successful commissioning. However, because the stakeholders would have discharged their respective commitment compliantly following the prescribed actions listed in earlier phases this phase simply prescribes activities which will come to reinforce the confidence that the building has been constructed compliantly and where necessary prepare the future of the building to continue to operate beyond the construction phase in compliance with the overall building policies. tasks listed aim at reinforcing health and safety policies through adequate maintenance. The drivers supporting the objective at this phase are leadership through their adaptive component, collaboration and competency.

7.3.2.2 Framework Documents

The research carried out in our case study has revealed that in developing countries building policies were not adequately supported to hit the intended goal. Analysis of the data gathered highlighted a significant gap between the aims of the building policies, laws and regulations and the actual practice of stakeholders. In summary the building field was found to be wanting in integrity, lacking in confidence and the whole

of the building construction field was grossly characterised by poor governance flowing from the policymakers to the technical stakeholders and street level implementers. In analysing the overall picture, we concluded that an adequate strategy aiming at improving the dire picture and driving stakeholders to better compliance was by subjecting their day to day practice to adherence of dedicated prescribed documents. We put an emphasis on this prescription to solve the research question as we were persuaded that in all institutions, documents keep stakeholders compliant and provide for governance through transparency and traceability. Above all we took the view that they protect stakeholders' integrity and instil confidence not only to the general public and investors but also to the building owners and in the government. Because of that position we analysed the system and built the framework based on dedicated documents which would lead to the intended aim. It should be noted that some of the prescribed documents already exist in practice but are ignored by stakeholders or simply not taken into consideration due to poor culture and permissive approach adopted by the authorities. The list of documents specifically identified in each phase and summarised below are not exhaustive though. The overall aim of the identified documents is stated but in practice it may take a specific form as would be designed by the party responsible for its creation. The framework clearly indicates which party oversees, creates or monitors the prescribed activities.

1. Phase one Documents

- **Owner Project Requirements**

This is the most important document of the whole construction process. It is developed conjointly by the Project owner (PO) and by the Project management team or manager (PM) after open meeting discussions on the aspirations of the former. The document is critical and defines the goal, reference points and success criteria for the owner's project. It is the documents that details what type of construction the owner wants and how he wants it to be done and delivered. This is a permanent and flexible document which lasts throughout the project life and which is altered at each building phase to reflect the changing nature of the agreement between the owner and the management team. It is a crucial document as it can also serve as central evidential document in the unlikely event of contract dispute between the owner and the management team. The proposed document should be conceived allowing for signature by both parties.

Because of this requirement it is anticipated that greater care would be taken to abide by the building laws and policies as failure to do so may be perceived as breach of contract or trigger personal liability.

- **Catalogue of relevant regulations, laws and policies and their Execution Plan**

The research carried in this project revealed that processes were blurred and that in practice there was a real shamble in the building process. That state of affair was perceived as catalyst to poor or non-implementation of existing building laws and regulations as it enables poor habits such as corruption and unregulated practices to dominate the field. An initial exercise by the main stakeholders of a building construction project consisting in identifying and classifying the relevant regulations and policies applicable to the specific project will enhance the chance of hitting a higher implementation rate of those regulations in practice. Once the identification exercise has taken place, an execution plan would ideally highlight the path to be followed by all stakeholders throughout the project. Because all activities and expenses will be clearly identified and planned in advance and shared with other stakeholders, it may prove difficult for a specific group of stakeholders to generate barriers. This document would also significantly contribute in raising awareness of the building laws and regulations within the owners' community and be used as a reference material throughout the construction cycle to ensure that the project is being delivered compliantly.

This document is a planning and construction compliance checklist. It is also a prompt for the project management team to show evidence that effort has been made even in the absence of control to comply with the statutory and policies requirements. Using the stick, carrot and tambourine approach the authorities should ensure that incentives are put in place for those who can self-certify their work through adequate schemes and that where evidence of non-compliance has been shown that there be systematic serious financial and regulatory penalties. This form would also contribute in improving the compliance rate.

- **Commissioning Plan**

This document is also a permanent document. The prescription to have a document in this form is to ensure that from the outset and throughout the project's life consideration is given to the legal and regulatory requirement of each task. It will enable a party to identify at an earlier stage whether there is a shortcoming in the procedural or technical requirements and to address it in a timely manner. This would contribute in delivering the building policy and regulations at a higher rate and with greater fidelity.

- **Building Construction Information Pack**

This document must be developed by the local authorities or where appropriate by the statutory body in charge of building constructions and accessible to the general population free of charge. This document and other similar strategies participate in popularising building policies, laws and regulations and in empowering the stakeholders, so they can challenge corrupt officials more readily and with greater confidence.

- **Training requirements and delivery plan**

This requirement to have and keep this document place greater responsibilities over the project owner and contractors to drive them to remain compliant and to act with integrity during the project life. The requirement will prompt contractors and project managers to contribute effectively to the training and development of their staff which the research suggests are mostly ignorant of the laws and regulations and lack formal training to competently discharge their role at the standards prescribed within the building policies or laws and regulations.

- **Incidents and Resolutions Log book**

This document contributes in ensuring that basic health and safety regulations are observed on building sites. With the prescribed document data would be generated and could contribute in triggering a policy adjustment. It also protects stakeholders in the larger meaning of the word.

2. **Phase two documents**

The documents identified in this phase are mostly technical in nature and like those prescribed in other phases are not exhaustive.

- **OPR (first updated version)**

The OPR created at the initial stage as shown above has provision for regular update and as such the updated version is required at the design phase. It is recognised that at the initial stage the owner's project requirements may change significantly usually as direct result of the input of the technical team with respect to the feasibility of the overall project or other adjustments prompted by financial or other reasons. The requirement to update this document would prompt the project manager to double check that the amendments have not led to a specific part of the project falling either below the standard or to make provision for them to remain compliant.

- **Basis of Design (BOD)**

This is a crucial document which should be developed and prepared by the design team. By being statutorily or merely for good practice reason required to produce this document. It is expected that engineers and architects would put more thought into the specific regulations of their jurisdiction in explaining the basis of their design. This document could contribute in triggering the architects and engineers to do more in complying with the national regulations and to instil more confidence in both the future building and in the owner. That could then lead to an enhanced motivation from all stakeholders. Upon completion of the work on design this document must be cross checked with the catalogue of relevant laws and regulations to ensure that the identified regulations have been effectively complied with in the conception/development of the design

- **Systems manual**

This document must be created by the technical team, particularly those involved in the design to describe the systems adopted for the projects. By producing that document at the early stage, better education would be provided to manual staff and the management team to have a better and clearer training plan for the work force. The existence of this document in a compulsory manner would strengthen the knowledge and compliance requirements of existing regulations.

- **Commissioning plan updated (design)**

As stated above this document which is flexible is updated at all crucial stages and the requirement to do it at this stage enables the project manager and the technical team to re-assess the statutory and best practice requirements which need to be adjusted to successful commission the building at the end of their project.

3. Phase three documents

Most of the documents prescribed at this stage are statutory in most jurisdictions. However, where they are not step should be taken to ensure that they are created. The most important document for this phase is the actual Permit to Build. This document is considered as essential because if the recommended steps are followed it will be certain that the building will be constructed compliantly at this stage.

- **Planning permission Application form**

This form must be designed by the local authority or the statutory body nominated to assess and grant planning permission. The aim of this form is to provide evidence that the planned construction is designed and compliance with the building policies and regulations. It is a prompt for practitioners and it is suggested that the local authority hands this form out or direct applicants to a website where full details of what is required for a successful application be provided. This will go a long way in educating stakeholders and popularising building laws and regulations whilst triggering better greater compliance and adherence. This document must be completed and cross-checked against the catalogue of laws and regulations identified as relevant to the project and must confirmed that they have been complied with.

- **Quantitative and Architectural Plans**

This is a technical document produced by the architect and those associated to the design conception. It is expected that the plans drawn are done in accordance with local building regulations. In most countries this document is expected to adopt a certain form and meet specific criteria. The level of technicity expected to meet the minimum standards is a catalyst for compliance. Like all other documents they must be cross-checked against the catalogue of relevant laws and regulations document and confirmation as to whether the conceived plans are compliant must be given.

- **Other statutory documents**

At this stage of the procedure, several other required documents such as the Certificate of Urbanism in Cameroon are required for a successful application. The local authorities should design those documents in a way that would prompt applicants to reflect on its nature and be able to assess their prospect of success on their own even prior to the filing of the application. That should ideally be done through free information channels and other free published literature.

- **Permit to Build**

This document must be obtained before the start of construction work. In some jurisdictions such as Cameroon it was established that stakeholders were often at liberty to start their construction work prior to obtaining the permit. That practice is a significant pitfall and should be avoided, hence the prescription of this document as pre-requisite for the start of the construction phase.

4. Phase four documents

- **OPR second updated version**

This document developed and introduced at the beginning of the project must be updated at all stages and remains the responsibility of the project manager.

- **BOD updated**

This document must be updated whenever there has been a change/modification on the design aspect of the project.

- **Commissioning plan updated (full version)**

This document created at the beginning of the project must be updated at this stage to show compliance with building regulations, particularly with respect to the construction aspect. It is always a prompt for stakeholders to remain professional and compliant. Where updated adequately, it will suppress the risk of voluntary or inadvertent non-compliance.

- **Evaluation reports**

The project manager must agree datelines and process for contractor to submit regular evaluation reports for assessment. With these reports, the management team and building controllers have the opportunity to spot potential non-compliance and discuss/advise stakeholders on how best to adjust or drive the project to a cleaner completion.

- **Tests procedure handbook**

This handbook is usually developed by the industry or the dedicated inspection/control agency and guides stakeholders on construction sites on the procedure and was of delivering tests. This document is important and must be available to everybody involved in testing to preserve the integrity of tests done. Where adequately followed the risk of building contrary or in breach of technical regulations is reduced.

- **Building control plan**

This document kept in double copies is prepared at the controllers first visit on building site or upon transfer of the file from the planning department to the building control team. This set up the schedule of visits by local authority or the approved building inspectors. Ideally parties are encouraged to work collaboratively in agreeing the planned visits and tasks. The requirement to put this document in place is vital in combatting frauds and corruption and the effective driver for this to drive the standards up and ensure compliance is collaborative working and technical knowledge.

- **Records of test data and associated reports**

This document must be available in double copy both at the building site and at the local authority (building control department) to ensure adequate monitoring. It serves as a prompt for the authorities and for the project manager to pick up on any aspect of the work requiring adjustment for effective compliance.

- **Penalty notices and judicial orders**

These documents are issued by the local authorities or by the court as scheduled within the statute. It places an emphasis on the power of implementers. The research revealed that implementers did not have real power to enforce breaches and it is important that

these documents be issued where breaches have been noted. The certainty that these documents exist and issued automatically would lead stakeholders to better adherence to laws and regulations and thereby drive the whole implementation process to their effectiveness.

5. **Phase five documents (Occupancy and operations)**

- **OPR final update**

This document is updated for the last time at this stage and should ideally match with the actual building constructed.

- **BOD Final update**

This document is updated at this stage and should reflect the design and systems implemented and present in the building constructed.

- **Maintenance Schedules information sheet**

This is an important document in ensuring that a compliant building remains so beyond the construction phase and throughout its existence. It is prepared conjointly the technical staff and the building manager and given to the building owner at the end of all construction work with a full brief. That will contribute in maintaining the building to a satisfactory level with regard to its performance and to maintain the effective implementation of the building policy.

- **Final commissioning report**

This document is prepared alongside the final compliance report based on the various commissioning plan completed throughout the building construction phases.

- **Final compliance report**

This document is prepared by the management team typically for insurance purposes and for the local authority benefit where a certificate of conformity is needed. In completing this document, it is expected that practitioners will demonstrate how the standards have been met and how the building will continue to exist sustainably beyond the commissioning.

- **Certificate of conformity**

This document is issued by the local authority based on various commissioning reports and supported by the final compliance report. It is the pinnacle of establishing that a building has been constructed compliantly. The research revealed that although this document is required in some jurisdictions it is not always obtained. Because of this gap it is almost impossible to assess whether buildings have been constructed in accordance with the building policies. it is suggested that this document be compulsory within 6 months of the building being occupied and that where a failure to obtain it is observed that there be a severe and sustained penalty for the breach.

Overall the framework phases mapped with the RIBA stages and its key features are summarised within the below table 20.

FRAMEWORK PHASES	RIBA STAGES	Key activities for effective implementation	Prescribed Key documents
PHASE 1	Stage 0 (Strategic Definition)	Identification of client's aims and objectives and review of sustainability requirements Identify barriers and project's Scope Identification of regulations and definition of the strategy for effective implementation	Owner Project Requirements (OPR) Catalogue of Relevant Regulations, Laws and Policies
	Stage 1 (Preparation & Brief)	Project analysis and development plan (Preparation of feasibility studies; funding methods) Identification of procurement method and procedures, identification of required expertise for technical and legal compliance. Identification and description of main construction activities Agreement on Budget and Finances	OPR (update) Project execution Plan Commissioning Plan Training Requirement Plan & delivery Staff Manual

		Agreement on Project execution Plan Development of communication & information exchange process and circulation Develop a staff manual Development and publication of Building information pack Identification of needs, planning and delivery of trainings and quality control diary setting Conception and dissemination of IRRB Drafting of design brief Decision on procurement route and selection of contractors	Building Construction Information Pack Incidents Records & Resolution log book (IRRB) Design brief
PHASE 2	Stages 2 (Concept Design)	Further Discussion & agreement on design basis concept based on planning laws and regulations	Basis of Design Report (BOD) Systems manual Updated commissioning plan Design Brief updated
	Stage 3 (Develop Design)	Implementation of Design Brief and preparation of additional data based on planning and building regulations	
	Stage 4 (Technical Design)	Development of technical design in compliance with local planning laws, safety laws and national sustainability policies. Identify and plan the delivery of training needs subsequent to the final design adoption	

		Develop information manual of systems adopted within design Drafting of the end of design phase report and design vetting	
P H A S E 3 (planning)		Discussion with relevant experts Publication of applications assessment criteria and processes Completion and submission of the application Checking Compliance with local planning regulations (publication of notices/ responses…) Design validation/ approval Application assessment in compliance with local regulations Transparent appeal process Issue permits or formal motivated refusal	Planning Permission Form Quantitative & Architectural Plans Other Statutory Documents Planning Compliance checklist Building Permit
P H A S E 4	Stage 5 (Construction)	Publication of building control criteria and procedure Agreement on controls diary Finalise the building contracts & appointing contractors. Briefing contractors on design, procedure and timelines Reviewing List of Activities Handing over site to contractors.	OPR (updated) BOD (updated) Commissioning Plan (updated) Evaluation & progress Reports Approved Inspectors Register Test Procedure Handbook

		Statutory and non-statutory inspections/ controls Record of performances/ test data Administration of contracts Coordination of Communication and information exchange Drafting of the preliminary commissioning Report	Test Data Reports Sheet
PHASE 5	Stages 6 (Handover)	Review and evaluation of OPR Review and evaluation of BOD Administration of the building contracts after Practical Completion and making final inspections. Brief owner on operation and maintenance Transfer of BOMM to owner Publication of procedure and criteria for Certificate of Conformity	OPR updated BOD updated Building Operation and maintenance Manual (BOMM) Final Commissioning Report (Application form for certificate of conformity) Certificate of Conformity
	Stage 7 (In use)	Administration of the building contract after Practical Completion and making final inspections. Carry survey on building performance and adherence to building policies	Survey questionnaire Post occupancy inspection report

Table 20: Summary of the framework phases

7.3.2.3 Framework Drivers

The framework is underpinned by specific drivers identified and inserted in the strategy based on the research findings and literature review extracted from the CIT and the Fixsen strategy as highlighted above. Those five main drivers have been identified and commented upon in section 7.3 above. Within the framework has also been inserted a sixth driver, namely communication which although can be associated to the collaboration driver is an essential ingredient for success.

- **Collaboration**

From the data gathered and analysed, complaints of all nature emerged and all related to the lack of collaboration between stakeholders of the building construction sites which they all identify as significant contributor to the poor or non-implementation of building policies, laws and regulations. Participants unanimously and often humbly recognised that they were confused as to how to effectively tackle the complex nature of building project in an era where there is an increasing inter-dependence and where the sustainability agenda impose a greater need of innovation. The main fracture identified was the frosty nature of the relationship between engineers and architects as a soft leadership infighting impacted upon the effectiveness and efficiency of the project delivery. Overall there was no real collaboration between the various actors as the building inspectors and other bodies from the local authorities were often perceived by the professionals on the ground as adverse in their approach to appraising or inspecting the projects. This differs significantly from the practice in England where the data collected clearly indicated for example that local authorities and project coordinators work as a team towards delivering buildings constructed compliantly. Meanwhile the literature review in its entirety perceives collaborative working as key in achieving goals and objectives of any policy. It was therefore crucial for us to pug this gap by putting in place strategies that would encourage practitioners and all stakeholders involved in the building construction to carry out their respective building work in a way conducive to the effective implementation of building laws and regulations through collaborative working.

In addition, the research data suggested that in developing countries, processes were lacking or poor on building construction sites and that significantly impacted upon the effectiveness and efficiency of constructions which in turn resulted in poor

implementation of building regulations and policies. When asked about how things could be improved several key stakeholders suggested that prescribing a uniform working method to be follow in all building projects could trigger a greater implementation of building regulations. From the analysis of the data gathered, we concluded that by contextualising and bringing a tested and proven system of work such as the RIBA and to prescribe specific working documents in the jurisdiction, practices may be improved and the effects of the identified pitfalls to effective implementation may be soften. Accordingly, in developing the framework, specific documents considered as capable of keeping the stakeholders focus and at task and which would progressively introduce and maintain a systematic collaborative approach in all building construction sites were introduced. The framework also places an emphasis on the collaborative framework and as such was developed so that from the project manager to the jobbers on working site there be a strategy for a collectively agreed way of working. In achieving this inspiration was drawn from the ISO44001 which sets out the framework for successful collaboration. The framework was therefore designed to include tasks and documents that promote the strategic awareness of the areas and associated benefits of collaboration in delivering the owner's project and in complying with the building policies goals. It also prescribes activities and documents the will enhance the stakeholders understanding of the strategic understanding of the whole project and encourage effective collaboration for full implementation of building laws, regulations and policies. The success of any collaboration on the building site would naturally depend on a good structed process for contractors and sub-contractors' selection and as such tasks prescribed are in nature designed to prompt those in charge to keep this in focus when proceeding to the selection.

It is believed that such approach limits the scope of poor working approach and establish a system of work that can be traceable and evaluated objectively. With this working approach progress would be made as stakeholders will work in confidence as a real team on the building site, corrupt practices would be reduced and risk would be reduced.

- **Communication**

The research data collected in this investigation exposed the lack of effective communication on building sites as a major cause of non-implementation of building policies in developing countries. It was revealed that in practice the different category

of stakeholders often worked independently, and contractors mainly discharged their tasks without truly reflecting on what other actors of the same project were doing. A close review of the data collected leads us to the conclusion that often there is a lack of leadership on the site and it often associated with non-existing or poor communication strategy. With such set up it was foreseeable that the building policy goals may not be achieved. The literature is abundant in finding that the quality of project delivery is often associated with the level of communication as it is likely that projects developed with high levels of communication have more chances to be delivered on or ahead of schedule with greater safety records and at less costs.

We considered that a framework for effective implementation of building laws, regulations and policies in this jurisdiction should include a mechanism facilitating communication amongst the various categories of stakeholders involved in any building project. Where the communication driver is identified within the framework it refers to strategy aiming at building and maintaining relationships between different entities ranging from the local authorities to engineers and architects and other actors. The communication driver is also highlighted in the framework to highlight areas where it should foster idea sharing and innovations, particularly in the context of sustainability. Finally, communication is also identified in the framework where it should be used to assist in building confidence and strengthening relationships amongst different category of stakeholders. This driver was clearly identified within the framework to guide project manager to lead efficiently and have it permanently in mind when developing their delivery strategy. The enhanced communication approach reflected within the prescribed activities and documents would contribute at enhancing the implementation of building policies with greater fidelity.

- **Motivation**

Motivation is often defined as involving people doing an activity because they find it interesting and derive spontaneous satisfaction from the activity itself (Barg et Al; 2014). Analysis of the research conducted revealed that workers of the building construction sector, employees of the local authority and home owners were not particularly motivated and had no incentive to adhere to existing building regulations in developing countries. The lack of motivation was perceived as directly linked to the lack of financial incentive (low wages) poor working environment and culture

(corruption and lack of risk awareness), incompetency and lack of technical knowledge. This was a significant factor in the observed non-implementation of building policies in Cameroon. It transpired from the analysis of the data collected that participants were well conscious of the fact that by finding strategies that can enhance the motivation of stakeholders of the building industry a clear shift could be seen and their performance could be better. In developing the framework, care was taken to prescribe activities and documents which could empower stakeholders and thereby incite their motivation to work compliantly. The motivation drivers identified within the framework therefore referred to activities which can add value to the perceptions and feeling of stakeholders in order to raise their motivation. This can only be achieved through collaborative working and in addition to the framework, a review of the policy may also be necessary in order to consider adequate incentive directly linked to adherence to existing laws and regulations as well as to the sustainability objective.

- **Competency driver (Technical knowledge)**

The technical knowledge driver identified within the framework referred to various situations where the use of technical knowledge acquired through formal education and or practical experience is required to successfully deliver the objective. In practice this may be linked to onsite trainings or other input that could enhance the quality of the project delivery. Where a strong technical team is assembled and worked collaboratively the likelihood of the building policy being delivered with closer fidelity is enhanced.

- **Organisational and leadership (Effective management)**

Management is central to the delivery of any policy goal. that is not different with building construction and as such the framework has been built with features that reinforce the management impact on deliveries. Effective management will be referred in the framework to indicate where strong competencies must be displayed to discharge the adaptive attribute and organisational abilities of the leaders.

The full framework in its final version is shown below and also attached **as appendix 11** to thesis.

implementation Phases ⇓	Documents ⇓	Main Activities ⇓	Executed By ⇓	Approved By ⇓	Implementation drivers ⇓	Notes ⇓
Exploration of Policies & regulatory requirement and Indexation on RIBA activities	***Owner Project Requirements (OPR):*** This document defines the goals, reference points and success criteria for the building project. It is the permanent reference document. It is prepared by the MT and includes the policy implementation strategies.	❖ Definition of owner's needs and objectives ❖ Definition scope of project (Strategic definition including sustainability needs and benefits and identification of the required regulations) ❖ Elaboration of the full implementation strategy (stages breakdown) ❖ Project Analysis with emphasis on regulations ❖ Elaboration, publication of whistle blowing policies on corrupt practices during project life ❖ Information campaigns via TV or other alternative communication channels to popularize building laws, regulations and incentives.	**PO /MT** **MT** **MT** **MT / PO** **MT / LO** **LA**	**PO** **PO / MT** **MT** **MT** **MT / LO** **LA**	**Collaboration**: • Development of collaboration framework and strategy by **MT** for regulatory compliance at all stages. **Communication**: • Creation of a discussion platform by **MT** for ideas exchange on implementation of BR related to the project • Dissemination of information on whistle blowing policies **Motivation**: • Publications by **LA** with showcase of building compliance as well as threats/ consequences of non-compliance. • Publication by professional bodies of consequences of non-compliance on individual memberships • Confidentiality in the treatment of malpractice reports	*The tasks identified are in addition to the ordinary activities listed in the RIBA Plan of Work* *This phase will be successful where the LA or Government have set up a clear policy with rules on where to build or not as well as a strategic document on the town planning.* *A Clear policy on whistle blowing for corruption and malpractice related matters must also be adopted and published. Care must be taken in the process to protect the identity of the whistleblower* *It is recommended that the LA have a permanent popularization strategy and incentive system for compliance*
	Catalog of Relevant Regulations, Laws and policies	❖ Establishment of a catalog of relevant regulations, laws and policies by category (Health and safety/ technical norms/ materials/ administrative)	**MT/ENG/ARC**	**MT**	**Collaboration**: • Development of collaboration framework and strategy by **MT** for regulatory compliance at all stages. **Communication**: • Creation of a discussion platform by **MT** for ideas exchange on implementation of BR related to the project	*The success of this documents depends on the parties' commitment to work collaboratively and to synthetize relevant regulations and putting in place an appropriate strategy for successful inclusion within the delivery process.*

MT: Management Team **ARC**: Architect **GOV**: Central Government **TT**: Technical Team
PO: Project Owner **ENG**: Engineer **LA**: Local Authorities **CO**: Contractors

					Motivation: • Publications by **LA** with showcase of building compliance as well as threats/ consequences of non-compliance; incentives also. • Publication by professional bodies of consequences of non-compliance on individual memberships	
	Commissioning Plan This descriptive document highlights how the OPR will be met through the proposed design and which features would contribute to achieving the targeted building performance. Focus is placed on policy implementation	❖ Preparation of handover strategy ❖ Establish regulatory implementation Responsibilities for design and system of information exchange ❖ Justification of the implementation strategy used in the execution of the systems and technologies adopted; ❖ Definition of the regulatory and policy implementation plan	**MT** **ARCH/ ENG** **ENG/ARCH** **MT/ENG/ARCH**	**MT** **MT** **MT/ ARCH** **MT**	**Collaboration:** • **MT** adopt a collaboration strategy to coordinate the work of ENG & ARCH in respect of all design activities.; • MT Ensure dissemination of whistleblowing policies • **Stakeholders** work together for the compliance with BR and policies. **Identification of local Context:** • MT identifies local factors and practices in the development of its compliance strategies.	*The Plan outlines the scope of the commissioning activities along with responsibilities, schedules and procedures. It is updated throughout the project and is prepared with handover in mind*
	Building Construction Information pack	❖ Development and publication the information pack ❖ Set up a free information office for procedure and technical issues/ assistance. ❖ Publication and vulgarization of whistle blowing policies on corrupt practices during project life	**LA** **LA** **LA / GOV**	**LA** **LA / GOV** **LA/ GOV**	**Organizational drivers**: • System level intervention by **LA** • Facilitative administration by **LA** **Motivation:** • Showcase of compliance with BR and policies by **LA** to stakeholders • Warning on non-compliance consequences	*This document will contribute in popularizing building laws and regulations and the by setting up the free technical assistance office at the council's costs many self-builders will build compliantly. A Clear policy on whistle blowing for corruption and malpractice related matters must also be adopted and published.*

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	Training Requirements and delivery plan	❖ Identification of all trainings needed by all stakeholders of the building site throughout the project. ❖ Planning of the training programs and setting of delivery sequences ❖ Training of Building Controllers and adoption of inspection diary	**ENG/ARC/MT** **MT/ARC/ENG** **LA / GOV**	**MT** **MT** **LA / Gov**	**Leadership:** • Building Technical Knowledge **Collaboration:** • Identification and association of competent trainers **Competency Driver:** • Planning skills of MT and LA covering H&S regulations, materials and technical norms compliance **Motivation:** • Boast benefit to workers • Confidence in delivered buildings	*Training requirements for technical staffs, operations and maintenance personnel and occupants must be identified relative to commissioned systems, integrated building features, and equipment.* *Training empowers and motivates staff. Emphasis is placed upon BR compliance* *The idea for building controller is to have a specific national program and to set up a separate professional body for these practitioners*
	Incidents & Resolution Log Document	❖ Creation of incident reporting and resolution form (paper & electronic form) ❖ Briefing workers on reporting and recording procedures ❖ Creation of corrupt and malpractice report logs	**MT** **MT** **MT/LA**	**MT** **MT** **MT/LA**	**Organizational:** • Decision support data system **Competency Driver:** • Risk Prevention **Leadership drivers**: • Adaptive	*This document created prior to the start of construction work would ensure that Health & safety regulations are implemented and monitored and that where needed refresher trainings and practice changes are directed.* *Corruption and malpractice reports must be investigated confidentially and promptly.*
Pre-Planning phase	**OPR Update**	❖ Review of the catalog of regulations and policies and update list. ❖ Review of integration and sequence of operations with focus on design features and relevant regulations.	**MT/ENG/ AR/BO**	**MT**	**Identification of Leadership driver**: Adaptive	*The OPR update document will be updated based on the experiences encountered to date, including incident and resolutions approaches.*
	Basis of Design (BOD)	❖ Recording of the regulatory reasoning and all decisions made in relation to the design conception and development.	**ARC/ENG/MT** **ARC/ENG/MT**	**ARC/MT** **MT/ PO**	**Motivation Driver:** • For PO clear description can dope motivation **Leadership Drivers**	*It describes the technical approach used for systems selections, integration, and sequence of operations, focusing on design features critical to overall building*

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		❖ Outline specifications regulations and update Costs of regulatory compliance based on concept, developed and technical design ❖ Determination of design responsibilities and review of regulatory compliance strategies	**ARC/ENG/MT**	**ARC/ENG/ MT**	• Coordination of technical work **Collaboration drivers**: • **Eng & Arch** work collaboratively to produce the regulatory compliant report	*performance and reviews compliance strategy for relevant laws and regulations.* *Highlighting energetic and sustainability benefits to PO leads to increased motivation*
	Systems Manual	❖ Develop staff manual ❖ Develop a user guide for staff and site population ❖ Inspect the existence of this document ❖ Issue penalties for breaches	**MT** **ARC/ENG/MT** **LA / CO** **LA**	**MT** **MT** **LA** **LA**	**Identification of Organizational & Competency:** • **(**Planning skills, technical skills) **Motivation:** • Showcase of compliance with BR and policies by stakeholders • Warning on non-compliance consequences	*This document enables efficiency on the building site and ensure effective building performance beyond handover and occupancy* *Effective inspection of compliance and penalties for breaches reinforce the powers of implementers*
	Design Phase Commissioning Process Report	❖ Prepare a report with focus on commissioning at the end of the project. ❖ Review handover strategy with respect compliance with regulations	**MT** **MT**	**MT** **MT**	**Competency driver:** • adaptive) **Collaboration**: • The report is the product of exchanges between MT/ENG/ARCH and must be co-signed by them	*This document is created having in mind the final certification so at the end of all construction activities the building is conform.*
Planning phase	**Planning permission application form** **Quantitative & architectural plans**	❖ Training of members of the technical team ❖ Completion & submission of the application ❖ Issuance of Public Notice ❖ Response to Public Notice enquiries registered & sent to TT ❖ Application assessment & issue of decision (H&S & technical Regulations)	**MT/PO** **LA** **MT/PO** **LA** **LA**	**MT** **LA** **MT** **TT1** **TT2**	**Competency driver** • Technical Skills: Of technical committee **Communication**: • between MT and LA **Leadership driver**: • Adaptive by MT **Organizational drivers**: • System level intervention by **LA** • Facilitative administration by **LA**	*Prior to this stage LA must ensure that the TT or planning officer assessing the application is technically equipped with knowledge and skills to discharge their duty.* *The idea here is to make the process clearer for everyone involved and to have an objective approach which would render the system more coherent and less vulnerable to abuses.*

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	Urbanism certificate **Permit to Build**	❖ Acting on initial requirements of the TT1 ❖ Development & Publication of a standard assessment process and criteria followed by TT ❖ Issue & record Decisions on applications and publish decision ❖ Transfer approved application to Building Control Team ❖ Development and publication of an ethic code for employees ❖ Creation of corrupt and malpractice report logs ❖ Random checks/ audits of planning application files and decisions	**ARC/ENG/MT** **LA / GOV** **LA** **LA** **LA** **LA / MT**	**MT** **LA / GOV** **LA** **TT** **LA** **LA/ MT**	**Motivation driver**: • Prompt approval of compliant applications • Transparency of the Assessment process • Affordable application fees • Criminal and Civil charges for corrupt practices	*Elimination of administrative bottlenecks.* *LA and MT must have in place clear and published procedure of how to handle reports of corruption and malpractice on building sites. This action will be successful where confidentiality of the reporter is guaranteed.*
Construction Phase	**Owner's Project Requirements Update**	❖ Implementation of the construction strategy (compliance with regulations) ❖ Full project Review and update done on receipt of Building Permit ❖ Testing of material (for compliance)	**MT/ENG/ARC** **MT/ PO** **MT**	**MT/ENG/ARC** **PO/ MT** **MT**	**Collaboration** • Review of the initial framework with ARC/ENG/ PO **Leadership drivers** • Technical knowledge • Adaptive	*Establishing and maintaining a dynamic diary for review with all the technical stakeholders would prompt detection and adjustment of implementation shortcomings.*
	Commissioning Plan Update	❖ Review of handover strategy with respect to regulatory compliance ❖ Reflection on amendments made and updating of list of relevant regulations	**MT** **ARC/ENG/MT**	**MT** **ARC/ENG/ MT**	**Leadership driver** • adaptive & technical knowledge) **Organizational** • planning skill by MT & LA	*The Plan outlines the scope of the commissioning regulatory activities along with responsibilities, schedules and procedures. It is updated throughout the project*

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	Evaluation Reports	❖ Review Project execution plan in relation to regulatory compliance ❖ Ensure compliance with the approved documents ❖ Contractors deliver evaluation/ evidence of compliance with regulations ❖ MT approve/disapprove reports/ Issue feedback ❖ LA published/ keep compliance report in a file accessible to all on request	**MT/ ENG** **MT/ENG/ARC** **CO** **MT** **LA**	**MT** **LA** **MT** **MT** **LA**	**Collaboration:** **Leadership driver**: • adaptive & technical knowledge) **Motivation Driver:** • Reward for compliance (bonus) • Financial penalty for work done below regulatory requirements • Tax rebate for compliance	*This document is designed to keep all stakeholders at task and ensure effective supervision of regulatory process* *This document can instill confidence in PO and public and keep technical stakeholders at task*
	Test Procedures Handbook	❖ Publish full procedure for each test required with respect to regulatory compliance	**ARC/ENG/MT**	**MT**	**Competency drivers** • Technical skills **Leadership drivers** • Technical / Adaptive) **Collaboration**	*MT should put all procedure together in a folder accessible to all onsite to ensure effective regulatory compliance*
	Test Data Reports, Test and Balance Report **Penalty Notice** **Executive / Judicial Orders**	❖ LA (or designated body) Carryout statutory and non-statutory controls, inspections and tests ❖ LA (or designated body) Record outcomes and issue certificates where required ❖ LA / issues penalties and enforces sanctions for breaches ❖ MT Log all performance testing and other test results specified for the commissioned systems.	**LA/CO/ ENG/ Court** **LA** **LA** **MT**	**LA /GOV** **LA** **LA** **MT**	**Competency drivers** • Coaching skills **Organizational drivers**: • System level intervention/ • Facilitative administration/ • Decision support data system **Leadership** • Technical • Adaptive **Collaboration** **Motivation** • Issuance of penalty for non-compliance • Enforcement of penalties • Enforcement of judicial decisions for breaches	*This is the most important moment to ensure that BR are complied with through technical controls and tests.* *Safety and comfort of people working on site as well as those of the future occupiers are in the center of these activities with emphasis on prescribed regulations.* *Breaches are severely punished and enforcement ensured.*

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	Commissioning Report / Handover form	❖ Briefing of the project owner on compliance with regulations on building sustainability systems and functions ❖ Application for Certificate of conformity ❖ Carry statutory tests/ controls ❖ Appraise and decide on application ❖ Handover building to PO	**ARC/ENG/MT** **MT** **TT** **TT** **MT**	**MT** **LA** **LA** **LA** **MT**	**Competency Driver (Technical)** **Collaboration** **Motivation** • Transparent process • Prompt issuance of Certificate in compliant buildings • Penalty Orders for breaches	This document verifies that the handover strategy has been adhered to and if there is a gap that it is plugged. It motivates staff for future project and PO for the use of his building
Occupancy and Operations	**Operations and Maintenance Program Brief**	❖ Brief Owner on building functions, technologies and maintenance Programs with statutory actions needed to remain compliant ❖ Agree diary for post occupancy evaluation	**ARC/ENG/MT** **LA/ PO**	**MT** **LA**	**Competency drivers** • Coaching/ Training) **Leadership driver** • adaptive & technical knowledge **Organizational Driver** • planning skill **Motivation:** • Boast building performance • Reward through facility access (water electricity) • Tax relief for compliant buildings	The document advises the PO on frequency and recommended maintenance for effective performance PO motivation is enhanced by better understanding of the advantages of the building features and tax incentives.
	Test Data Records	❖ Handover copies of all Records and report data from all tests carried out either for statutory reasons or for quality assurance to PO	**MT**	**MT**	**Leadership** **Collaboration**	
	Maintenance Schedules information sheet	❖ Form handed over to PO to ensure continued compliance beyond project delivery	**MT**	**MT**	**Collaboration** **Motivation** • Tax rebate for compliance	

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	Other compliant documents (final commissioning report/ certificate of conformity …					

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7.4 Relevance and achieved benefits of the developed FEIBLPR

A review of the FEIBPLR presented above shows that, bearing in mind its full components, its usefulness and relevance are shown in its capacity to: (i) effectively tackle the two main causes (pervasive corruption and ignorance/lack of awareness) identified within the research as basis of non-implementation of building laws, regulations and policies in developing sub-Sahara countries, as well as (ii) its capacity to limit the impact of other identified causes of the failure.

It is submitted that the FEIBPLR plays this role by reducing the system complexity, uncertainty and by triggering a timely action and reaction from all stakeholders in adopting constructive strategies. With respect to the biggest factor, it is submitted that once operational, the FEIBPLR will definitely tackle the corruption and malpractice observed in the building construction sector as its prescribed steps and activities (which if undertaken with fidelity) would prevent corruption, facilitate its detection and allow for prompt investigation and punishment of the culprits whether they are instigators or perpetrators. It is also considered that the framework is particularly relevant for the fight against corruption as it prescribes amongst other strategies a publication mechanism for the reporting, naming and shaming of individual successfully prosecuted for corruption activities and malpractice. Prevention mechanism for the corrupt practices is effectively integrated within the framework as through the prescribed activities and documents it facilitates the adoption of rules and procedures that make it hard for the corrupt practices to take place and make way for the processes to be transparent. For instance, publication by the local councils of **an ethic code** to be adhered to by their staffs and the rules and procedures about reporting and investigating corrupt practices in the building construction field, as well as the development, vulgarisation and implementation of an effective **whistle blowing policy** that allows workers and others to report corrupt practices or suspicions of such practices set the ground for an open and honest culture and encourage good conduct whilst discouraging bad practices. It was however suggested that the whistle blowing policy and the recommended activities will be more productive in practice if steps are taken to protect the identity of the reporter and to effectively investigate the matter and take sanctions where the guilt is established. In addition, to the above strategy, the framework has gone beyond the recommendations of the focus groups by prescribing strong random but structured internal checks by the local council and through the building control

activities through periodic audits. In the same register, the framework relies on the fact that training and continued development programs made available to practitioners by the local and central government would have important modules on professional integrity in order to raise awareness and limit the extent of corruption.

The second most salient cause of non-implementation identified following the data analysis is the systemic issue of ignorance and lack of awareness as shown in the preceding chapters. The framework proves to be relevant and adequate as it has confronted and addressed that issue by simply putting in place practical ways in implementing the suggestions made by participants of the investigation. Accordingly, the framework prescribes activities which the local and central authorities must put in place to promote awareness and popularise existing laws, regulations and norms applicable in the building construction field. For example, a prescribed typical step is the production and distribution of reliable communication channels informing the general community on steps and requirements to follow in the construction of a compliant building as well as the opening of a local office run at the expenses of central or local authorities with the aim of placing architects and engineers at the disposition of the local community for quick advice and assistance in the drawing or checking of plans as to their conformity. It is anticipated that this action will contribute in dealing with the headaches of self-building and reported high costs identified within the studies as well as in dealing with the awareness issue. In the same manner, stakeholders are empowered through educational and training programmes. To achieve that aim the framework prescribes to the Local Authorities and the professional Orders to work collaboratively in the conception and delivery of compulsory continued Professional Development courses to practitioners. I believe that the tool will be much efficient if as recommended appropriate steps are taken in amount to introduce and train an independent body of building controllers. This task is dedicated to the Local authorities and central government.

Also, the Framework has been beneficial in that it addresses the pervasive lack of awareness/ ignorance issue by prescribing that Project Managers act in only recruiting workers who hold valid certifications where required and or they train them to the standards expected whilst on the building site.

Beyond tackling the two main causes identified above, the framework also includes other strategies such as compulsory technical compliance, establishment of a collaborative system of work and practical communication channels on the sites for better implementation of existing laws and regulations in practice. Overall, for the full potential to be realised, it is suggested that the developed instrument could initially be introduced as practice framework which with the government and other institutions' support could lead to a passing of legislation transforming the best practice into a legal framework.

7.5 Chapter Conclusion

The focus of this chapter was on the developed framework for effective implementation building policies in developing countries. It described the strategy adopted in the research to develop the framework. Overall, it highlights that the model is leaned on the existing RIBA Plan of work as it recognizes this model as the best process for effectively delivering building construction projects. It adopts the prescribed tasks of the RIBA Plan of work in its entirety and simply add documents and prescribes additional activities which will reinforce and institutionalize good practices on building construction sites. The chapter also indicates that the model was built based on the CIT and including the implementation drivers identified by the research work of Fixsen et Al (2013) and also taking reference from other implementation strategies such as the ISO4400. The developed implementation framework draws from the published implementation theories and provides a pragmatic structure for effectively deploying building policies with greater adherence. The innovation as compared to the RIBA Frame of work resides in the prescription of specific documents which aim at driving the building policy delivery with fidelity by keeping stakeholders and tasks and by prompting them at all time to reflect upon the drivers and strategy behind the prescription. The use of those documents contributes in guiding professionals and officials in achieving greater target in their day to day work and objectives. It can also be used as assessment measure and to build a professional and responsible reflex to cooperative working with the view of achieving a greater implementation rate and above all it can be used to pursue the international green agenda through the construction of sustainable buildings that can contribute both in the fight against global warming and energy consumption management.

It is believed that the framework constitutes an appropriate solution to the identified issue of poor or non-implementation of building laws policies in developing countries. Such perception was assessed and reported in the next chapter dealing with evaluation/validation of the framework. The full framework is as shown above and attached as **appendix 11** to the thesis.

CHAPTER 8: EVALUATION AND VALIDATION OF THE FRAMEWORK

8.0 Introduction

The aim the research was to assess existing building policies in developing countries and to establish the extent of the implementation with the view of developing strategies that could contribute/enhance the implementation rate. After it was established that existing building policies in developing countries were poorly or not effectively implemented, it became crucial to think of a strategy that could enhance the implementation rate of building policies by reducing or tackling the issues identified as barriers to the effective implementation. The research led to the conclusion that a framework would be the suitable instrument in the circumstances. The objectives of this framework were to:

- Guide policy implementers of the building sector to achieve a greater rate of success
- Establish adequate processes to follow by all stakeholders of the building construction field for briefing, designing, constructing, maintaining, operating and using building projects into a number of key phases and following a number of prescribed documents.
- Establish an effecting collaboration and communication framework amongst various categories of stakeholders of the building construction field
- Establish an effective system of work that can generate and perpetuate practices that would lead to better compliance of existing building policies.
- Encourage key stakeholders to develop practices and strategies that will achieve effective implementation of building laws and regulations;
- Help clarify individual and organisational roles and responsibilities of all stakeholders involved in the building construction process.

These objectives were achieved by obtaining and analyzing qualitative and quantitative data which highlighted the reasons behind the non-implementation observed. Those data also revealed what the various category of participants considered to be the solutions for the issues identified. In addition to the data gathered on the field, I drew from the existing theories of the implementation science and opted to build a framework leaning on the RIBA Framework with prescribed tasks and documents which would assist in effectively implementing the building policies. it is crucial to emphasize that

this framework is intended for use by all categories of stakeholders (agencies or individuals) of the building construction sector without exception. These extent to the Local Authority or the identified implementation agencies, the building policy makers whether at the central government level or at local level, building practitioners including architects, engineers, energy specialists, surveyors, bricklayers and builders to mention but some. Finally, the framework is also intended to be distributed more widely to share good practice and information and debate and research reviews about the implementation of building policies in developing countries.

This chapter aims to critically assess whether this research objective has been addressed by presenting the analysis of a workshop activity by a group of selected experts and individual representing the entire building construction field in Cameroon providing their views on the usefulness of the developed framework and making suggestion on potential improvement. To reach that aim, the chapter revisits the purpose of the evaluation at section 8.1, presents the evaluation methodology in section 8.2 and discusses the procedure and outcomes of the evaluation activity within section 8.3.

8.1 Purpose of the framework evaluation

Patton, M (1987) defines evaluation as a process that critically examine a program and insists that the purpose of evaluating is to make judgments about a program, to improve its effectiveness, and to inform programming decisions. Typically, there are two categories of evaluation namely formative and summative. The distinction between the two categories is usually made from their respective purposes. In general, Formative evaluations are conducted during program development and implementation and are useful in establishing whether a program would work in practice and if not to seek directions on how to best achieve your goals or improve your program. Summative evaluations on the other hand are recommended after the programs are well established and verify to what extent the program is achieving its goals (Norland, E. 2004). In the light of this distinction and considering that the evaluation sought in the context of our research is for a framework developed but not yet implemented, the evaluation method relevant here is formative in nature.

The main aim of the formative evaluation exercise is to give validity to the findings of this research and to determine the likely impact of that the Framework for effective implementation of Building policies as a means of delivering the building policy goals with greater fidelity in developing countries as well as to determine whether is fit for its purpose and that it would effectively lead to a greater level of implementation by all category of stakeholders. The objectives set to achieve the evaluation purpose are:

- Assessing consensual opinions about the need for the developed framework.
- Assessing how well the framework ensures that stakeholders of the building construction projects consider safety, comfort and sustainability issues in building construction in relation to existing laws and regulations.
- Assessing how effective the framework is in improving the overall quality standards observation and in implementing building laws, regulations and policies
- Assessing how well the framework ensures efficient respect of norms, implementation of laws and regulations during and beyond the building construction life cycle
- Assessing to what extent the activities and documents proposed within the framework captured and integrated the concept of implementation of norms, laws and regulations in the construction process.
- Assessing whether the proposed framework would improve the existing practices on site and enhance the implementation rate of existing building policies
- Assessing whether the proposed framework would set clearer processes and limit the scope of corruption in the building process.
- Gathering suggestions and scope for the improvement of the proposed the framework.

For the evaluation to be credible and relevant it is crucial that answers to the above issues are found with the active involvement of the various stakeholders (Kumar 2010). With the above focal points in mind I opted to evaluate the framework developed and described in Chapter 7 above to determine whether the inferences drawn from my analysis of the data gathered were meaningful and relevant and to verify that the different components of the developed framework were adequate and that it was fit for

its purpose. I did that bearing in mind that theories about the crucial importance of different intervention components cannot be assessed without verifying that these components were effectively administered (Durlak & Dupre 2008). The method used in the evaluation process is presented within the next section.

8.2 Methods of evaluation

As highlighted within chapter 4 of this thesis, the philosophical approach used in prosecuting this research is pragmatism. Because of its nature it was considered that flexibility must be one of the important drivers of solving the research question and as such various strategies were also applied in evaluating the framework. Concretely, the framework developed was evaluated through a combination of qualitative and quantitative methods characterised by (i) my reflection on the theoretical foundation of its development, (ii) my analysis of the data collected during the focus group discussion and (iii) my analysis of the survey questionnaires completed by participants of the focus group workshop conducted in Yaoundé with selected representatives of all categories of stakeholders of the building construction field.

As stated in Chapter 1, the ultimate goal of the thesis was to develop a practical and non-prescriptive instrument that would assist in effectively implementing building policies in developing countries as the initial hypothesis suggested that this was not currently the case. Having constructed such instrument, the methods described below seek to provide an initial formative evaluation of the framework by considering whether it is fit for its desired purposes.

8.2.1 Reflection on the theoretical foundation of the framework

My reflection on the selected theories taken into consideration in the development of the framework was made and included 3 aspects summarized as follows:

1) I considered how the key components of the CIT were introduced within the framework to trigger a higher implementation rate.
2) I considered and took into consideration the drivers' identification as suggested by Fixsen et Al in the framework development as highlighted within Chapter 7 of this thesis.

3) I considered how the key issues identified within table 15 and table17 as causes of poor or non-implementation of building policies as well as the stakeholders' proposed solutions to the identified causes summarized within table 16 and table 17 have been taken into consideration and strategies adopted and inserted into the framework development to control the identified pitfalls.
4) I reflected upon the potential weaknesses of the developed framework

8.2.2 Evaluation through qualitative research method (Focus group discussion)

- Data Collection

The qualitative aspect of the evaluation of the Framework for Effective implementation of Building policies was executed through a focus group discussion held at the National Advanced School of Public works in Yaoundé on 25 May 2018. This location was chosen due to the ease of access to all participants as well since there were seminars for high ranked and experienced stakeholders of the building construction field organised by ARPEDAC at the institution that day and as such the presence of selected participants was guaranteed. The group of participants was made of eleven stakeholders of the building construction field with mixed backgrounds. Participants were recruited using the same procedure as for the focus groups which contributed to main research described within Chapter 5. The group was essentially made of high ranked officers of the central government, high ranked officers of the local authorities, highly qualified building practitioners and architecture students. Precaution was taken so as not to select participants who took part to the initial research that led to the framework development. The main reason for this approach was the subjective perception that stakeholders who took part to the main research could be less objective and less critical than those who did not. Also, it was considered that an approval by a fresh panel of participants would corroborate the earlier findings and thereby render the research more credible. In general, the selected participants were highly experienced (with over 36% justifying more than 10 years' experience and a further 27% having between 5-10 years' experience in their practice). Only 4 participants (representing 36% and including 2 students) had less than 5 years' experience. In compliance with the ethics requirements, appropriate steps have been taken to keep their identity and position as well as their employers' details anonymous as some participants could easily be identified by their colleagues and members of the general public. Essentially, their various backgrounds

were as Civil engineers, architects, town planners, Building owners, Civil servants of the central government in charge of architecture and norms in the building construction and staff of the local authorities.

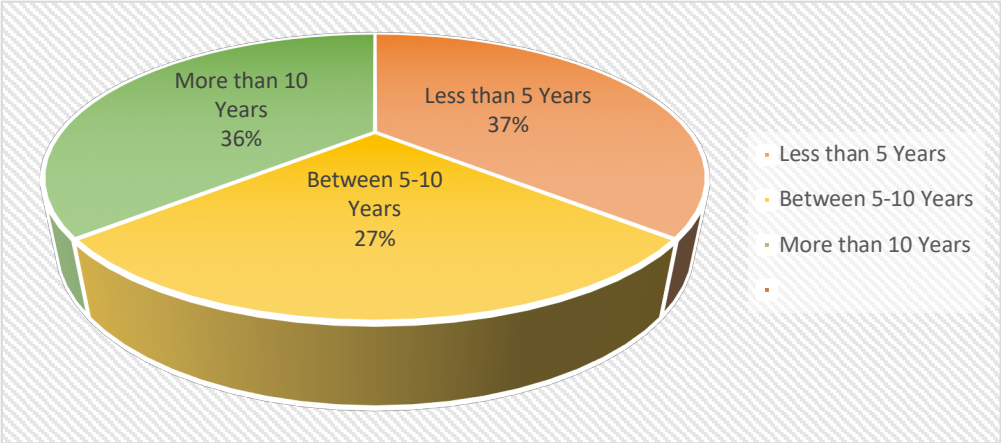

Figure 33: Years of experience of the evaluation focus group participants

- Procedure adopted for the focus group evaluation method of the framework

In order to have a fair and thorough evaluation, summary of the content of the framework along with a PowerPoint presentation summary of the data collection and outcome of the analysis of the main research was delivered to participants the day before the actual evaluation along with a brief to facilitate the understanding of the various components of the draft framework. The intention was to grant them the opportunity to have a deeper and critical review of the proposed framework and to think about it prior to the evaluation focus group discussion. It was anticipated that proceeding in this manner would place participants in a better position to critically reflect upon the proposed framework and make comments which would not only be fair but also improve the overall quality of the prepared instrument.

The focus group discussions lasted about 1h45 minutes. The discussion started with a 15 minutes presentation in which were revisited the research aim and objectives, data collection methodology, data analysis and findings as well as the theoretical framework leading to the conception and development of the proposed framework. At the end of the presentation, participants were divided in 2 groups of 5 and 6 members respectively with instructions to discuss their opinions on the proposed framework. That activity lasted for 30 minutes and the two groups came together for feedback discussions which

lasted 15 minutes. Participants were then invited to complete a feedback evaluation questionnaire at the end of the discussions. The researcher was assisted by an assistant who facilitated the exercise. Copy of the Agenda followed on the day is shown in table 21 below.

Framework for the Effective Implementation of Building Laws and Regulation Evaluation **Date: Friday 25th May 2018** **Time: 11h00 – 12h55** **Venue: Cameroon National Advanced School of Publics Works** **AGENDA**		
Welcome & Introduction	Dr Blaise Mempouo, (Supervisor)	05 minutes
Presentation	Claude-Bernard Tene (Researcher)	15 minutes
Questions	Participants	05 minutes
Discussion	In Groups	30 minutes
Feedback	From Groups	15 minutes
Lunch	Everyone	20 minutes
Completing evaluation forms	Participants	10 minutes
Vote of Thanks	Claude-Bernard Tene (Researcher)	05 minutes

Table 21: Agenda of the evaluation focus group discussion

- Coding and analysis of the focus group discussions

In a way similar to the earlier data collected through focus group discussions, the digital audio recording of the discussions was transcribed, translated from French to English and reviewed by the researcher who also reorganised the field notes which included non-verbal cues and other observations. The focus group transcripts were analysed using thematic analysis, a method for identifying, analysing, and reporting themes and patterns within data (Braun & Clarke, 2013). The analysis was done applying the

inductive approach (Braun & Clarke 2013; p175). Practically, every sentence of the transcript was copied within an excel spreadsheet subdivided in themes. The analysis was done by carefully recording the areas of agreement and disagreement between participants and by reflecting on the field notes and non-verbal cues registered. Care was taken to record relevant quotes made by identified participants in support or in disapproval of any aspect of the proposed framework.

8.2.3 Evaluation through quantitative method (Questionnaires)

- **Data collection**

The quantitative evaluation of the proposed framework was done through a survey questionnaire. After the group discussions and the feedback from the groups on the proposed framework, questionnaires were distributed to the participants for completion. The questionnaire was made of two distinct parts: Part A (questions 1-4) dealing with the background information about the participants, and Part B (questions 5 – 10) relating to participants' assessment of the proposed framework. Part B was also divided into two sections; the first section made essentially of question number 5 (made of 8 sub-questions) designed to be answered on a quantitative rating scale. At this sub-section participants were invited to grade their responses against a rating scale where 1 = Poor; 2 = Fair; 3 = Good; 4 = Very Good and 5 = Excellent. The second section constituted by questions 6 to 10 was designed as open-ended questions allowing participants to elaborate on their opinion about the validity of the framework. Upon completing the questionnaires participants were thanked for their participation and their individual questionnaires were entered into BOS software for analysis purposes. A copy of the validation questionnaire which was also developed through the Bristol Online Survey software is attached as **Appendix 10** to this thesis.

- **Analysis of the quantitative survey questionnaire**

Question 5, 5a, 5b, 5c, 5d, 5e, 5f and 5g of the survey questionnaire dealing with grading scale were analysed using the grade point average (GPA) which is calculated by dividing the total amount of grade points recorded by the total available points on the grading scale. The grade point average may range from 0.0 to a 4.0.

The Part2 results dealing with grading scale (questions 5, 5a, 5b, 5c, 5d, 5e, 5f and 5g) were analysed using the BOS software. Through this method data included in the questionnaire are automatically analysed and the statistical summary of each component and/or item of the questionnaire is presented either in the form of graph, charts or text.

8.3 Outcome of the evaluation

From the data gathered through the qualitative and quantitative methods described above a thorough analysis was made on the whole evaluation task. The outcome drawn from the exercise is presented in two sub-sections with the first part (8.3.1) dealing with the inference drawn from the qualitative data collected and the second part (8.3.2) dealing with the findings drawn from the quantitative data gathered.

8.3.1 Results of the qualitative data gathered

Through the coding and analysis process referred to above, four themes were identified. Those themes are: (a) the potential and usefulness of framework for effective implementation of building policies (b) potential weaknesses of the framework for effective implementation of building policies (c) the format and components of the framework and (d) the difficulties in assessing the framework and proposal to improve the developed framework.

- **The potential and usefulness of the developed framework**

The participants unanimously agreed that the developed model was useful, timely and plugged an immense gap in their practice. This perception was recorded in various statements made in the group discussion such as the statement of participant VFG06, a staff member of the local authority and implementer who stated that "*at last I feel that we have something that will show clearer guidance and standardise our way of working*" before concluding that "*with this instrument we will definitely work together and address each other shortcomings*". Similar quotes on various aspects of the framework are repeated by all participants. For example, when speaking about the prescribed documents VFG07 who is a high ranked and experienced project manager submits that "*the beauty of this document is its ability to put staff at task through the imposition of specific documents. That is fantastic*". Consistent interventions point to

the usefulness of the documents at various level particularly as it is perceived as plugging an existing gap. The feelings expressed suggest that professionals were desperate for a framework of this magnitude and their satisfaction is reflected within the statement of VFG08, an architect when he says "*this instrument is very useful and was much needed really. If it is followed by practitioners and by the local authority officers it will be very difficult for people to go around and ignore regulations without being caught*." Participants were of the view that the usefulness of the framework was also in the fact that could help addressing the issues identified in the main research as causes of the non-implementation of building policies. That perception is reflected by VFG09 who feels that "*this instrument could really help in combatting corruption and popularising building regulations. Look if the work is really controlled as proposed the building regulations will be fully observed believe me. This is a fantastic piece of work*". Other experienced professionals such as VFG10 an architect also share the same view as reflected in her statement that "*above the fact that this tool is extremely useful for collaborative working it is great in that it also makes suggestions for occupancy and building operations after construction. This is innovative and should be applauded*." Overall all participants agreed that the framework could be beneficial to the building construction field and could contribute in enhancing the implementation level of building policies as summarised by VFG11, a central authority officer who said of the framework that it was "*a beautiful tool that can inspire us all even on how best to develop and improve our policies*."

- **potential weaknesses of the framework for effective implementation of building policies**

Participants of the focus groups were asked to express their view on how they perceive the framework and it rapidly came out of the discussion that despite their overwhelming agreement that the tool could be useful and that such instrument was much needed, a number of potential weaknesses were also identified. The most salient potential weakness highlighted by more than six participants was the feeling that financial constraint due to poverty and insufficient technical and human resources could hamper the success of the framework. That view was expressed by participants such as VFG02 when he says "*in my view the framework sounds very sweet but I am seriously concerned that the lack of financial resources and the excessive costs of material would continue to drive people away from the regulations. Poverty is a major factor in our*

country and people often simply don't have a choice. they need a shelter and observing all steps of the framework means full compliance with regulations and therefore more costs. So, I don't know". In the discussion participants also considered that the tool did not seek to address the funding issues for building construction. However, as stated earlier in the thesis the framework was developed for effective implementation of building policies. It is therefore beyond the scope of the framework to develop strategies on how to curtail the financial and other constraints affecting the poor implementation. This can be further looked into by the policymakers.

The other potential weakness emerging from the discussion was its lack of distinction between various categories of buildings. For instances when discussing his assessment of the framework VFG09 stated that "*the only weakness I can see with the framework is that it seems to be applicable to all type of buildings. Maybe we should only follow this when building multi storey or tall buildings? If not, it may be a bit heavy for the common of Cameroonians.*" Whilst this can be perceived as a potential weakness, it appears that in various jurisdiction the building policies apply differently to various type of building and because the framework is designed to smoothen the implementation of building policies this should not be a major problem in practice.

In the same perspective, other participants such as VFG04 were of the opinion that the weakness of the framework resided in its reliance on tasks that are prescribed to the central and local government. They thought that the policymakers of the country were unreliable and that without their real input the whole framework may not achieve the intended outcome. He summarised his position by stating as follows: "*The problem here is that a lot will depend on how serious the local authority and even the government are. If the information pack and the other recommended assistance service to the general public is not created and made functional the framework may just be a beautiful document honestly*". Finally, it also transpired from the discussion that almost all participants felt that strictly adhering to the framework may add more time and require more resources to deliver building projects in an environment already squeezed by financial constraints.

Overall participants critically applied their mind on the proposed framework and considered the above features as potential weaknesses even though at times their criticisms were more directed to the policymaking rather than the tool itself.

- **The format, components and content of the framework**

Participants of the validation focus group spent a big chunk of the discussion reflecting on the format and components of the framework.

To facilitate the participant's understanding of various steps of the framework, steps were taken to contextualise the planning and construction procedure as currently in practice in Cameroon (see figures 13 and 14 in Chapter 3 above). Based on the data collected and analysed a suggestion of how the whole process could be adjusted to lead to a more pro-active and positive outcome, at least in terms of implementation of laws and regulations was made as illustrated below in figures 34 and 35. As can be noted several adjustments have been made including a strategy linking access to energy provision to the presentation of a valid Permit to Build at the end of the planning stage or a valid Certificate of Conformity at the end of the construction phase. That application could also theoretically significantly reduce the delays in dealing with the application even though this may require an act of parliament or a decree to adjust the delays. The aim was to enable the focus group participants to heave a better idea of how the carrot/stick/tambourine strategy could be applied in their current legislation to dope the implementation rate.

Planning phase

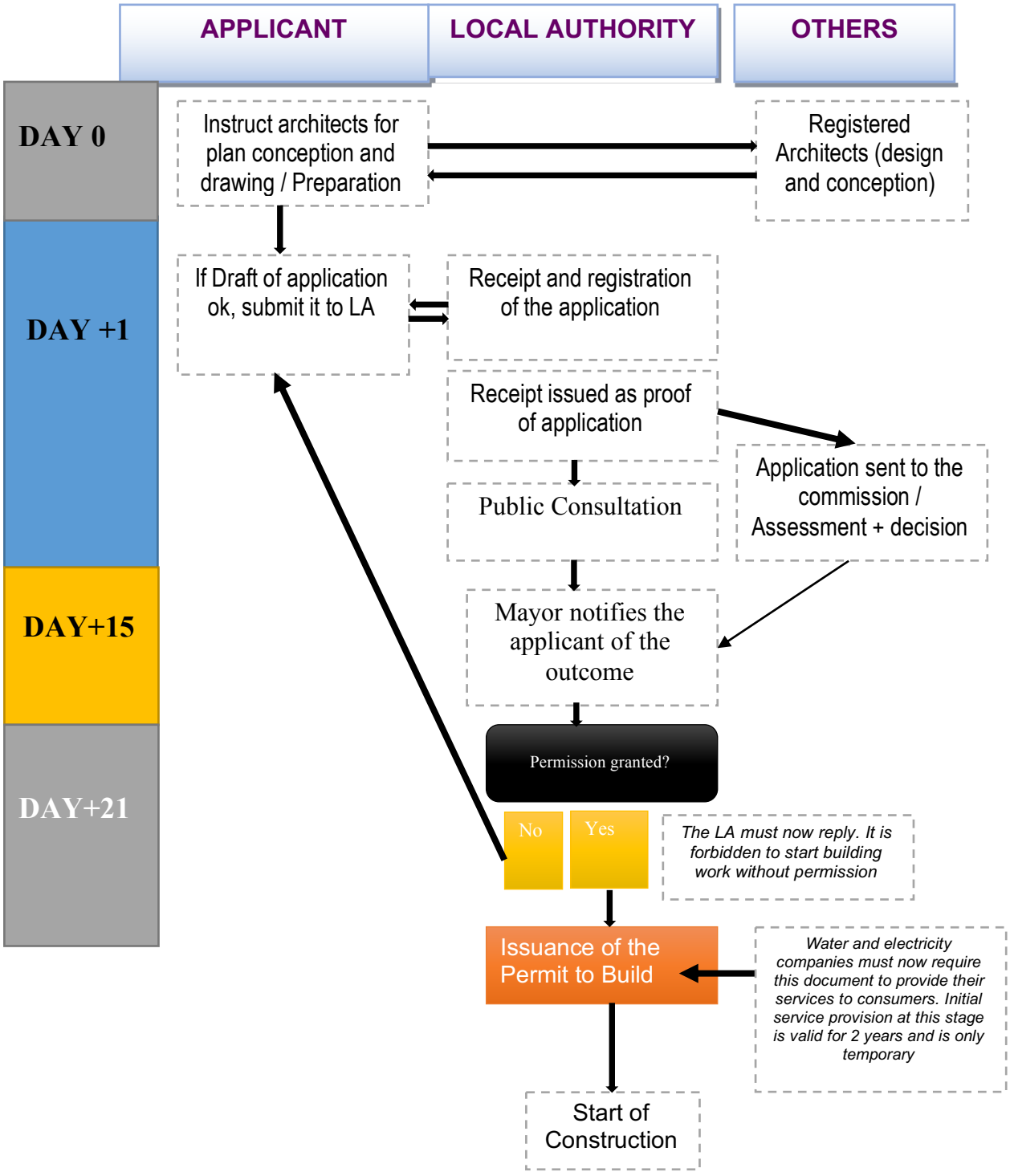

Figure 34: Proposed Planning permission process in Cameroon

Stage 2 Construction phase new:

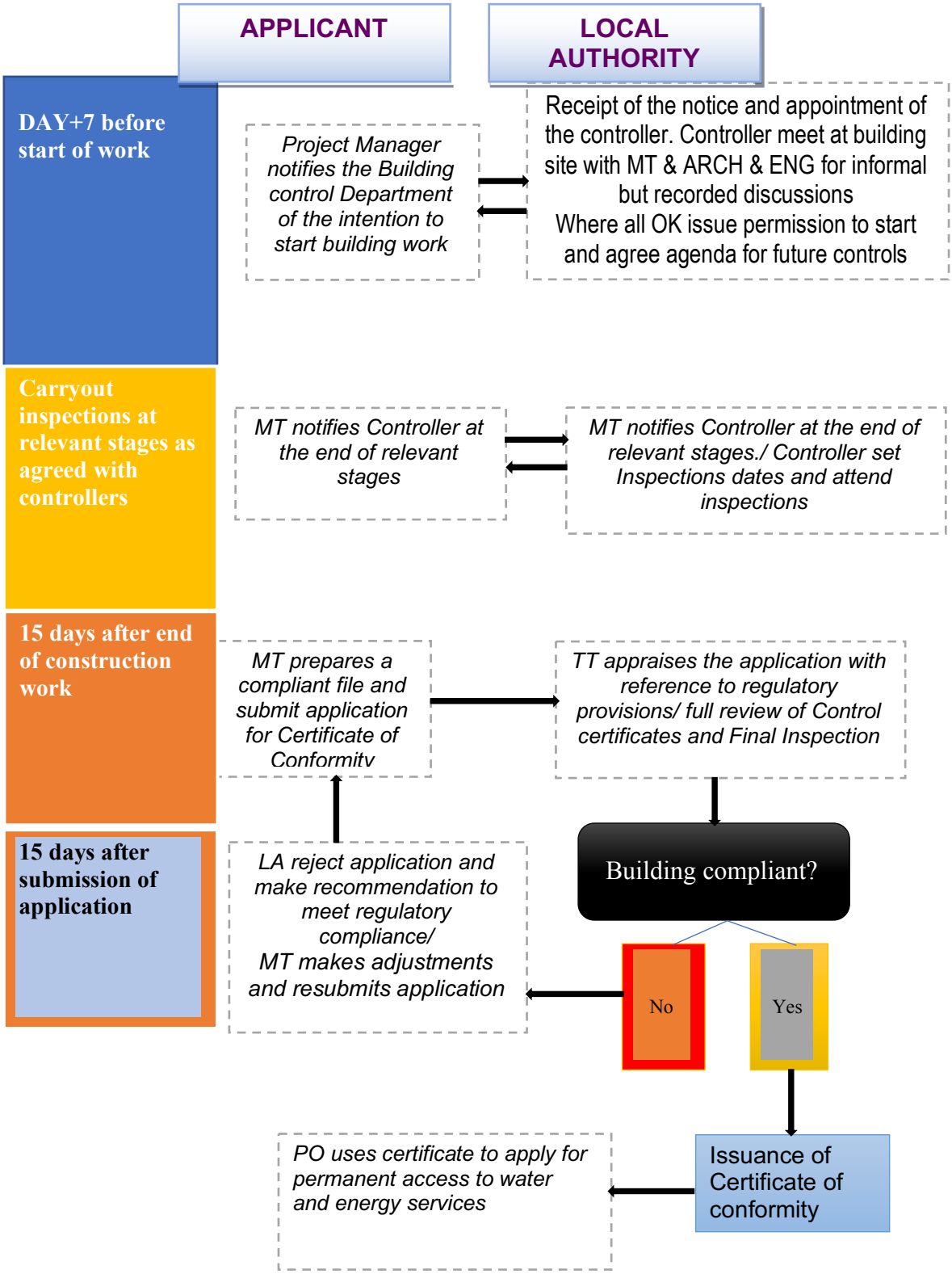

Figure 35: Proposed building Construction process in Cameroon

Drawing from the review of the proposed framework stages and reflecting on the above figures representative of the local building regulations and policies in the context of effective implementation, the overwhelming feeling of the focus group participants was that the idea to develop a framework leaning on the RIBA Plan of Work was a good one. This feeling was motivated by the participants' perception that with it, practitioners of the building construction sector and implementers of building policies would at last have a set of similar working process and approach and that this would render their work a lot easier. That perception to which the entire group approved either through verbal expressions or through body language was captured by the statement made by VFG02 when he said "*The fact that the document is rooted within the English Plan of work already used in advanced countries is a blessing here in Cameroon because we do not have a concerted working approach (…) people simply do as they see fit. It can be a reference document followed by all and the documents imposed may also ensure traceability and compliance. With this instrument it will be more difficult to build disorderly and without observing the regulations*".

Many participants also assessed the framework as a document and expressed a concern to the fact that in their opinion the framework was quite technical as compared to the targeted audience. They argued that the workforce in the building construction field was poorly educated and as such they felt that it may be challenging for the people involved in the building construction to understand and follow the prescriptions of the framework. That thought was also heavily supported by the perception that the document was very long hence the suggestion to divide the framework into various components. That was identified in VFG04's words when he stated that "*I am just wondering whether our builders and even engineers can really understand and follow the framework as currently presented. You know here people working on the building sites are not really educated. This may be challenging for them, even reading is an issue and the length of the document will not encourage them maybe you can divide and present it into different short frameworks to ease its understanding*".

When asked about their further views on the components of the framework, participants thought that the framework was clear and approved of the various components. For instance, VFG10 stated about the documents section that "*it is a very good idea to identify and prescribe documents which must be filled in at each stage. This will*

definitely help with the concrete implementation of building policies in this country. I mean if one has a document to fill in either at the beginning or at the end of a building phase, he will make sure that the work is done properly and that the regulations whether on the technical side or on the legal side are observed but of course penalties should be enforced".

When asked to consider the introduction of the section dealing with the drivers, participants were split with some suggesting that whist it could form the basis of all strategy there was no need to include it within the framework. VFG05 for example suggested that "*I don't think that it is important really. In my opinion it can be left out in order to make the framework less clustered*". However, the majority of stakeholders disapproved with that suggestion and instead advocated for it to be more detailed. That opinion was carried by FG08 who submitted that "*the use of drivers is an excellent light for project managers so they can reflect all the times on what they are actually trying to achieve. A good identification of drivers within the framework would keep everybody up when it comes to observing building policies this is a good item I think*".

Under this heading was also captured the participants' opinion on the inclusion of the theoretical basis of effective policy implementation within the framework. It was observed that 9 participants (about 82%) out of 11 participants strongly agreed that the framework constituted an excellent collaborative instrument which could contribute in effectively implementing the building policies. when openly asked whether participants believed that the ingredients of the CIT (namely the motivation, information, and power of the policy implementers along with the inclusion of the contextual factors) have been included in the framework, VFG01 expressed his strong agreement by stating that "*I think that the framework has been intelligently made with the focus on making everybody working as part of a team. It also gives clear powers to the local authority and directly involves the court and other authorities who can issue penalties for breaches for this reason I agree that elements of the contextual implementation theory are reflected in the framework*". It was observed that two participants did not expressly answer this question but their contribution suggested that they were uncertain due to their lack of familiarity with the CIT which was explained. In that respect VFG11 stated that "*I am not familiar with the CIT and I only heard about it today however I can clearly see that the framework is set to make everybody working together so collaboration is clearly there, but I do not know about the other requirements of the CIT*". Although VFG03 did not expressly comment on the content of the framework he

argued during the discussion that "*the most successful part of the proposed tool is in my opinion its ability to provoke a greater interaction between the different professions present on the building site you know it almost put everybody even the local authorities and the government in a position where they have to do something. If everybody must complete a document to show compliance it is almost sure that they will give more consideration to the regulations because a document can always be inspected even after the building had been constructed… so ..yes I would definitely say that this document will contribute in the effective implementation of local building regulations*."

In the same manner there was a sheer feeling of common agreement between the stakeholders that the framework as proposed would motivate stakeholders of the building site in implementing the building regulations beyond what they have been doing. This was for example traduced in the comment made by CFG09 when she said "This document is really good. "*I think that it empowers and motivate us all. I mean what usually make us ignore laws is the fact that everybody ignores it. It is like a chain event. This document reminds us all what we should do and now I can look at it and say to my architect or engineers that sir you have not abided by the regulation here or there and because the document or the prescription will be there to show what I am saying he will not argue. Yes it is really good. The framework will work for us for sure*".

- **The difficulties in assessing the framework and proposal to improve the developed framework.**

Some participants expressed their difficulty to assess the framework as in their opinion diagrams could go a long way to illustrate the exact idea that was being conveyed. This view was encapsulated within the intervention of VFG04 when he sated "*you know engineers are good with diagrams rather than with texts honestly and I thought that some sort of diagrams to explain more could be helpful may be you should think about it"*.

In the same manner, in the evaluation process one participant insisted that the length of the framework was an issue and proposed that it be either shortened or divided into various parts. That view was summarized in this comment "*this document is absolutely justified and will transform our ways of working, but when you will actually start to use it I think that there is going to be difficult due to its length. Because in this form it is not easily useable, no I don't. I believe all the ideas are great, but you can't use such a*

lengthy document on your desk throughout the project. I think it could be better to divide the document into four so that at each project phase one document only is in hand".

In my analysis of the suggestion made by participants, I concluded that whilst it may be a good idea to reduce the length of the document the suggestion to divide the framework into several distinct and independent parts was not sustainable, particularly as the collaborative working element require a permanent update and follow up with possible cross referencing and activities taking place at the same time.

8.3.2 Results of the quantitative data gathered

a) Assessing consensual opinions about the need for the developed framework.

The questionnaire was used as further triangulation method in reaffirming the findings drawn from the conclusion of the general data gathered and analysed in the course of the validation focus group. Although it was emphatically indicated in the earlier research that there was a need to develop an instrument that could enhance the implementation level of building policies it was considered that a further verification through the assessment of the opinions of the subjects being studied will be necessary to validate this finding (respondent validation) as suggested by Silverman (2006). The exercise revealed that participants overwhelmingly agreed with the research findings that the need for the developed framework was justified with about 82% agreeing that it was an excellent idea and the remainders 2 participants (18%) rating the idea as "very good" on the grading scale. This statistic shows the extent of the agreement level, particularly as participants were also given the opportunity to grade their answer as either poor or fair in addition to the very good and excellent options. The result is highlighted in the below pie chart.

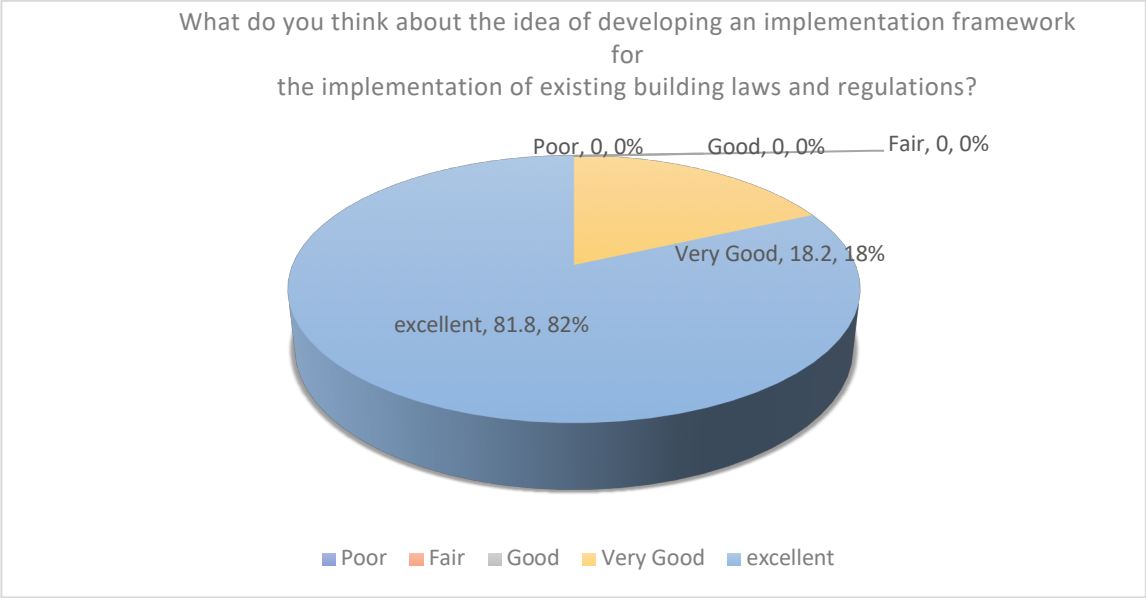

Figure 36: Evaluation of Participants' opinions about the need of a framework

b) Assessing how well the framework would ensure that stakeholders of the building construction projects give better considerations to safety, comfort and sustainability issues in relation to existing laws and regulations.

In their assessment of the framework, 7 participants (63%) responded to this question with a high positive return by grading their view as excellent to indicate that the framework would be a trigger for effective focus on the highlighted issues by all stakeholders. 1 participant (9.1%) suggested that it was a "very good" suggestion and 3 (27.3%) ranked the suggestion as "good". This result suggests an overwhelming positive answer to the question. The replies to this question are summarised in the below pie chart.

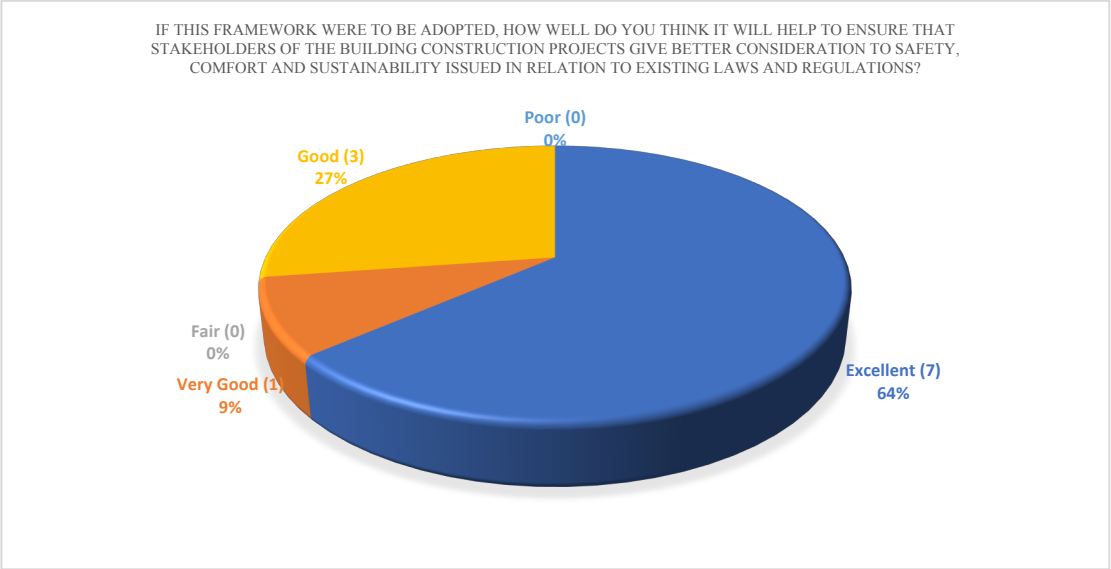

Figure 37: Evaluation of participant's responses to question 5a

c) Assessing how effective the framework could be in improving the overall quality standards observation and in implementing building laws, regulations and policies

With this assessment 63.6% of participants were of the opinion that the framework will contribute in improving the overall quality standards and implementation of existing building regulations. That view was also shared by 27.3% who were even more impressed as they rated it as excellent. The overall results are displayed within the below chart. These results indicate the participants' agreement to the usefulness of the framework in the remit of the issues identified in the question asked.

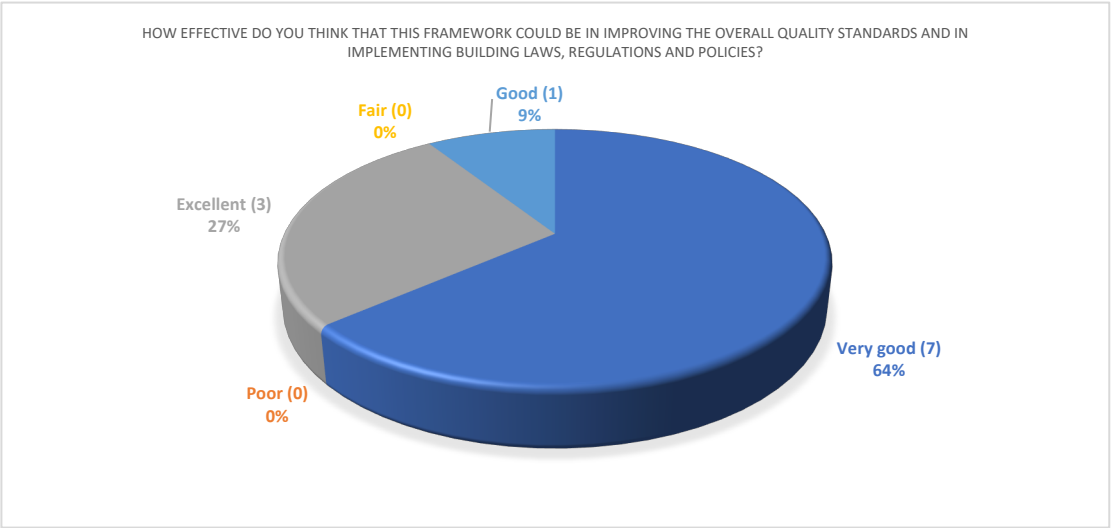

Figure 38: Evaluation of Participants' responses to question 5b

d) Assessing how well the framework could ensure efficient respect of norms, implementation of laws and regulations during the building construction life cycle

The opinions expressed by participants about the usefulness of the framework in ensuring that building policies are effectively implemented traduced their positive perception that throughout the building construction cycle process, the proposed framework would ensure efficient respect of norms as well as the implementation of current regulations. In term of scale ranking, 72.7% of participants ranked it as very good in addition to 18.20% who ranked it as excellent. 1 participant assesses it as good as shown in the below chart.

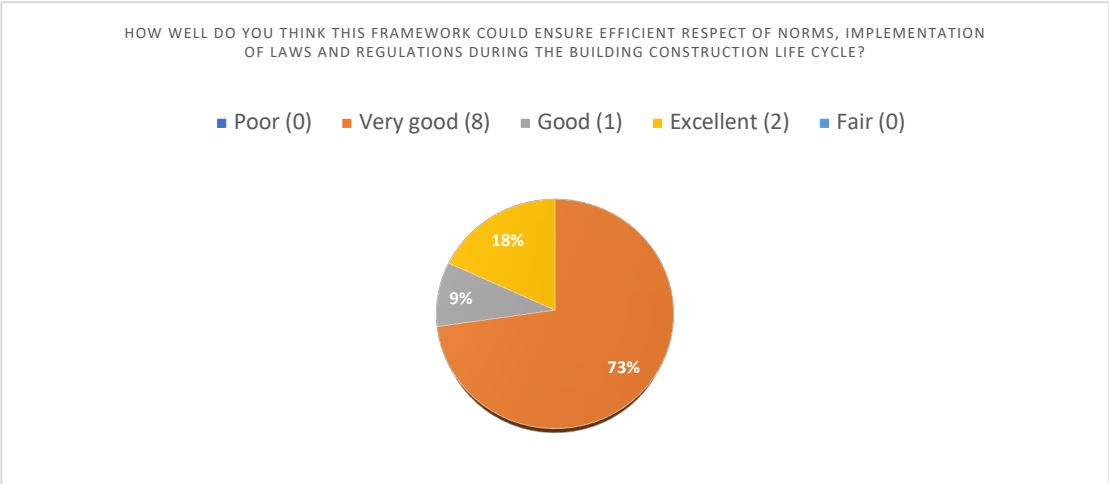

Figure 39: Evaluation of participants' responses to question 5c

e) Assessing to what extent the activities and tasks proposed in the framework captured and integrated the concept of implementation of norms, laws and regulations in the construction process

Participants unanimously agreed at various scales that the proposed framework has integrated what they understood to be the concept of effective implementation of norms, laws and regulations in building construction. The participants agreement is evidenced by 90.9% of responses ranked as Very good with a further 9.1% ranked it as excellent. None of the participants thought that for this purpose the framework was average or poor.

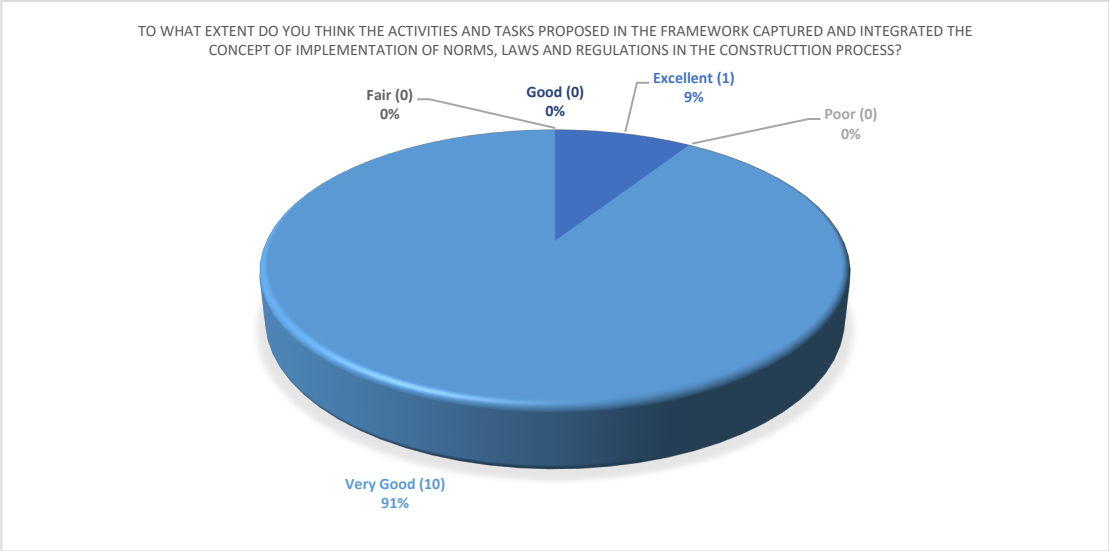

Figure 40: Evaluation of participants' responses to question 5d

f) Assessing whether beyond the intent of leading to effective implementation of building policies, the proposed framework would bring more comfort and safety in buildings than is currently experienced;

Participants to the vast majority agreed that the framework was beneficial and that if adopted it would contribute to the construction of safer and more comfortable buildings. In fact, more than 80% of participants opined that this was either an excellent or a very good idea and the remainder of participants (just below 20%) were of the opinion that it was a good idea. On the grading scale, none of the participants thought that the idea was either fair or even poor. The result is summarised in the below chart.

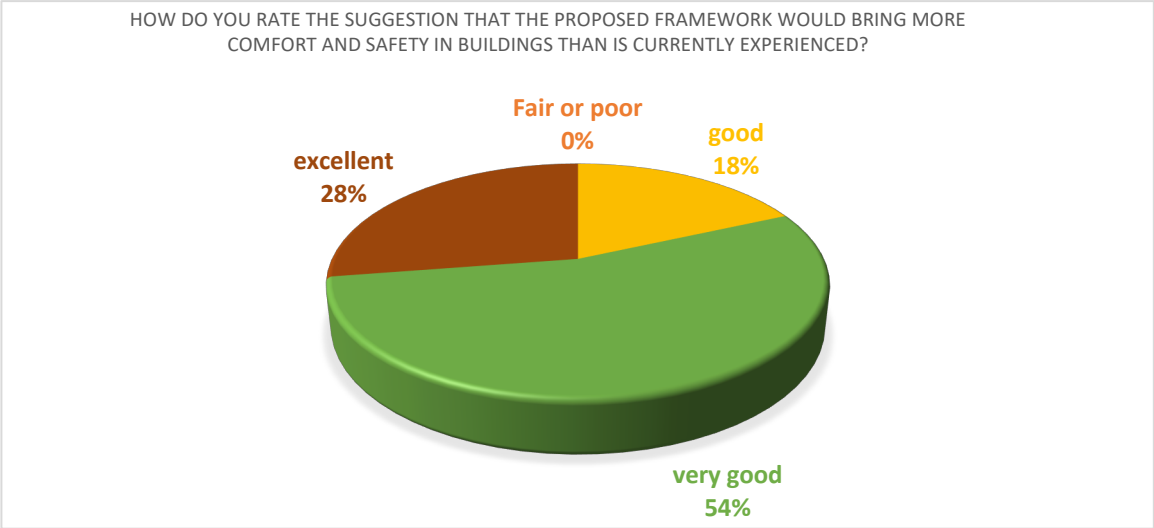

Figure 41: Evaluation of participants' responses to question 5e

g) Assessing whether the proposed framework would improve the existing practices on site and enhance the implementation rate of existing building laws and regulations

The evaluation activity revealed through the survey questionnaire that the framework was fit for its purpose as all participants unanimously agreed that the tasks and documents prescribed within the framework would lead to the effective implementation of building policies. That perception was recorded as excellent by 81.2% of participants whereas the remainder graded the statement as very good. None of the participants thought that the proposal was either poor or average.

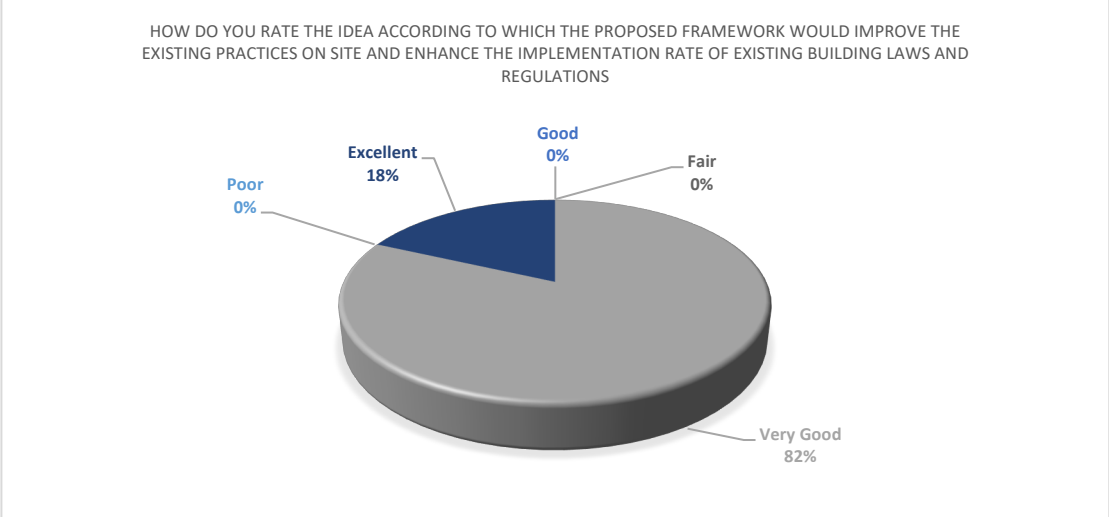

Figure 42: Evaluation of participants' responses to question 5f

h) Assessing whether the proposed framework would set clearer processes and limit the scope of corruption in the building process.

The data gathered during the research highlighted that non-existing and unclear processes along with corruption were significant factors to non-implementation. The proposed framework sought to address the issues and having considered the instrument, participants overwhelmingly assessed it as fit for that purpose. The entire population of participants ranked it as Very good (63.6%) or Excellent (36.4%) as shown in the below chart.

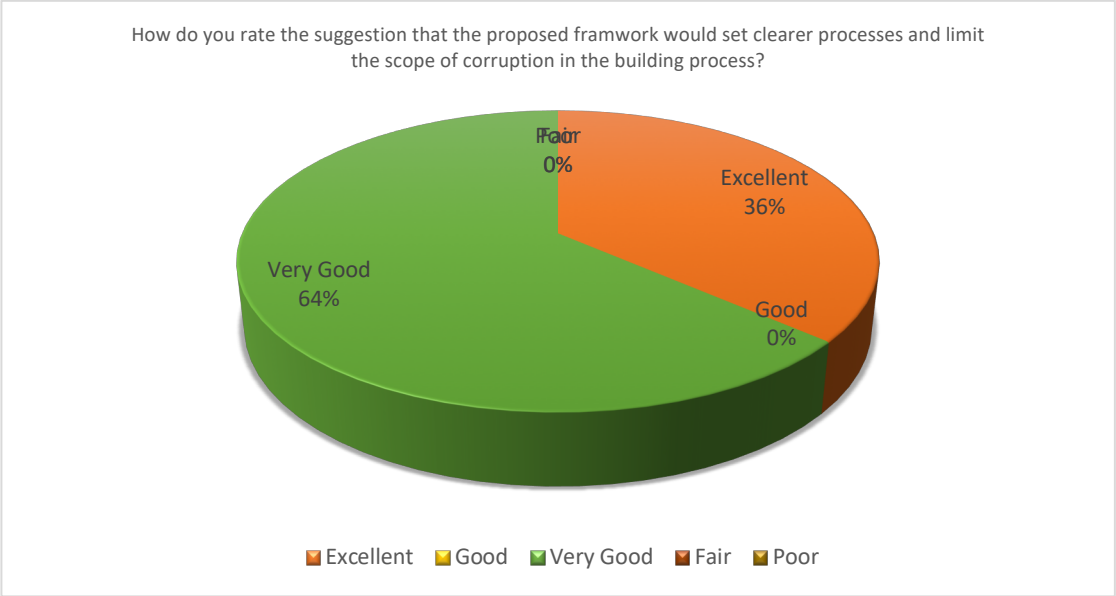

Figure 43: Evaluation of participants' responses to question 5g

i) Gathering suggestions and scope for the improvement of the proposed the framework as gathered from the responses to the open-ended questions (6 to 10).

Overall the participant's evaluation of the framework through the qualitative and quantitative methods discussed above is captured and summarised as shown in the below figure 42 and it reveals that they predominantly perceive the framework as successful given the strong level of agreement expressed.

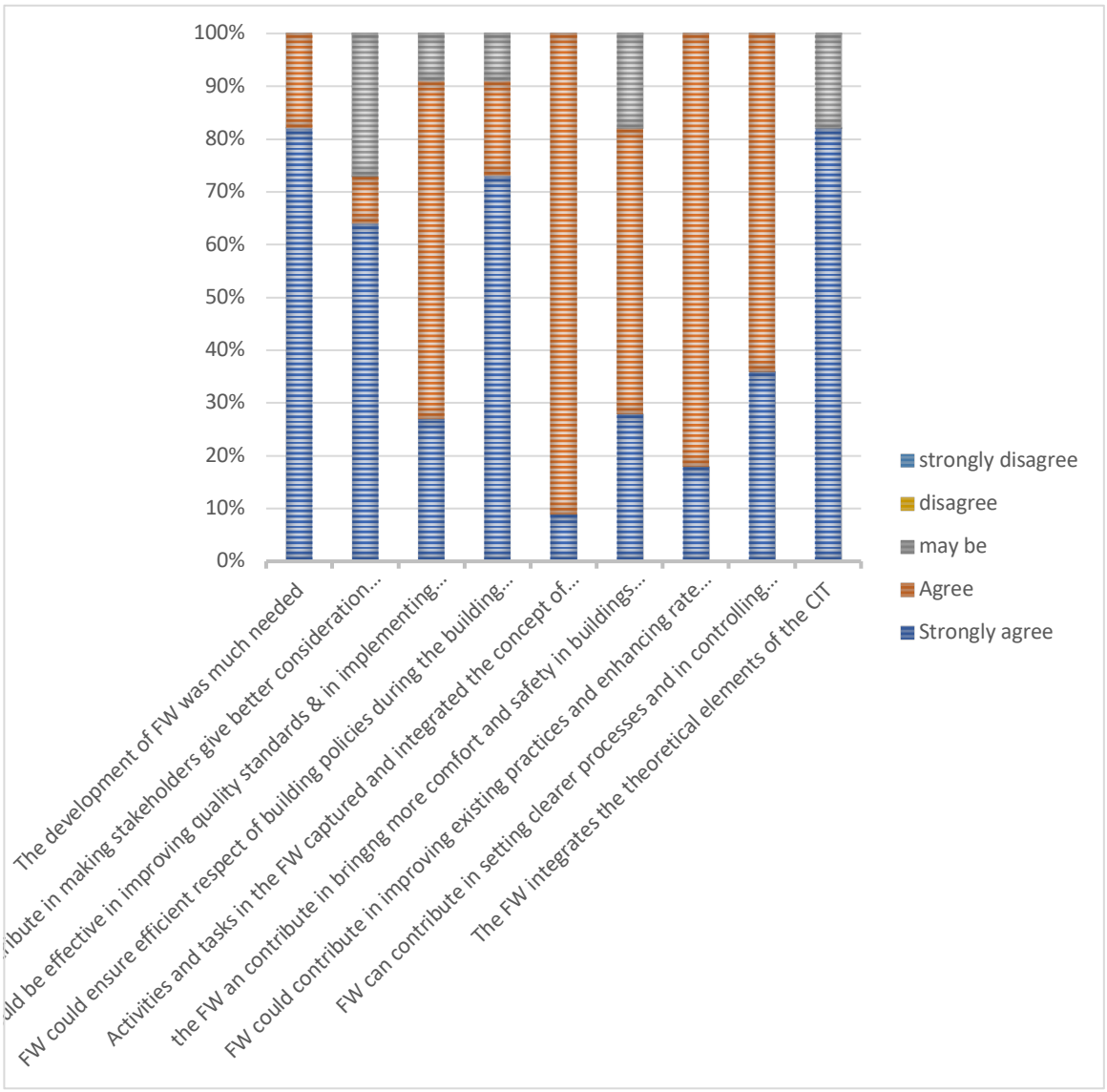

Figure 44: Stakeholders' opinions on the framework

- Suggestion for the Adjustment of the framework

In the open-ended questions of the evaluation questionnaires as well as from the focus group discussions, several participants were of the opinion that the proposed framework would have a higher impact if suggestions were made for architects to effectively supervise/monitor construction work during all phases. They explained that in practice, most architects merely design the project and once the local authority has approved the plans they are not keen on monitoring the projects. Those views accurately reflected the comments expressed by several participants (architects) during interviews and focus group discussions that they were unable or unwilling to be fully engaged with the control and supervision of work throughout the project's life mostly because of the

project owners' inability to pay for the service. They argued that the general level of poverty and costs of building material meant that projects owners could only rarely employed suitable architects to discharge the supervision mission. In the light of this proposal, it was noted that in general, in developing countries as shown by the data analysis carried out in Chapter5, building construction sites were likely to be under the supervision of a suitably qualified engineers or architect. It was therefore proposed that legal and insurance responsibilities be placed upon any suitably qualified practitioners who supervises or authorises the completion of any stage so as to put more pressure on them for compliance. In the framework, more duty is therefore delegated to engineers, architects and professional regulatory bodies in this respect. Costs has not been taken into consideration as the framework is above all a best practice instrument.

Also, participants thought that the length of the framework was above what they expected and proposed that the number of activities included be reduced, particularly as the whole framework is rooted within the RIBA Plan of work. They thought that it was not necessary to include tasks which have already been prescribed within the RIBA plan and as this was a mere duplication. They suggested that at all times the RIBA Plan be used in conjunction with the Framework for Effective Implementation of Building Policies in developing countries. To be successful it was also suggested that a specific strategy be put in place by the regulators of the order of architects and engineers to ensure that the RIBA Plan of work is systematically followed by their members in their various projects. The final version of the framework has been adjusted to reflect this item.

8.4 Chapter Conclusion

The aim of this chapter was to offer the chance of an initial evaluation of the Framework for Effective Implementation of Building Policies in Developing Countries, knowing that further substantial evaluation and validation would be carried out through its practical use and possibly in future research. The methods and results of the qualitative and quantitative research used was described and the difficulties in assessing the framework identified. Overall, participants invited to the evaluation exercises agreed that the developed framework breaks new ground with respect to the manner with which developing countries ensure their existing building policies are implemented at an enhanced rate. The evaluation panel overwhelmingly assessed the components and

structure of the framework and agreed that theoretical factors identified as conducive for effective implementation of the building policies have been included in the framework development. It also agreed as shown in the analysis of the data collected that the tool was in the participants' opinion fit for its purpose. As judged by the evaluation team it is apparent that adherence to the developed framework will ineluctably lead to the substantial improvement of developing countries ability to play their part in promoting achieving a balance between the global agenda in global warming and economic growth through and betterment of their population wellbeing in the built environment. The instrument developed is assed as holding potential for innovation and could contribute in effectively implementing the existing building laws and regulations whilst inspiring the development and adjustment of future policies. The next chapter discusses conclusion and recommendation of this thesis.

CHAPTER 9: CONCLUSION

9.0 Introduction

This chapter brings the investigation to its conclusion and outlines the recommendations for further research. The overriding aim of the research study was to develop a strategic instrument that can help in achieving effective implementation of building policies in practice in developing countries. To achieve this aim, a desktop review of existing building policies of selected countries was carried out. The research study also proceeded through a case study approach with a mixture of qualitative and quantitative data collection and analysis. This approach was designed to have a broader understanding of causes of poor or non-implementation of existing building policies and to consider how best to overcome the observed challenges. The outcome of data analysis associated with pre-existing theories of effective implementation of policies informed and guided the model design and development. The framework ultimately designed purported to plug the identified gap by offering a strategic instrument that could drive the practice and processes in the direction required for effective implementation. This concluding chapter is made of five sections. The first section (9.1) summarises the research, whereas the second section (9.2) covers the contribution of the study to the implementation science. Section 9.3 highlights the limitations of the study and section 9.4 which precedes a concluding remarks section discusses the future research directions and recommendations.

9.1 Summary of findings

This section summarises the research findings and highlights how the research objectives were met. This is achieved through a review of each of the four objectives set at the beginning of the inquiry.

Objective 1: Review the current situation of building laws and building regulations in specific sub-Sahara African countries and the extent of their implementation.

This objective was achieved by a thorough review of current building policies in

Nigeria, Ghana, Cameroon and South Africa. The review described in Chapter three of this thesis revealed that Nigeria and South Africa had excellent modern building policies similar to those observed in developed countries with clear requirements with respect to sustainability. The building policies in these two countries are compiled within prima facies first class building construction and building energy codes supported by other policy documents. However, from the literature review about both countries it transpires that the beautiful laws and regulations as well as the published standards are not effectively implemented (Twum-Darko & Ntombizodwa Mazibuko, 2015; Windapo, 2012). The inadequate implementation outcome is shown as emerging directly from the poor strategies adopted in practice. Several other causes are indexed to the failure observed and much of those causes have to do with the inadequacy between the adopted policy and the local realities, poor or inexistent processes characterized by poor collaboration between stakeholders, ignorance of policies by the general population along with the inadequate financial and human resources all identified as prime factors. The review also revealed the other aspect of building policies in developing countries through the case of Cameroon and Ghana where the building policies are assessed as sub-standard with no active inclusion of the strategies related to the international sustainability agenda. The analysis carried out in chapter three and Chapter six of this thesis shows that in addition of being poor in nature building policies of these countries are not effectively implemented (Ahmed and Dinye, 2011; Boamah et al, 2012; Bikoko and Tchamba, 2015). The causes identified as justifying the failure are similar to those evoked above in the case of Nigeria and South Africa and include uncoordinated policies, weak powers of the implementers, poor collaborative framework amongst various stakeholders, ignorance of stakeholders and inadequacies of the conceived policies. In general, there is an insufficient policy

strategy for effective implementation of building policies in these jurisdictions. For instance, the policymakers have failed to include instruments which can trigger the stakeholder's interest and motivate their adherence to the policies. Wrong strategies and cultural resistance to change strengthened by corrupt practices hampers the effective implementation of building policies.

Objective 2: Explore the quality and barriers to effective implementation of those existing laws and regulations.

Like in any meaningful endeavor, it was accepted that without adequately identifying the root cause of a phenomenon it may not be possible to make objective propositions for a better prognosis. In that perspective, adequate steps were taken to identify the substantial causes of the poor policy implementation revealed by the desktop review of relevant material of several countries. That exercise was pursued through the quantitative and qualitative data collected and analysed as reported in chapters five and six of this research. The study identified that there was myriad of barriers to the reported policy implementation failure in developing countries. Twenty-five of those barriers/causes were classified in two sub groups, one regrouping the barriers internal to the policies and the other regrouping the barriers external to the policies. The later are the most extensive. The twenty-five causes/barriers were identified and shown in table 22 below.

Barriers external to the Policies	Barriers internal to the policy
1. Corruption 2. Ignorance of laws and regulations by all stakeholders 3. High costs of building constructions 4. Inadequate training of stakeholders 5. Qualitative and quantitative understaffing 6. Lack of professional integrity 7. Authority's permissiveness 8. Administrative bottlenecks 9. Poor planning and building inspection/control regime 10. Poor mentalities and cultural resistance 11. Lack of political will 12. Self-construction practice 13. Lack of planning and record 14. Trading of sub-standard building material 15. Political interference 16. Low salaries of staff of local authority and central government 17. Leadership infight	1. Lack of reward mechanism for compliance within the policy 2. Unrealistic policy goals and inadequate context 3. Uncoordinated policies 4. Unclear policy goals and content 5. Excessive discretion policy implementers 6. Inadequate building policies 7. Lack of collaborative framework for stakeholders

Table 22: Internal and external Factors Affecting the effective Implementation of Building policies

Overall, according to the number of references made through the various sets of data collected, the most salient factors unanimously identified as such by the entire community of stakeholders are the pervasive corruption and the ignorance of stakeholders. Those two factors associated with budget constraints, extensive qualitative and quantitative under staffing and lack of collaborative framework or collaboration between stakeholders simply render the implementation process impossible. The root cause of the failure is believed to be incrusted within the poor policy making as the existing policies show no evidence of thoughtful process and

indeed appear often inappropriate for the targeted countries.

Objective 3: Explore a best practice approach to achieve successful implementation of the existing laws and regulations in developing countries

In the data collection and analysis process, a pro-active approach was taken as participants to questionnaires, interviews and focus group discussions were systematically invited to express their opinion on the potential ways through which the failure to implement existing building regulations could be addressed. In a sort of parallel activity, participants all appear to evoke various solutions when discussing the barriers. Several solutions were identified in the analysis process and the most salient are displayed within table 16 in Chapter 6 above and reflect the local context. In considering how best to address the shortcoming identified, a full review of existing building policies and implementation process of several countries was made. It was crucial to consider the suggestions made by theorists of the implementation science and also to observe how other jurisdictions managed to successfully deploy their building policies in practice. That quest led us to the review of building policies and practices of jurisdictions such as England and Japan where it unanimously agreed that their building policies are effectively implemented. The review revealed the approach undertaken in those countries to achieve the target. It transpired that the strategies adopted in the implementation process closely mirrored those advocated by theorists such as Meeus & Delarue (carrot, stick and tambourine). Good notice of the best practice approach adopted in those jurisdictions including adhering to the RIBA Plan of Work, establishing an adequate collaborative framework as advocated by the CIT researchers and the identification of implementation drivers and their execution for successful outcome. Combination of the theories on how to effectively implement policies and

practice observed elsewhere guided the ultimate framework development.

Objective 4: Design a strategic procedure or tool aiming at achieving a much successful implementation of existing building regulations in the sub region.

Whilst several policy tools have been developed over the years some in the form of framework, other in the form of model and some other in the form of theories, the literature review did not identify an instrument specifically designed for the implementation of building policies in general and of those policies in developing countries in particular. Drawing from the conclusion of the data analysis and taking into consideration the theorists' position on the various tools, a decision was made to develop a framework in order to effectively reach the research aim. The option to go for the framework was fully justified in Chapter seven of this thesis. Following a scientific method, the framework was developed with full consideration to the drivers of success in other jurisdictions. Accordingly, it stems from the analysis of the data collected in the UK through interviews of building professionals and implementers of building policies that their success was largely attributable to adherence to the consistent and coherent RIBA Plan of Work 2013. That framework on its own was considered as solving a big chunk of the issues identified as hampering the effective implementation of building policies in developing countries, namely the lack of uniform process. It was judged that by developing a framework that leans on this model would have a better chance to yield the sought-after outcome. With the RIBA Plan of Work established as the skeletal of the proposed framework, other consideration drawn from the data gathered on the local context associated to the best approach recommended by practitioners such as Fixsen et Al and the theory content of the CIT were used to complete the conception of the FEIBPLR in developing countries. The

framework was considered as fit for its purpose and that view was overwhelmingly agreed by the committee of selected experienced stakeholders of the built environment field in the case study country as shown in Chapter eight of this thesis.

9.2 Research Contribution

In the course of this research a large number of publications related to the topic of policy implementation was accessed and it was noted that many theories have been published to help promoting effective implementation. Those theories (the term "theories" is used to collectively refer to published models, theories, and frameworks) were reviewed and it was found that there was a gap as those implementation theories have not specifically been directed to the building construction field in general. Indeed, from the literature review, it does not appear that specific attempt has been made to apply the existing theories or to develop frameworks to deal with the issues affecting the implementation of building policies in African developing countries. The research resulted in the development of an implementation framework that offers an overarching approach to promote not only implementation theories in the context of building construction, but also to tackle the issues surrounding their effectiveness in practice in developing countries where due to contextual factors, policies adopted and allegedly implemented only yield at an incredible low and infidel outcome compared to results observed in other jurisdictions. Scholars and practitioners have previously regretted the lack of a theoretical framework within which policy implementation can be examined (Van Horn & Van Meter 1974; Schofied 2004) and this study has attempted to plug that gap in the literature and sets the ground for further research which could perfect the basis established within this research.

In addition to the above overriding contribution to knowledge there are further contributions that can be highlighted in two forms, namely the contributions considered as practical (9.2.1) and the contribution from the methodology point of view (9.2.2).

9.2.1 Practical Contribution to knowledge

- The deficiencies and inconsistencies of current building policies have been outlined, together with the causes and suggestions on how to fill the identified regulatory skills gap through effective policy making.
- A design for an effective and adequate collaborative framework has been produced and could inspire stakeholders to engage with and test the process in order to fine tune and improve it where necessary. On its own merit, the collaborative element of the developed framework curtails the issue of non-existent process and brings a much-needed transparency in the day to day practice of stakeholders.
- The shortcomings of the current national educational system, particularly with reference to building policies have been outlined and brought to the attention of the policymakers. It is anticipated that this contribution would trigger a deeper review of the educational framework in this area.
- The deficiencies of the policymaking approach of the case study country have been outlined and could trigger a thought about how best to make the building policy attractive and motivate the stakeholders for greater combination. Specific implementation strategies have been recommended and as such contribute to the knowledge in that sense.
- Also, a further contribution of this study can be seen in the exploration of allowing stakeholders to pull their skills and resources together to enhance their interaction with each other in delivering compliant, safe and sustainable buildings at affordable costs.
- The study is expected to inform researchers and stakeholders within government (policymakers and implementers) on alternative approaches in re-thinking or delivering the building policy outcomes with greater efficiency. In the same context a further contribution from this research can be perceived from the effect it may have on the decision makers within the central government formulating standards for the development and implementation of building regulations frameworks for service delivery.
- This study also contributes by assisting decision makers to understand the purposes, dynamics and reasons for what, why and how building policies and

their implementation strategies succeed or fail in contexts similar to theirs, and how solutions can be provided.

9.2.2 Methodological Contributions

The major methodological contribution of this research is within its ability to combine elements of building construction effectiveness (the RIBA Plan of work) and implementation research to enhance the implementation of building policies (the CIT and the Fixsen et al recommendations). This was achieved through the inclusion of the strategy for effective collaboration and the insertion of specific drivers within the developed framework rooted in the RIBA Plan of Work 2013.

The effective implementation framework developed within this research provides a systematic and pedagogic approach to implementing building policies in developing countries such as Cameroon. This approach can inspire the development of similar instruments in other areas of studies in the field of policy implementation. A validated position in this research is that designing and developing a framework for effective implementation of building policies as done here testifies of the understanding of how the three tenets of effective policy implementation (carrot, tambourine and stick) materialised through collaborative working, definition and adherence to clear processes, economics advantages and coercion via the enforcement of implementers' powers can enable the effective implementation of policies in the building construction field. This research consequently contributes to knowledge by shedding a new light on the variables which influence the implementation of building policies in developing countries. This is because the inquiry evaluated and integrated the important methodological variables defined by various practitioners as factors that are necessary for effective implementation of policies in general. The framework developed should control and/ or limit the negative factors and thereby push stakeholders towards compliance and adherence to policy goals.

9.3 Limitations of the research

The conclusions drawn from the investigation conducted in this research were deducted mostly from the qualitative data collected in Cameroon and analysed. A research heavily weight in favour of qualitative method has both advantages and limitations. The

principal advantage as submitted within chapters four and five of this research is that with qualitative approaches detailed information on people perceptions both as individual and as part of a group can be obtained and the non-verbal cues associated with their contributions can give away important features of the situation or issue under investigation. That was very useful in the context of this research to understand the functioning and implementation of building policies in Cameroon. However, a specific limitation of qualitative data collected through focus group discussions and in-depth interviews resided in the reduced size and geographical sample used. Indeed, due to financial constraints (as the research was self-funded), the practical research studies in this investigation were limited to one case study. It was therefore not possible to go beyond the desktop review of building policies of other developing countries considered in the research (Ghana, Nigeria and south Africa) to collate data in their respective environments. It is considered that due to this limitation the conclusions of the investigation could be sensitive to those constraints. Although the sample of participants was based on representative sampling, the inability to gather hard qualitative data from more than one country was considered as a limitation which could affect the generalisation of the findings. Nevertheless, the research based on published work of other researchers came into play in the triangulation exercise to validate the conclusions of the research. It is suggested that this limitation could be overcome by multiplying similar researches in other jurisdictions.

With respect to the design research methodology used in this investigation, it is highlighted that the findings are subject to the limitations of the research circumstances. The research was significantly hampered by the lack of data in the case study country. Whilst there is a national institute of statistics in the country, access to their data or even opening a simple communication with staffs or executives of the organisation proved an impossible task. The lack of available data as identified was therefore prejudicial as the research heavily relied exclusively upon the data collected through interviews and focus group discussions organised during the inquiry.

The other possible limitation of the research stems from the difficulty in ensuring that an active implementation of the outcome of the research would follow. Indeed, one of the causes identified as adversely affecting the effective implementation of the building policies in developing countries was the poor or inexistent enabling context. Given this

material fact it could not be possible to ascertain beyond reasonable doubt that the developed instrument would be effectively deployed on the ground. This limitation could be overcome if the central and local governments urgently adopt and adequate strategy to create a conducive environment.

9.4 Future Research Directions and Recommendations

9.4.1 Future Research directions

The conclusion of this thesis opens many interesting research directions for further work. The following future research directions are proposed:

1. Future research should build from the Framework for Effective Implementation of Building Policies in developing countries to reflect on the three variables (CIT, Fixsen et al drivers and the RIBA Plan of Work) and conceptualise an implementation system beyond the three variables.
2. Further research should be pursued on the same topic but with samples from other developing countries to confirm the generalisation factor.
3. Further work should also explore other methods that soften the causes associated with ineffective implementation of policies in the built environment and contribute to the building of methodology in this specific area.
4. Furthermore, the evaluation process of the framework (theoretical and practical) should be assessed in a live environment to ascertain its full effectiveness in support of its generalization. Although the initial evaluation by the selected experienced stakeholders is positive with them opining that the instrument would be effective in favouring effective implementation, a real-life test would shed greater light on the practicality and limitations of the instrument.

9.4.2 Recommendations

Now that a framework has been developed and assessed as capable of leading to the effective implementation of building policies in developing countries, it is recommended that the various stakeholders engage in meeting specific pre-requisites in the line of those described within the four phases of the Replicating Effective Programs (REP) framework described by Kilbourne et Al (2007). Accordingly, if it can

be assumed that the work of this thesis has covered the pre-conditions phase (as in the research activities the needs and barriers have been duly identified), the pre-implementation phase would be discharged by the central and local authorities who should put in place an adequate working group to ensure that the prescribed steps of the FEIBPLR are competently observed. In the same perspective, building professionals, central and local authorities and other relevant organisations must refine the skills available and urgently put in place a strategy and deliver technical training and assistance to the workforce on building sites, knowing that it may take a few years for the prescriptive steps of the framework to be fully embraced. Doing so would discharge the implementation phase of the REP framework. Finally, as to the maintenance stage, all categories of stakeholders must continually monitor the delivery and record areas of needs through regular evaluation process, so the strategies can be permanently updated to achieve greater impact.

Overall, in the quest of advancing the knowledge and understanding the policies of the developing countries built-environment, further areas of investigations are recommended and include the following areas of work:

- Exploration of international planning and building control regimes in relation to levels of collaboration and analysis of successes/failures as part of attempts to achieve effective implementation of government building policies as a means of establishing lessons that could be learned from international best practice.

- Building upon the framework resulting from this research, establish how interdisciplinary theory might be utilised through higher educational initiatives in the engineering and policy field to aid gradual disciplinary collaboration in the building policy making and implementation exercise.

- Develop initiatives aiming at popularising building laws and regulations with an adequate reward system to stimulate interest and adherence.

- Investigate how the type of process detailed within the developed framework might begin to be introduced through existing practice in addition to the built-environment students.

- Develop and implement a national strategy for building capacity in all areas of the built-environment namely with regards to the technical knowledge of practitioners, staffs of the local authorities and policymakers.

- Revamp the entire building policies by developing and adopting specific building codes placed under the supervision of a single coordinating authority with clear prescriptions and uniformed processes and procedures.

9.5 Concluding Remarks

The framework lays basis for a powerful and dynamic collaborative working in the implementation mission by setting an effective mixture of top-bottom and bottom-up dynamic which conjugate together to trigger an effective implementation on the ground. The framework with the prescribed documents and activities was designed to provoke that dynamic, bearing in mind that "both central policymakers and local actors on the ground are important for successful implementation" (Cerna, 2013).

The bedrock of the successful implementation of any proposed solution depends on the strength of the institutions. That principle will remain the same for the successful implementation of the developed instrument. Government institutions must be strengthened in term of capacity building, enforcement strategies, relevant regulations, fighting against corruption in public services and regulation of building materials (Tuekam Hotouom, 2015). On this basis it is pleaded that whilst effort should be made to put the created framework in a real-life context to fully appraise its effectiveness, the central government should take a lead in both research and dissemination of the findings for a greater impact. It should always be born in mind as submitted by Fixsen & Blasé (2008) that even if the framework as developed leads to effective implementation of building policies it will not be enough to achieve "socially significant outcomes". It must be supported by the enabling context factor as well as effective innovations which all significantly depend upon the political will of those in powers. Moreover, because a

pre-requisite for effective implementation of all policies is a sound and clear policy, in developing countries a lot should initially be made to sort out the policy ambiguity.

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