

Identifying Land Management Tools for the Mitigation of Climate Change Impact on Property Investment.

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Abstract

Climate change is still impacting negatively on property investment and could be worsened by our land use practices visually observed. It is believed that sustainable Land Management would involve various tools used in mitigating and cushioning the impact of climate change on property investment. This piece aimed to identify various land management tools for the mitigation of climate change impact on property investment. With the aid of review of various policy document from three different countries using the Grounded Theory to allow an in-depth questioning and intuitiveness of the researcher, the findings included that the various policy document revealed land management tools such as, land use policy, land taxation, land administration etc. These tools are sustainably incorporated in the policy document of other countries but very few are existing in Nigeria policy document not recognising sustainability.

Keyword: land management tools, mitigation, climate change impact, sustainable development and property investment.

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I. INTRODUCTION

Climate change is on the increase with its attendant impact ranging from flooding, rise in temperature etc. Climate change could be caused by anthropogenic (human) and natural forcings or processes. Whichever the process, the anthropogenic exacerbates and increases the impact of climate change. All over the world, over 250 climate change anomalies are experienced on a yearly basis from 2009 to 2016 as observed and recorded by the National Oceanic and Atmospheric Administration (NOAA) which is an American scientific Agency within the United States department of commerce.

An analysis of the World Bank (2014) and Ighobor (2012), shows that from the 2012 flooding, about 360-363 people died, 2 – 4 million people displaced, 12 states badly affected, \$9 billion damages and economic loss in excess of \$7 billion amounting to \$17 billion, 618,000 houses destroyed, loss in life and productivity, 1.4% of Gross domestic product and \$110 million for relief.

The extent and intensity of the impact of climate change felt by property investment is highly influenced by the location of the property. A paper by Kropp (2012) with title as, 'influence of flooding on the value of real estate revealed that lower real estate investment value is as a result its location. Various authors have suggestion different measures of adapting and mitigating the effect of climate change impact with most of them recommending structural measures which supports the control of nature rather than working with nature (Birkland et al 2003). A good publication by Kakulu and Brisibe (2014); Adelekan (2016) suggested the use of structural measures such as proactive adaptable building designs by Architects and Real Estate Managers to increase city resilience for flooding risk management impact. Few authors of which most of them are in the agricultural discipline have categorically suggested measures that supports working with nature rather than controlling nature. Working with nature is synonymous to the preservation and conservation of natural ecosystems and their services such as the preservation of land with unique attributes (wetlands) see Sustainable Development Goal (SDG) 11.4.

Land preservation and conservation is assumed to be of little interest in Nigeria especially Rivers State as investors including the state government keep carrying out various activities and developing buildings both permanent and temporary on wetlands within the city of Port Harcourt. These activities have caused continuous increase of the inner city flooding in most cities. This flooding would have reduced if natural receptacles were not converted to development especially impervious sites. The 2012 catastrophic flooding in Nigeria, even

though not directly linked to climate change, would have had a milder effect on the people, community and systems if the land management systems especially land uses were appropriate. This is just a tip of an iceberg. Who knows what will become of Nigeria in the near future if priorities relating to land management practices are not rightly placed.

Although various authors such as Burby and French (1981); Puszkin-Chevlin, Hernandez and Murley (2006); Brody, Zahran, Maghelal, Grover and Highfield (2007); Bin, Kruse and Landry (2008) have shown in their studies that developments should not be carried out on flood plains and wetlands as the limiting developments on these areas and other forms of non-structural mitigation measures will reduce the vulnerability and exposure of real property investments and value to flooding risk and hazard. According to Suriya and Mulgal (2012), built up areas are on the increase all over the world especially impervious areas, agricultural lands and indeed water bodies are generally decreasing as a result of increased built up areas and this in effect will cause an increase in flooding of the inner cities.

In the second international conference on flood and erosion prevention, protection and mitigation, Abam, Gobo and Ede (2014) in their paper stated that flood prevention and response in urban areas must be guided by policies to ensure that state resources are wisely and prudently applied for the good of the public. In that same conference, Wahab *et al* (2013) cited by Ede and Okorji (2014) stated that flooding is attributed to poor developmental control and environmental practices. While Siegel *et al* (2011); Siegel *et al* (2013) cited in Childress, Siegel and Törhönen (2014) stated that improved risk management largely comes from improved efficiency and sustainability of land use, improved information about risks, more complete valuation of land resources and improved land management and governance all of which are land management in various capacities. Whereas previous studies have shown that the application of land management tools in the Real Estate discipline has not been fully explored despite its potentials for addressing flooding impact on real estate.

This study is an action research which seeks to identify various land management tools from global best practices that can be adopted in Nigerian policy for use by all multilevel and multi-stakeholders in the built environment for the mitigation of climate change impact on property investment. Climate change impact for this study means and focuses on flooding risk and hazard. This study will develop theory that is grounded in data and is subject to criticisms and further research.

II. CONCEPTS IN LAND MANAGEMENT

Land is anything in, on, under and above the earth where all activities on earth takes place as such it could be said that phrase the land management is not the sole preserve of any particular sector, discipline or profession. Land management is a subject for consideration by various facets of knowledge and profession like in estate management and agriculture and should be involved in since all activities of humankind takes place on land.

Several researches have been conducted on land management for which UNECE an agency of the United Nations had been involved. The UNECE (1996), defined land management as the management of land from both economic and environmental perspective which includes; farming, mineral extraction, property and estate management, and the physical planning of towns and the countryside. UNECE (1996), also see Land management as the process of putting land resources into good effect. Then Enemark (2005), defined Land management as comprehensive activities that are associated with the management of land and natural resources for the achievement of sustainable development. Furthermore, Williamson, Enemark, Wallace & Rajabiford (2010) stated that land management covers all activities concerned with the management of the land as a resource both from an environmental, social and an economic perspective.

Land management is comprehensive as it is a series of knowledge-based process that integrates land, water and environmental management to meet the space demands for human physical and infrastructural development without impairing the environment and inducing climatic hazards. Land management involves the efficient and effective use of land resources by humankind to reduce land degradation and environmental hazards for the present and future generation. From all the definitions, it can be established that land management is a sustainable development process for the effective and efficient use of land and land resources.

INTOSAI (2013), state that many current land planning and land management policies and models are based on the overexploitation of resources and on methods that have little concern for ecological balances. The land management policies do not consider past land use practices, land attributes and components and what the future impact is likely to be whether positive or negative. Land management practices should aim at promoting sustainable cities and communities by upgrading slums, instigating settlement planning and management, protect and safeguard the world's cultural and natural heritage, and by reducing death, economic losses and adverse environmental impact in cities.

Krishna (2012), in the review of the land management and administration in Nepal observed the current situation in Nepal as a situation characterised with the rapid conversion of land to concrete jungles and unplanned land management which causes threat to sustainable development. He prescribed that there is need

for major initiatives in terms of cadastral mapping, development of a geographic information infrastructure, computerized land records and national policy formulation as a tool for sustainable development.

2.1 Land Management Functions

The functions of land management are: to Maintain and enhance productivity, to build resilience and stability in economic, social and environmental systems, to Protect property from potential risk, hazard or disaster, for economic viability and for acceptability and equity participation by all (World Bank, 2006; Gabathuler, Liniger, Hauert and Giger, 2009; Motavalli, Nelson, Udawatta, Jose and Bairdhan 2013).

2.2 Principles of Land Management

The principles of land management (see Alemu 2016; FAO 2011) includes; the principle of collective efforts, the principle of comprehensive integration of sustainability, the principle of global challenge solution and the principle of local adoption. An effective land management practice requires participation, efforts and contribution of all. The effort of one without the contribution of another can threaten the system if contradictory in nature. The collective efforts of all stakeholders at all multi-levels and multi-sectors is required for the achievement of a sustainable land management which is a global challenge

2.3 Aspects of Land Management

The two broad aspects of land management are land resources management and land use management.

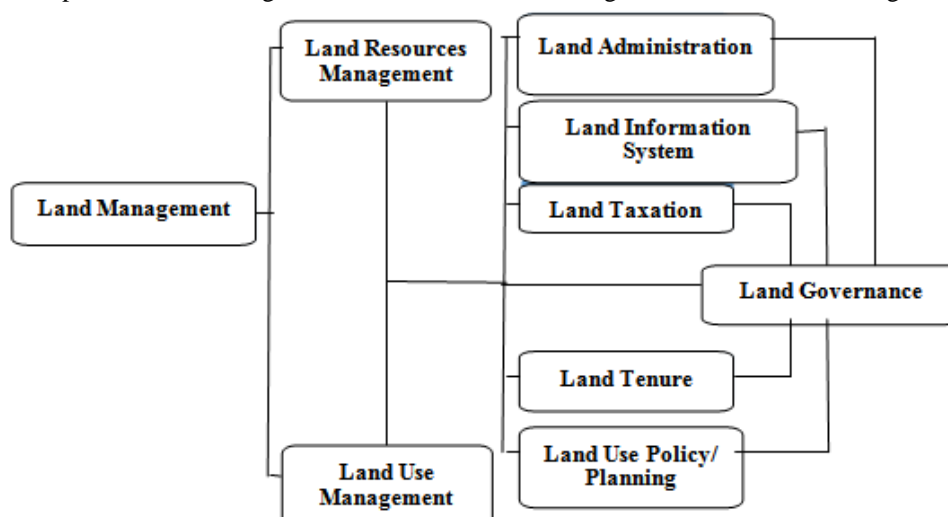


Figure 1: unpublished M.Sc research 2018

2.3.1 Land Resources Management

FAO (1995) defined Land Resources as the components of the natural land unit which includes infrastructure, biotic, physical, biotic, environmental, social and economic component as well as surface and near-surface freshwater resources in as much as they are fixed to the land unit. Then Young (1998) went further to explain that Land resources provide the basis for more than 95% of human food supplier, the greater part of clothing and all needs for wood, both for fuel and construction. From the descriptions above, it could be said that land resources are the components that are deposited naturally under, in on and above the soil including in the water bodies. All parts of our ecosystems including flora and fauna, water, biodiversity and air are all land resources as there is no end to the resources land can supply.

Land Resources Management is a knowledge-based procedure that helps integrate land, water, biodiversity, and environmental management (including input and output externalities) to meet rising food and fiber demands while sustaining ecosystem services and livelihoods (Liniger, Mekdaschi Studer, Hauert, & Gurtner, 2006). Land resources management is any procedure, input or action taken by a nation, state or community growing politically, socially, economically and demographically to stop or reverse degradation and preserve, conserve and enhance the land outputs sustainably.

The World Bank (2006) has stated that bad management are behavioural as they are incited by misaligned policies and incentives, unclear property rights and weak enforcement capacities by corruption and governance problem. It is very expedient and less expensive to prevent the depletion of land resources by incorporating local community's age-old management strategies and scientific knowledge in policies through good governance. Land resources preservation and conservation can be actualized with the uses land is subjected to. The productivity and depletion of land resources can be respectively enhanced and expedited with

use. Productive lands are becoming unproductive due to degradation from poor management. Therefore, land resources management cannot be discussed without land use.

2.3.2 Land Use Management

Land uses are used to achieve various objectives by any system or economy therefore its knowledge cannot be over emphasised. According to INTOSAI (2013), the concept of land use refers to a series of activities done to generate one or more products or services therefore land use management is needed to direct and organise various activities to reduce climate change impact on property investment and to support sustainable development. Land is ascribed to various uses such as agricultural, residential, commercial, industrial, recreational property and other special property in the Real Estate Discipline. Every land has potentials dependent on its highest and best use. Depletion and degradation of land resources sets in while simultaneously and gradually causing a change in the climate over a long period once land is not used in its highest and best form. Most land that should be used for agricultural and recreational purposes are converted to other uses See (Suriya & Mudgal, 2012) and causing impairment to the land. Land uses and land use change are one of the anthropogenic causes of climate change capable of increasing the negative effects of climate change impacts on real property investment.

Enemark (2007) has noted that the operational component of the land management paradigm is the range of land administration functions that ensure proper management of rights, restrictions, responsibilities and risks in relation to property, land and natural resources and that sound land management is the operational processes of implementing land policies in comprehensive and sustainable ways. The rights over land affects the use of land, the restrictions on certain uses and creation of responsibilities. The statement by Enemark above indicates that land management can be used as an effective tool to build capacity for flood reduction and protect natural areas especially areas susceptible to flooding within any system.

2.4 Land Management Tools

Figure 1 above was developed from the critical analysis of literature reviews. Land management is dichotomised into land resources management and land use management. Some authors examined land resources management while some examined land use management as separate entities. But the truth is for sustainable development purposes and climate change impact, both cannot be examined separately. Land management tools have been described by various authors but perhaps, they have not really identified them as tools. The land management tools for both as identified are the same and are; land administration, land tenure system, land information system, land taxation, land use planning and policy and land governance.

2.4.1 Land Information System

Land information system as defined by FIG (1995) cited in Abbas, Ben-Yayork and Naíya (2014) is the combination of human and technical resources, together with a set of organizing procedures that produce information on land in support of a broad range of managerial requirements. Land information system involves a process that uses specialized instrument and expertise to record land data. It is perceived to be a tool for land management by some Authors. According to UN-ECE (2005) cited in Abbas *et al.* (2014), "Land information System (LIS) is a tool for legal, administration and economic decision making and an aid for planning and development which consist on one hand a database containing spatially reference land related data for a defined area, and on the other hand procedures and techniques for the systematic collection, updating, processing and distribution of data. Land information system for the benefit of easy storage, information and data update, analysis, sharing and retrieval of information and data uses Geographical information system to record accurate and reliable land cadastre that includes the characteristics and components of various lands and to record land boundaries and tenure

Land information system has multiple functions that can be used to achieve an organisational objectives. It can be used as a management control for effective use of resources in an optimal way and operational control to effectively and efficiently execute a particular tasks and aid in solving complex problems of planning. FIG and UN-HABITAT (2002) in their working group investigated how spatial information and knowledge management can more effectively facilitate decision support in Urban Management in Africa and opined that Land information system will support the progressive realisation of housing as a human right through the resolution of issues of land tenure and rights. Most areas susceptible to flooding such as wetlands, coastal areas and flood plains are conflict areas that features issues of homelessness, landlessness, slums and squatter settlements which land information system with the help of historic data can be reduced.

Land information system through flood risk mapping can be employed to reduce the exposure and vulnerability of property investment to flooding risk and hazard and aid information sharing and decision making by the Government, property owner and investors. LIS display information on land by showing an interactive flood risk map that is capable of defining areas at risk and is the basis for all flood damage reduction and subsequent actions (Adedeji, Odufuwa, & Adebayo, 2012).

2.4.2 Land Tenure

FAO (2002), land tenure is the relationship, whether legally or customarily defined, among people, as individuals or group, with respect to land. Waiganjo and Ngugi (2001), Land tenure provides the legal and normative framework within which all activities are conducted. Land tenure depicts the extent and degree of land ownership ranging from various right that subsists in major and minor interests in land and property investments alike. Land tenure examines the legal or customary titles to land as higher and better titles to land means a more secured ownership rights. A secured ownership rights in land promotes sustainable land uses.

Ogolla Mugabe (1996) cited in Waiganjo and Ngugi (2001), stated that tenure rights that are certain provides incentives to land use in a sustainable manner or invest in resource conservation whether for the individual or group of individuals. Having to know the period of land holding is capable of informing the type of land use for different land parcels. Investors are capable of accessing credit from a land with perpetual tenure and highest title for a sustainable property investment. World Bank (2011), stated that the security of property rights (whether through titling or customary use) and the ability to draw on local or national authorities to enforce those rights are central to preserving livelihoods, maintaining social stability, and increasing incentives for investment and for sustainable productive land use. Strengthening national and regional development planning through good land tenure will support positive economic, social and environmental links between urban, peri-urban and rural areas (See SDG 11, target 8). World Bank (2011), in its study that applied land tenure policy to various countries discovered that secured land tenure is capable of protecting indigenous and environmentally sensitive lands and access to credit.

2.4.3 Land Administration

The process in which land access, land tenure and land uses are executed and implemented is a land administration function. FAO (2002), defined Land administration as an extensive range of systems and processes that could be formal and informal for administering land rights, land use regulation, land valuation and taxation. Enemark (2009), Land Administration Systems are the basis for conceptualizing rights, restrictions and responsibilities related to people, policies and places. The processes include land right allocation, revenue collection through taxation, sales and leasing and conflict resolution.

The processes of land administration are technical and political in nature but must work in synergy. The technicality is usually performed by an expert like in the case of the appropriate officer determining tax to be paid while the political aspect is by the Government of the day. The refusal of building development on wetlands by the Ministry of Urban development is a land administrative function that aids sustainability. The efficiency and effectiveness of land administration system will aid sustainable land management practices capable of reducing flooding risk on real property value. For example, construction of a building on flood plains could attract huge tax that is capable of stopping such development. UN-ECE (1996), stated that a good land administration system will improve urban planning, infrastructural development and support environmental management.

2.4.4 Land Use Planning and Policy

Land Use planning is an organized activity that seek to regulate land activities in an ethical, effective and efficient manner in order to prevent land degradation, pollution, hazard and disaster. World Bank (2012) defined Land use planning as the process by which a society, through its institutions, decides where, within its territory, different socio-economic activities such as agriculture, housing, industry, recreation, and commerce should take place and it also involves protecting well-defined areas from cultural, historical, environmental, or similar reasons, and establishing provisions that control the nature of development. It involves the systematic modification of human natural environment to suit its specification. Most times, this modification is to the detriment of the environment. An example is cases where land uses tend to increase the observable changes in the climate and increasing the risk of the potential flooding impact. Therefore, the Knowledge of Land Use is important to wetlands, uncontrolled and haphazard building development along coastal zones.

Land Use Planning/Policy is capable of reducing climate change impact through mitigation as most of the anthropogenic forcings are as a result of land use and Land use changes. Human activities have not only moved from deforestation for various purposes such as industrial but have included the disruption and conversion of a particular land with unique attributes and components to a different attributes and component. The conversion of wetland to made-up ground is changing its attributes to that of a solid ground. This is cosmetic as it is only temporary and could be washed away in the future if no proper measures are taken. Bajracharya, Childs and Hastings (2011), stated that Land use planning can play a key part in reducing current and future community risks associated with climate change, notably by enhancing prevention and preparedness and/or facilitating response and recovery in a community). The establishment of plans, policies and regulations on land use planning based on flood mitigation will improve the efficiency and benefits of flood mitigation (Suriya & Mudgal, 2012)

Governments respond to issues of land use through international conventions, legislations and regulations, economic tools and incentives, policies and programmes, planning and zoning and use of spatial technology. Land policy is an integral part of any national policy as stated in Enemark (2006), that land policy as part of a national policy aids in the improvement of economic development, social justice and equity and political stability and are associated with land market; sustainable management; tenure security; control of land use, natural resources and the environment; real property taxation; the provision of land for the poor, ethnic minorities and women; and measures to prevent land speculation and to manage land disputes.

Nations, public and private sectors must have a good knowledge on land use allocations, its response to the various use and the extent and nature of land resource which should be incorporated in land policies and planning for a sustainable land management. Therefore, sustainable management of land resources requires policies and planning to be based on a good knowledge of the extent and nature of these land resources, how the land has been allocated for use, and on how the land will respond to these uses.

Land policy can be defined as a piece of the national policy for promoting objectives, for example, economic development, social justice and political security (Aribigbola, 2008). They are national goals and objectives prepared by governments for land and land related issues.

Land Policy helps in defining guiding principles, regulation and control of land use practices that are climate change compliant by providing instructions on what should or can be done on specific lands. Land policy that has incorporated sustainable land use could curb actions that may exacerbate flooding within that environment and as such reduce its effect on real property investment. According Cagdas, Gur & Kurt (2003), the land management framework needs an incorporated and illuminated land policy and Enemark (2006) stated that Sound land management is the operational processes of implementing land policies in comprehensive and sustainable ways. It may be used as a tool for climate change mitigation since it aims at reducing the effect of climate change on the environment. Land Policy that have incorporated sustainable land use practices will help improve flooding risk management. Any statement in form of a policy automatically becomes binding on the stakeholders as it is deemed to have gone through the process of public hearing for general criticisms.

Childress, Siegel and Törhönen (2014), stated that there is a need to revisit approaches to land policy and governance that incorporate concerns about climate change and natural disasters. There is no sufficiency in most countries drafting out their mitigation measures and strategy without including them as part of the Land Use planning/Policy. It is only by incorporating climate Change mitigation measures and strategy into Land Use Policy that its implementation becomes effective and efficient.

Efficient and effective land use policy will identify land with different nature of susceptibility and allocate uses that are suitable for such lands and give specification for alternative uses if need be. For example, in Nigeria, flood plain areas like wetlands should not be used for residential purposes as it becomes vulnerable and exposed to flooding hazard. Properties vulnerable and exposed to flooding hazard are equally exposed to disaster risk.

2.4.5 Land Governance

According to World Bank (2013), land governance is the process by which decisions are made regarding the access to and use of land in a manner that decisions are implemented in a way that conflicting interest is minimized. Land governance focuses on analysing stakeholders and incentives in their processes and outcomes on decision making, implementation and resolution of conflict.

Land governance should be able to address conflicts that could arise from social justice, economic growth and efficiency and or environmental protection. The processes and outcomes of these interests should be statutory as well as customary rules and guidelines. The development of land on wetlands is as a result of poor governance as it is capable of hampering the environment protection and cause flooding which affects economic value and efficiency of real property.

The principles of good land governance in (World Bank, 2013) Are; security in terms of land tenure, rights and post conflict/disaster: sustainability: Equitability: effectiveness and efficiency: rule of law: transparency: accountability: subsidiarity: and civic engagement.

Stakeholders especially the public sector involved in land governance must consider issues on land policy and process, land use planning, land reform and land administration, land conflict resolution, land reform and administration and land upgrading and informal settlement in mitigation measures. Framing, harnessing and developing political sophistication and technical expertise in land governance is needed in land use management process for proper adoption and implementation to reduce climate change impact on real property see (Prater and Lindell, 2000 : Birkland *et al.*, 2003).

2.4.6 Land Taxation

Land taxation is a compulsory levy on land by the government on the land owner. Taxes on land has both fiscal and non-fiscal effect (Bird & Slack, 2002). But the taxation as a way of land use management is non-

fiscal as its aim is to deter and restrict certain uses or change of use on certain lands. Land taxation is an effective land use management tool and is dependent on the extent of government control over land. Their effectiveness and efficiency on land management is dependent on their design. Land taxation characteristics (tax base, tax rate and administration) is a major contributor to good land management. Land taxation design should rely on the physical components and attributes of the land in question. Lands with public interest should be heavily taxed.

III. METHODOLOGY

This research is a qualitative research whose philosophical assumptions is based on pragmatism to address a social issue in real life. Ihuah and Eaton, (2013) stated that pragmatism is neither positivism or interpretative; and or, value free or value laden, but a combination of all to address social real-life issue. The pragmatism research philosophy can integrate more than one research approach and research strategies within the same the same study (kakulu and Visigah, 2016). The study adopted different approach and strategy based on the reality of the research questions of the study and concepts that support the action. The research questions determined the philosophical underpinnings.

It is exploratory in nature and so requires its own design. The research strategy for this study is the grounded theory. Strauss and Cobin (1998) defined Grounded theory as a method of research where theory that was derived from data are systematically gathered and analysed through the research. Theories are developed as data is collected and analysed.

It is based on the qualitative research paradigm that researcher gradually tries to make sense of a social phenomenon by contrasting, comparing, replicating, cataloguing and classifying the objects of study (Creswell, 2003). The researcher believes that the event occur in a natural setting and therefore attempts to understand multiple realities and reconstruct meanings and interpretation. The research using grounded theory creates room for the exploration and expression of multiple possibilities and generating a list of option. There is ambiguity in every problem and a solution – driven approach to any problem should have a level of inquiry and thought process that requires series of questioning, reading of meanings into words, phrases and statements and constant comparison. It allows for flexibility, intuitiveness, sensitivity, credibility, receptivity, reciprocity and all other characteristics that is needed for a qualitative research. El Hussein, Hirst, Salyers and Osuji (2014), the Grounded theory provides for an intuitive appeal, fosters creativity, has the potential for conceptualization and systematic approach to data analysis and provides for data depth and richness. It uses both inductive and deductive thinking.

Using the Grounded theory strategy allowed the researcher to be flexible in its approach. There was no die-hard-rule to data sampling, collection, analysis and interpretation but they were all based on the intuitiveness, creativity and concepts of the researcher. The grounded theory strategy also allowed the researcher to conduct series of questioning for more exploration, analysis of words, phrases and sentences to extract relevant information and systematic comparison for logical relationship and differences in order to develop a theory on existing knowledge in the data collected.

The research depended on secondary data that were sampled theoretically to explore new areas for opportunities to compare event. The secondary data are official documents from Nigeria, Rivers State, Port Harcourt, Nepal and Myanmar that existed prior to this research. They are all reliable, credible and valid documents that was scrutinized by the public for public consumption. They included various land policy, regulations and laws. Below is the various research questions and data collected and sampled based on each research question. They include:

1. The Land Use Act Chapter 202 Laws of the Federation of Nigeria, 1990.
2. Nepal Land Use Policy (2015).
3. The Republic of the Union of Myanmar, National Land Use Policy (2016)

Nepal, Myanmar and Nigeria are all signatories to the UN, all have same natural hazard, multiple languages and ethnicity. If Nepal and Myanmar can have a Land Policy that have integrated the SDGs, then Nigeria should take the lead on developing its Land Policy that integrates the SDGs especially because Nigeria has a higher GDP to achieve the development of the policy, more population and more urbanization rate and therefore more properties that are exposed to flooding hazard risk and disaster risk. The data collected was analysed by asking various question in order to explore and content analysis to retrieve relevant information from the various documentary data. Analysed data was presented in texts.

4.1 THE NIGERIAN LAND USE ACT

The Land Use Acts benefits include land tenure ownership and rights, for efficient land administration and for compensation purposes. Land Use Act stipulates that land is vested on the Governor who holds in trust and administers same for the use and common good of the people. There is a Land Use and Allocation committee that advises the Governor on land management and revocation of right of occupancy due to public

interest and the settlement of dispute arising from compensation. While the Land Allocation Advisory Committee is responsible in advising the Local Government on issues pertaining to the control and management of land in the Local Government Area.

The Governor grants statutory rights of occupancy for all purposes and easement appurtenant, demand rent and revise rents, impose penalty for breach of covenant and condition and to grant a waiver. The Governor also grants licenses for mining and the Act specifies maximum area for such activity. The Local Government grants customary rights of occupancy for agricultural, residential and grazing purposes. The Land Use Acts states that a person granted a Statutory right of occupancy must use it in a prescribed manner. See picture below.

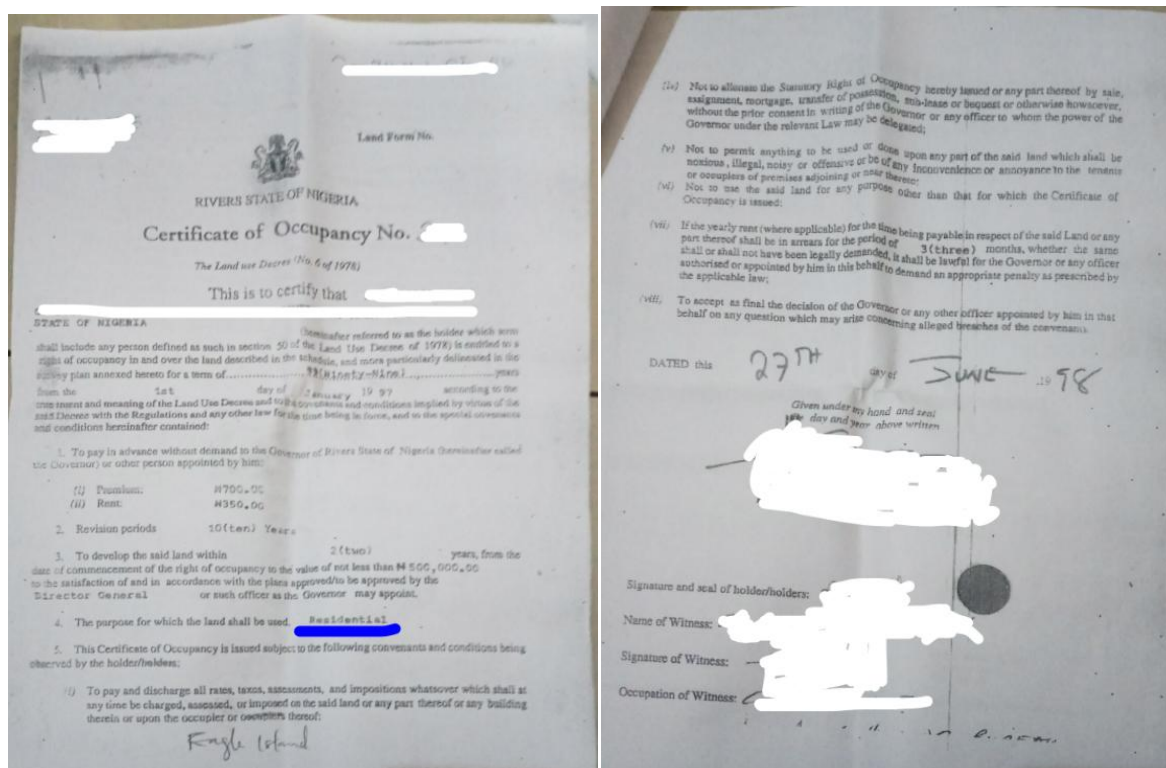


Figure 2: A typical Rivers State Certificate of Occupancy

Source : Researcher survey

The use is highlighted in blue in the certificate of occupancy above and shows that the land is to be used for a residential purpose and no further details.

The Revocation of Rights of Occupancy is for the overriding public interest and breach of any of the conditions as in the certificate of occupancy. The overriding public interest means any alienation by the occupier that is contrary to the Act or public purposes or requirement of the land for mining or oil pipeline purposes.

4.2 THE NEPAL LAND USE POLICY

The Nepal Land policy benefits are to aid sustainable development, for effective and efficient land use, aiding and increasing productivity, for clearly defining goals, raising finance for SDGs, striking balance, Reveals pattern, problem solving, effective planning and zoning (which are determined based on the principles of promoting complimentary land use, maintaining competitive land use and avoiding conflicting land use), helps response, aids land audit and predictions.

The Nepal Land Use Policy is in preparations for the international commitments of achieving the goals of sustainable developments which are to provide a safe, dignified and well-facilitated human settlement for all, to conserve bio-diversities, to operate a campaign against desertification as well as to mitigating risks from climate changes. The Nepal land use policy is aimed at bringing out the benefits of using Lands and Land Resources by creating a situation of distributing lands in a just manner. In the introductory statement, the policy recorded that a challenge has been poised to food security, human settlement, ecological balance and sustainable development due to disaster-risks such as: soil erosion, floods, and landslides that are escalated by the impact of geographical and geological conditions and/or ecological changes. The policy stated that there will be more complex issues with protection of life and property and disaster management without due scientific classification, development and management of lands.

The Nepal land use policy task is to develop proper utilization of lands in a specific manner, to coordinate roles of actions of stakeholder in sustainable use and management of lands and land resources as a cross-cutting issue, to guarantee food security by preserving arable lands, to make optimum use of lands for a hygienic, beautiful, well facilitated and safe human settlement as to enhancing a planned and sustainable urbanization and for the development of physical infrastructures and to refer specific land use zones through plot survey of all geographical landscapes for complete records. Other tasks are to conserve, develop and manage forests, open spaces, and wetlands amongst others in the bid to mitigate the impact of climate changes and newly created hazards among natural disaster and for biological diversities and environmental protection and to effectively enforce the laws for the execution of Land Use Policy. Furthermore, it has a challenge to assess and apply minimum property valuation and progressive tax system on lands on the basis of specific use after getting prepared of plot based records.

4.3 THE MYANMAR LAND POLICY

The Myanmar Land Policy benefits are to Increase knowledge and monitoring systems, aids sustainable development, Revenue mobilization for financing, development, provides finance for SDGs, reduce tax evasion, increases land productivity, directs usage of resources, deters development on hazard prone areas.

The objectives are to promote sustainable land use management and to protect cultural heritage areas, environment, and natural resources, to strengthen land tenure security, to recognize and protect customary land tenure rights and procedures of the ethnic nationalities, to develop transparent, fair, affordable and independent, to promote people centered development, participatory decision making, responsible investment in land resources and accountable land use administration.

The Myanmar Land Policy guiding principles are to enhance sustainable land use, to ensure transparency, responsibility and accountability in land and natural resource governance, promote people's participation and collaboration, to recognize and protect private and communal property rights and to make effort promoting appropriate international good practices in land and natural resource governance.

The basic principles are built on the recognition and protection of legitimate land tenure rights, strengthening of the rule of law and good governance, promotion of effective land information management, adoption of international best practices, and promotion of effective market based solutions. It is to be reviewed and revised to meet changing socio-economic needs, the policy is to develop and implement fair procedures, to ensure easy access to dispute resolution mechanism, to prioritize public interest and to address the impacts of climate change and natural disaster.

5.1 Adaptable Land Management Tools.

The Land Management tools that can be adapted for the mitigation of climate change impact on property value identified from the analysis of Nigeria Documents which are Land Administration, Land Valuation, Land Tenure and Land Governance are not within the context of climate change and sustainability. As a matter of fact they are obsolete with the newest as far as 2003 and 10years before the Sustainable Development Goal. It does not in any way address these issues. While the ones identified by the Nepal and Myanmar document are Land Policy, Land Information System and Land Taxation inclusive of the ones identified from Nigeria Documents are all to drive Sustainable Development Goals and address climate change. They are very recent and was reviewed specifically for the purpose of Sustainable Development.

The benefits of the Nigeria Land Use Act from the content analysis is to establish tenure and land holding, ownership that vests all land in the state government and rights, efficient land administration and compensation. The aim is to allow easy access of land by the Government for public interest. This can help the Government acquire and pay compensation for floodplains, wetlands and other susceptible areas and use them compliantly. The Rivers State Physical Planning and Development Law, 2003 is for planning, development control and policy formulation and Port Harcourt Development Control (Building) Regulation is for development control and building standards are aimed at addressing comfort of the occupants, structural stability and safety of the building and aesthetics of the area.

While that of Nepal and Myanmar from content analysis shows the benefit as increased knowledge and monitoring system, to aid sustainable development, effective and efficient land use, aid productivity, maintains balance and sets clearly defined goals. Others included to raise finance for SDGs, strikes balance, reduce tax evasion, directs usage of resources, and to deter development on hazard prone areas, conflict resolution, revealing pattern, effective planning and zoning, helps response, aids land audit, helps prediction, supports conservation, indicates natural hazard zones and creates comprehensive maps. All the benefits of these laws are rooted in the Sustainable Development Goals 9, 11, 13 and 15 in order to mitigate climate change impact on PI.

VI. CONCLUSION

There is an observable lacuna in the Nigeria policy documents in terms of Sustainable Development. While other countries have reviewed and reformed their policy documents to incorporate Sustainable practices for the adaptation of climate change impact on property investment. From the policy documents of Nigeria, Nepal and Myanmar various Land Management tools have been identified. Although the Nigeria policy document have not incorporated them for the mitigation of climate change impact on property, the Myanmar and Nepal Policy documents have incorporated them. The study therefore suggests that the identified Land Management tools be incorporated in Nigeria policy document to help mitigate the impact of climate change on property investment especially as property investments are major contributor to Gross Development Product and it sustains livelihood.

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