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Community Greening in Pre and Post Climate Change Knowledge Era in Third World Cities: Case study of Lagos, Nigeria

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Abstract
This paper reviewed the efforts of the government in community greening during pre and post climate change era in third world cities using Lagos, Nigeria as a case study. This was with a view of understanding the importance green space as a measure of adaptation to climate change in recent years in the study area. The study reviewed secondary data on provision of green space in purposively selected scheme and master plan that pre-date climate change era. Primary data in the form of field observation of the location and size of green space initiated within the city in the post climate change knowledge era, particularly in the last past five (5) years were also considered. The study further reviewed contemporary law and policies of the government as an approach to community greening in the city during the pre-climate change era.
Finding revealed that the government is keener toward the provision and maintenance of green space in the study area during the post climate change era than during the pre-climate change era. Within the past six years, 14 public parks and 128 landscape garden were created and maintained in the city. Nineteen (19) of these public parks and garden covers a total land area of 314409.43m^2 (77.69 acres). Furthermore, an agency was established for the sole aim of promoting or increasing green area in the city. A fine of N50,000 ($318.5) or one year imprisonment is attached to felling of these trees. There was also massive tree planting exercise, between 2009 and 2010, when about 300,000 trees were planted across the city. The study recommended that the use of hard landscaping element around buildings should be discouraged and appropriate authorities should involve the available local associations and non-governmental organizations (NGO) in all their environmental programmes. It concluded that environmental benefits of providing green space should be given utmost priorities because of the importance of greening the environment during this post climate knowledge era
Key Words: Community, Cities, Greening, Climate Change and Third World

1. Introduction

Man's activities relating to where he lives, works and his movement from place to place, consumption as well as the usage of technologies, all affect heat emissions in a city. All these influence the urban climate (Brian, 2012). It therefore follows that the concentration, in urban centres, of people and their homes, infrastructure, industries and waste within a relatively small area can have far reaching implications (United Nations – Habitat, 2003). For instance, the urban concentration of these elements can lead to reduction in urban green space, as well as induce change in climate (Kessides, 2005, Olaleye, 2012).
Although the term climate change has been defined by various researchers and environmentalists, perhaps the most suited definition for the purpose of this research is "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (United Nations Framework Convention on Climate Change, 1992).
The impact of climate change on the built environment in recent time called for various steps to mitigate or adapt to the changes occurring within and around the urban areas. Climate Change Adaptations (CCA) are activities which aim at making adjustments in natural and human systems in response to actual or expected climate change and their effects. It is primarily about practical measures in programming, policy and advocacy which reduce vulnerabilities or increase resilience of communities from the negative effects of climate change.
Greening the city is one of major steps in climate change adaptions (CCA). According to Adedeji and Eziyi (2010), in order to effectively adapt this control measure, there is need to increase the level of the green areas and open spaces in urban centres by encouraging the preservation of green areas and open spaces, planting of trees, agro forestry and community-based conservation schemes should be taken more seriously. Furthermore, people should be encouraged to plant ornamental plants and establish horticulture gardens around their buildings. While the use of hard landscaping element around buildings should be discouraged.
Researches has revealed that even though global climate change awareness has been around for some time, it is only in recent years that governments, its agencies (e.g urban planners) and the community at lager in the third world countries appear to consider the environment in their planning of competitive and liveable cities. (IPCC, 2007 and Brian, 2012). From the foregoing, this research is therefore aim at reviewing the efforts of the government in community greening during pre and post climate change era in third world cities using Lagos,

Nigeria as a case study. This is with a view of understanding the magnitude of steps taking in the use of green space as climate change adaptions measure in recent years in the study area.

2. Literature Review: Urban Centres, Climate Change and Green Space Development

Urbanization and climate change are evolving simultaneously in such manner that the densely packed areas of the urban centres are placed at higher risk from climate change and other environmental changes. On one hand are the effects of activities in the urban centres on climate change and on the other hand are the effects of climate change on the urban areas. Promotion of green space within urban area is one of the proactive measures of limiting the effect of the change in climate on the urban environment.

2.1 Impact of Urban Activities on Climate Change

The allocation of responsibility for greenhouse gas (GHG) emissions and subsequently climate change is important. Urban areas – which are now home to more than half of the world's population, have an important role in facilitating reduced emissions (UNFCCC 2010). Urban centres do not themselves emit GHGs. Rather, specific activities that take place within urban areas – and that are undertaken in different ways by people of different ages, genders and income groups are the sources of these GHGs (UNEP *et. al*. 2010). Different activities or sectors emit different quantities of different gases – with diverse impacts upon climate change.

The main sources of GHG emissions from urban areas are related to the consumption of fossil fuels: whether this is for electricity supply, transportation or industry. Other activities include waste generation, agriculture practice, land-use change and reduction in urban forestry. An assessment of the contribution of cities to climate change is a vital first step in identifying potential solutions. This is because a large proportion of the earth's population resides in towns and cities, and the concentration of economic and industrial activities in these areas, means that they need to be at the forefront of mitigation.

2.2 Effect of Climate Change on the Urban Centres

Atmospheric and oceanic warming as a result of human activities has been observed over the past decades (IPCC, 2001). Climate change poses serious threats to urban infrastructure, quality of life, and entire urban systems. Not only poor countries, but also rich ones will increasingly be affected by irregular climate events and trends (World Bank, 2010a). One of the major effects of climate change on the urban environment across the world is flooding (Solomon et. al., 2009 and World Bank, 2010a). According to Moser and Satterthwaite (2008), approximately 360 million urban residents live in coastal areas less than 10 meters above sea level and are vulnerable to flooding and storm surges. Furthermore, it has been reported that fifteen of the world's 20 megacities (Lagos inclusive) are at risk from rising sea levels and coastal surges (IPCC 2007). The IPCC predicts a rise in average sea level over the next 100 years ranging between 13 to 28 centimetres in a low scenario and 26 to 59 centimetres for a high scenario. The study area in the recent years has been experiencing flood during raining season. This could be as a result of the location (coastal) of the study area and the increasing rainfall in the past few years (Odjudo, 2010).

Another effect of climate change on the urban environment is the rise in temperature. According to Odujudo (2011), Nigeria is experiencing global warming at the rate higher than the global mean temperatures. In Nigeria, the mean increase in temperature from 1971 to 2008 is 1.78 ^{0}C, compared to the global mean increase in temperature of 0.74 ^{0}C since instrumental global temperature measurement started in 1860 (Odujudo, 2011). The sharp increase in temperature between 1971 and 2005 in Nigeria could be linked to the effect of climate change and its associated global warming earlier reported (Mabo, 2006 and Odujudo, 2011).

2.3 Green Space Development

The development of green area within urban centres is one of the methods of adapting to climate change. Urban green space includes everything in cities that has vegetation. Collectively, it is sometimes referred to as 'Green Infrastructure', which encompasses the entire working landscape in cities that serve roles such as improving air quality, flood protection and pollution control (Girling and Kellett, 2005). Some of the many benefits of urban green spaces are; air and water purification, mitigation of the impact of environmental pollution, carbon sequestration and regulation of microclimate (Milton, 2002).

Various projects and community efforts have been geared towards sustaining development in the urban areas particularly with regards to climate change mitigation measures. Most often, these projects are led by governmental authorities through the use of planning law and regulations. For instance in Sao Paulo and Cape Town (Brazil), the principles of 'compact city planning' was incorporated within the municipal ordinances of cities to advocate for a combination of planning measures (World Bank, 2010b). This measures focus on preventing urban sprawl and the integration of green areas in the city**.**

3. Conceptual Framework: Contemporary Issues in Climate Change

Climate change is different from climatic variability which means variation in the mean state and other statistics of climate on all spatial and temporal scales beyond that of individual weather event. Such temporal scale

variations could be monthly, seasonal, annual, decadal, periodic, quasi-periodic or non-periodic. Climate change is of two facets namely global warming and global cooling. Global warming is a gradual but systematic increase in average global temperatures experienced for a very long period of time while the reverse is true for global cooling. (Odjudo, 2011)

Currently, climate change is a subject of debate particularly among scientists in environmental studies. This implies that concerted and coordinated efforts are needed by all concern, in order to save the environment from the threat pose by this phenomenon. The scientific consensus on climate change is that climate is changing and that these changes are in large part caused by human activities (National Research Council 2010) and it is largely irreversible (Solomon et. al, 2009). In some cases the chain of causality of human influence on the climate is direct and unambiguous (for example, the effects of irrigation on local humidity); while in other instances it is less clear (National Research Council, 2008; World Bank, 2010a).

Various hypotheses for human-induced climate change have been argued for many years. According to these arguments, some of the climatic problems that are developing today, such as global warming, ozone depletion and El Nino, will have severe effects on ecosystems all around the world (Lerner and Wilmoth, 2006). Of most concern in these anthropogenic (human) factors is the increase in carbon dioxide levels due to emissions from fossil fuel combustion, followed by aerosols (particulate matter in the atmosphere) and cement manufacture (Solomon et. al, 2009). Other factors, including land use, ozone depletion, animal agriculture and deforestation, are also of concern in the roles they play - both separately and in conjunction with other factors - in affecting climate, microclimate, and measures of climate variables.

Consequently, the debate has largely shifted into ways of reducing further human impact and to finding ways of adapting to change that has already occurred. One of the ways of reducing the impact of human activities on climate or adapting to already existing change is by green the environment. The motives behind the provision of the greens in any development/design are for good habitation, beautification and conservation purposes. They were also created to protect hill-tops, hillsides and streams/rivers courses in their natural form. Therefore tampering with them could result in generating soil erosion, deforestation and their effects on the natural ecology of the environment and climate protection (Jubril, 2010).

4. The Study Area

Lagos is the main city of Lagos State, which is situated in the southwestern coast of Nigeria (Aluko, 2010). The coastal city of Lagos, currently the fifth largest city in the world, is situated within latitudes 6°23'N and 6°41'N and longitudes 2°42'E and 3°42E. The Metropolitan area of Lagos takes up to 37 per cent of the land area of Lagos State and houses about 90 per cents of its population (United Nations 1995). According to the preliminary results of the 2006 census, there are 7,937,932 inhabitants in Metropolitan Lagos (Federal Republic of Nigeria, 2007). The area of Lagos constitutes of two major regions: the Island, which is the original city and the mainland, which is made up by rapidly growing settlements. The climate in Lagos is tropical, hot and wet. The average temperature in Lagos is 27 °C and the annual average rainfall 1532 mm (Aluko, 2010). According to Oduwaye (2006), the general structure of land use distribution in the study area shows that only 2.8% of the total land area is open space. This includes all urban land for recreation, parks and garden, urban agricultural land, commercial and individual horticultural garden, and unused spaces. Lagos, an area with limited land is chocked with housing development, heavy industries and automobiles. Further to the above-mentioned problems is the world global warming and depletion of ozone layer, threatening human survival in the new millennium. (Abegunde, 2011)

5. Methodology

The study reviewed secondary data on provision of green space in purposively selected scheme and master plan that were designed and implemented during the pre-climate change era. It compared the provision of green space during this era and compliance several years after the initiation and implementation of these projects. Primary data in the form of field observation of the location and size of green space initiated within the city in the post climate change knowledge era, particularly in the past five (5) years were also considered. The study further reviewed contemporary law and policies of the government as an approach to community greening in the city during the pre-climate change era. It is important to notice that issues relating to climate change became predominant and a subject of pulsating discussion in Nigeria in the 21st Century.

6. Pre Climate Change Era

Prior to the period when climate change becomes focal issue in the world, government in third world countries have great concern for the provision of green space within cities. This desire to provide green space was however not matched with commeasurable compliance as areas provided for green space were often converted to other land uses. This assertion is supported by the work of Omar, et. al (2000); Abegunde (2011, 2012). This study focused on a scheme and a master plan initiated in the post climate change era.

6.1. Somolu-Ilupeju (Approval) Order of 6th February, 1961)

This order was framed under sections 12 and 13 of the Nigeria Town and Country Planning Law and was cited under the Town and Country Planning law (CAP. 188) of Lagos State 2004, Vol. 8, Pg. 4907-4912. The scheme/plan was prepared by the Ikeja Area Town Planning Authority and it was registered as T.P.W. Number 522, 511, 501, and 471. The scheme covered an area of approximately 5,207 acres. This represented part of the present day Ilupeju Industrial Estate, Onipanu, Somolu, Oshodi and Mushin residential zones. The scheme in clause 9 ordered for the reservation of some parcel of land to cater for the green space required for its proper implementation. Table 1 is an extraction from PART 2 – SCHEDULE "A" of the scheme.

In clause 10, it was stated that no person shall, except with the consent of the Town Planning Authority erect a building or execute works or make any excavations on the reserved land, other than buildings, works or excavations required for or incidental to the purpose for which the land was reserved. This clause therefore put the Planning Authority at the fore front of the fight to protect green space in metropolitan Lagos shortly after independence. In clause 12, it was equally spelt out that a land would only be considered as a private open space/green space if it was use for any of the following;

(a) as an ornamental garden or pleasure ground or as a private ground for sports or recreation ground ordinarily open or intended to be ordinarily open to the public on a payment of charge; and

(b) as a farm for low growing crops, or grazing land and market gardens, other than land wholly or partially for the purpose of a plantation, forest or firewood plantation.

In the said scheme, most of the green spaces provided were located on the same block with residential land use; an indication that the green space was considered very paramount to a liveable residential neighbourhoods in the 60s. Table 2 indicated the allocation of block to various uses in the Somolu-Ilupeju Scheme.From Table 2, there were 112 blocks in the scheme. Although the layout plan prepared in 1961 was not available, deduction can still be made on the relevance of green space to the scheme and more in particular to residential land use. In all, a total of 23 (20.52%) blocks has representation of green space. Out of this, 4 blocks were fully devoted to uses that were green space or green space related, 16 blocks were shared by green space and one other form of land use, while 3 blocks were shared by green space and at least 2 other forms of land use.

Table 2 further revealed that where blocks were shared by green space and other forms of land use, it was basically with residential land use. In 15 (65%) of the blocks, green space and residential land use were to co-exist. In another 3 (13.04%) of the blocks both green space and residential land use were to co-exist with at least one other land use. In all, green space were located on 18 blocks with residential area, which represents about 78%. Similarly, residential land use shared more blocks with green space than with any other form of land use. Figure 1 represents the relationship between green space and other form of land use and in the Somolu-Ilupeju Scheme.

As observed by Omar, et. al (2002), green space facilitate the achievement of a self-sustained city and equally for recreational and leisure time activities of urban dwellers. In Nigeria however, it is more of theory than practise. The section of the law where this scheme was sited gave the coordinate of the origin (starting point), the bearing and the length of the boundaries. Starting at a concrete pillar marked PBC 2903, the coordinate of the origin were 927,711.36 feet north and 346,112.34 feet west (105495.041E and 282766.423N).

With the aid of satellite imagery and the available information of the boundary of the scheme, it was observed that the current situation in Ilupeju and Somolu where this scheme was implemented forty years ago revealed that most of the area reserved for green space had been converted to other forms of land uses. The only form of green space that was vivid within this scheme was the landscape along Ikorodu road between town planning bus-stop and Onipanu bus-stop. Only two parks and garden (PZ on Town Planning Road and Olutunda Park on Olutunda Street) currently exist within the scheme. The result of this finding corroborated with that of Fasona and Omojola (2004) on their findings on a similar research within Lagos.

6.2 The Master Plan of Satellite Town

The Federal government in 1991 requested for the preparation of Master Plan for satellite town to provide a policy document capable of guiding present and future land use trends within this area of 485.905 Hectares (FMW&H, 1993). In that plan a total of 1.36 and 7.05 hectares, representing 0.28% and 8.12% were proposed for parks/gardens and vacant/undeveloped land respectively. According to the master plan, these will cater for the green areas and future development throughout the plan period (FMW&H, 1993). As proposed in the plan it was expected that upon completion, 9 parks/gardens and 1 recreation centre would have been added to the town. These are the only form of green space recommended by the master plan.

A further look into the master plan revealed that recommended trees and shrubs were to be planted in the proposed parks and gardens, along major arterial and collector roads in the estate to enhance the aesthetics of the estate and provide shade for pedestrians. From the proposal stage, the green space proposed was grossly inadequate. All the green area as calculated from the master plan is presented in Table 3.

From Table 3, the only land use that was directly and fully related to green space was the area provided for recreation in the plan. This is because the other areas were left green (reserved) for future development. As currently observed, only the recreational area still existed as green within the estate. This is the place currently referred to as First Bank Sport Complex. The places left as green (reserved) area twenty years ago had been taken over by other forms of land use. For instance, proposed site H is gradually been converted to various forms of land use like commercial activities as well as a barrack for the men of Federal Fire Service. The master plan was to be implemented in 4 phase of 5 years each, thus, a completion period of twenty (20) years spanning from 1991 to 2011. The implementation period for the proposed nine (9) parks and gardens was from 1991 to 2005, while planting of the recommended trees, shrubs and flowers was to take place between 1991 and 2004. A survey of the satellite town revealed that no park/garden existed in the year 2012 and that the recommended trees and shrubs along transportation route was scarcely in existence.

It is also important to note that the implementing agency for the parks/gardens and the proposed trees planting as stated in the master plan was the federal ministry of works and housing. Although, the environmental impact assessment report in the master plan identified the negative effect of the residential neighbourhood on natural resources (flora and fauna), little was done by the implementing agency to replace this important natural resources in the area. The proposal recommended the planting of trees along major roads and streets to serve as shade for pedestrian. This has not been done as revealed by the finding of this research. From the field work on two government residential schemes, it was obvious that the green space were not accorded with full attention in the pre climate change era. While adequate green space was provided in the Somolu-Ilupeju scheme in the 60s, the reverse was the case for the satellite town scheme. They however shared similarity as to lack of compliance or proper maintenance.

7. Post Climate Change Era

Community greening in the era of climate change as a focal issues has taken another dimension. This is because with gas flaring alone, Nigeria's carbon footprint is quite large. But an urban area like Lagos also contributes its fair share to the carbon footprint. It seems that the state is aware of this and in its own way provide for the greening of the city through the creation of parks and gardens, planting of trees, landscape of transportation routes as well as enacting law and formulating policy to improve the green nature of the city. Community green also takes the form of climate change advocacy by the state government.

7.1 Law and Policy

One of the ways by which the state is "going green" is by The Lagos State Parks and Gardens Agency Law No 13 of 2011. The law, which came into effect on August 24, 2011, established the Lagos State Parks and Gardens to enhance the beauty of Lagos State by improving on the current infrastructure in the State's parks and gardens to a world class standard. The functions of the Parks and Gardens Agency to administer maintain and manage all designated parks and gardens in the state; charge appropriate fees for the use of facilities provided where necessary in the state parks and gardens and carry out the general directives and policies of the government in respect of the development.

Others are to maintenance and management of parks, recreation centres, gardens, playing grounds and open spaces in the state; grant permits on the payment of the prescribed fees to any club, association or similar body or to any person, for the purpose of holding galas, competitions, tournaments and similar events exclusively in any of the open spaces in the parks or gardens managed by the agency and regulate the hours of use of the open spaces in the state parks or gardens by members of the public.

The agency is also to provide and maintain adequate security and environmental sanitation facilities for the state parks, gardens, open spaces and recreation centres; promote afforestation in all ramifications in the state; enumerate and tag all trees within the state inclusive of those in private tenements; monitor and supervise trimmings and felling of trees within the state; advise on all matters relating to the greening programme of the state; cause funds for the maintenance of parks and gardens; and carry out such other assignment as may from time to time be directed by the governor." (Lagos State Government 2011).

The law provides for the designation of state parks and gardens in Section 18, which states that:

(1) "any area of outstanding natural beauty, long distance route, open air recreational facility within the state may be designated as a community park/garden, district park/garden, regional park/garden or conservation area by the governor from time to time, subject to a resolution of the House of Assembly.

(2) "without prejudice to the provision of subsection (1) above, a Local Government or Local Council Development Area may, subject to the approval of the governor, designate an area within its control as community parks/garden.

(3) "this Law shall apply to any area designated in accordance with subsection (1) above and the Agency shall have the power to administer such area as a State Park or State Garden.

Section 19 covers the landscaping of tenements: "As from the commencement of this Law, all tenement owners and occupiers shall landscape and beautify the perimeter areas of their properties, the neglect, failure and refusal of which shall warrant the penalty of N250,000 ($1562.5) or such sums as the state shall incur in doing same on behalf of the tenement, or six (6) months imprisonment or other non-custodial sentence." The law says landscaping "means but not restricted to beautify (land, property, etc.) by modifying or enhancing the natural scenery, which include planning and planting of gardens and grounds, especially so as to produce picturesque and harmonious effect."

The offences under the law include the expected littering; unhygienic use of fountains, pools or water in the parks, gardens and open spaces; walking on lawns instead of designated walkways; and spitting, urinating or defecating in any area of the parks, gardens or open spaces.

7.2. Provision of Parks and Garden in Lagos

Lagos has, in the past two years, witnessed a massive landscaping and beautification programme that has literally changed the face of the mega city for the better. The government's "Operation Green Lagos" programme has resulted in the reclamation of open spaces from garbage, illegal structures and miscreants. These according to Umunna (2010) have greatly improved the aesthetic appeal of the environment, contributed to the global war against climate change. During the era of climate change knowledge there has been an increase in the number of parks, gardens and landscape in the city of Lagos. According to the official website of Lagos State there are 14 public parks and 128 landscape garden in the city. The period of creation of lager percentage of this pack is between 2007 and 2012. Presented in Table 4 is the list of some notable parks, gardens and landscape in the city of Lagos.

7.3 Climate Change Advocacy

The incumbent Governor of Lagos State Babatunde Raji Fashola believes that without convincing residents of the city on the need to treat the environment with respect, all the achievement of the administration in the development of parks and enactment of law cannot be sustain. Thus the lunched of an environmental advocacy campaign aimed at enlightening the public on the consequences of environmental degradation (African Courier, 2010). The campaign has seen the launch of climate change clubs in primary and secondary schools across Lagos aimed to re-orientate the youths and inculcate in them good sanitary and greening habits to enable them serve as agents of change in the larger society. Outside the school system, the administration is also organising symposiums to enlighten and educate the public on the need to imbibe environmentally sustainable behaviours.

The governor also appointed selected stars and celebrities as environmental ambassadors. These icons, according to Fashola, "have been contributing in no small measure to the preservation of the environment" and are now required to do more in view of their new appointment. As "the face of the campaign on the sustenance of the environment, they are expected to propagate the essence of the campaign in their shows, write-ups, public comments and other such opportunities at getting the message across to the public."The State government through the Ministry of Environment has Organised Annual International Summits on climate change since 2009 (MOE Profile, 2012).

7.4 Preservation and Planting of Trees Campaign

One of the major ways by which the city of Lagos is mitigating the effect of climate change is through the preservation and restoration of carbon sinks. A ban on tree felling has been imposed. So far, more than 3000 trees have been counted and tagged to prevent felling. In other to make this ban effective, included in the list of offences in the Law No 13 of 2011 is the "felling or trimming trees in the state without obtaining the required permit from the Agency." The offences carry a penalty on conviction of "N50,000 ($318.5) or one year imprisonment or other custodial sentence or to such fine and imprisonment or other non-custodial sentence." The state government embarked on a massive tree planting exercise, which is running side by side with an awareness campaign about the benefits of tree planting and protection to the environment. Between 2009 and 2010, about 300,000 trees were planted across the city. This however, falls far short of its ambition to plant at least a million trees annually (African Courier, 2010). Residents are also encouraged to plant trees within their parcel of land, and the campaign has also been extended to corporate organisations and non-governmental organisation in the state. Every 14th of July is the state's Tree Planting Day. The Lagos State Parks and Gardens Agency marks the day with a programme and give out plants to every participant of the programme to plant and nurture at home.

8 Recommendations and Conclusion

Plants have been found to be beneficial to man not only as food but also as natural source of oxygen. In addition, they provide shades from sun, beautify the environment, protect the soil from erosion and militate against the effect of climate change. To maximize these benefits, there is need to increase the level of the green areas and open spaces in urban centre by encouraging the preservation of green areas and open spaces. For these reasons, the annual tree planting exercise, agro forestry, and community-based conservation schemes in the city should be taken more seriously, and people should be encouraged to plant trees, ornamental plants and establish

horticulture gardens around their buildings. The use of hard landscaping element around buildings and bush burning should be discouraged. It is also recommended that appropriate authorities should involve the available local associations and non-governmental organizations (NGO) in all their environmental programmes; from the planning and design, through the implementation to management stages in the provision of green space within the city.

The study has assessed contribution to green space during the post and pre climate change era. It used secondary data to reviewed two separate schemes initiated during the post climate change era. It equally used primary and secondary data to review community contribution to greening the city environment in the post climate change era. It is the opinion of this study that environmental benefits of providing green space should be given utmost priorities over and above economic or social benefits because of the importance of greening the environment during this post climate era knowledge.

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Table 1 PART 2 – SCHEDULE "A" Private and Public Green Space

S/No.	LOCATION	USE
1	Block 2, 3, 58, 61, 63, 75, 84 and 86	Public green space
2	Block 4, 30, 31, 45, 46, 69, 71, 73, 90, 104 and110	Set back green space for shades
3	Block 77	Public open space and Campos
4	Block 79	Crèche and public open space
5	Block 103	Playing ground.

Source: Extracted from Town and Country Planning Law of Lagos State (CAP 188), 2004;

Table 2: Division of blocks for various land uses in Somolu-Ilupeju scheme

S/No	Land Use	Block with Single Land Use	Block with 2 Land Uses	Block with 3 or more Land Uses	Total no of Blocks	Percentage of Land Use
1	Cinema		51, 94		2	1.79
2	Clinic		53		1	0.89
3	Commercial Blocks	22, 23, 24, 25, 26, 27	21, 28		8	7.14
4	Community Centre			76	1	0.89
5**	Creche and Public Green Space		79		1	0.89
6	Hotel		21		1	0.89
7	Market Site	78, 95			2	1.79
8	Petrol Station		28, 42, 48, 52, 85, 102	75, 104	8	7.14
9	Place of Worship		66, 83	49, 58, 76	5	4.46
10**	Playing Ground	103			1	0.89
11	Post Office			45	1	0.89
12**	Public Green Space	2, 3	61, 63, 84, 86,	58, 75,	8	7.14
13**	Public Green Space and Campos	77			1	0.89
14	Residential Blocks	1,5-20,29,32-41,44,47, 50,54-57,59,60,62,64, 65,67,68,70,72,74,80, 82,87-89,92,93,96-101, 105 - 109, 111, 112	4, 30, 31, 42, 43, 48, 49, 51-53, 61, 63, 66, 71, 73, 79, 81, 83-86, 90, 91, 94, 102, 110,	58, 75, 104, 76	96	85.71
15	Residential Plots and Incidental Shopping Blocks		91	76	2	1.79
16	Restaurant			45	1	0.89
17	Schools		43, 81	49	3	2.68
18**	Setback green space for Shade		4, 30, 31, 46, 61, 63, 69, 71, 73, 90, 110	45, 104	12	10.71
19	Shopping Centres		46	45	2	1.79

Sources: Town and Country Planning Law of Lagos State (CAP 188), 2004; Author's fieldwork, 2012.

** Land uses that were related to green space.

Table 3: Calculated green areas on the proposed map of satellite town

S/No	Land Use	Area (Hectares)	Percentage (%)
1	Recreation Area	2.477	0.5098
2	Area for Future Development (Proposed Site H)	7.160	1.4735
3	Area for Future Development (Opposite Site B)	1.719	0.3537
TOTAL		11.356	2.3371

Source: Author's Fieldwork, 2012.

Table 4: Notable Parks, Gardens and Landscape in Lagos City

S/No	Name	Location	Approx. Size (m^2)
1	4 separate parks/landscape at Adeniji Adele interchange/flyover	Adeniji Adele B/stop, Third mainland – Obalende Exp.	41339.06
2	Beko Ransom Kuti Park	Anthony-Oke B/stop, Oshodi-Gbagada Exp.	3005.467
3	C.M.S. Park	C.M.S. B/stop, Lagos Island	11072.55
4	Commercial Horticulture Garden	Anthony-Oke B/stop, Oshodi-Gbagada Exp.	3313.080
5	Costain Roundabout	Brewery/Costain B/stop, Costain	11750.25
6	Dolphin Park	Olowu B/stop, 3rd Mainland – Obalende Exp.	57712.35
7	Eko Oni Baje Garden	Airport B/stop, Agege Motor Road	7230.338
8	Gani Fawehinmi Freedom Park	Ojota B/stop, Ojota	25036.63
9	House of Assemble Park and adjoining Public Park	Lands B/stop, Alausa - Secretariat	21045.89
10	Landscape along Agege Motor Road	Between Ikeja B/stop and Bolade-Oshodi B/stop, Agege Motor Road	35770.00
11	Landscape along Ijora Cause Way	Ijora Olopa B/stop, Ijora	18249.84
12	Landscape along Ikorodu road (Obanikoro Park inclusive)	Between Town Planning B/stop and Onipanu B/stop, Ikorodu road	26690.00
13	M.K.O. Abiola Garden	Ojota B/stop, Ojota	14124.67
14	Muri-Okunola Park	Law School B/stop, Victoria Island	11000.00
15	Olutunda Park	Olutunda Street, Ilupeju	2260.733
16	Oshodi Heritage Park	Central B/stop, Oshodi	11437.26
17	PZ Park	Town Planning Way, Ilupeju	1551.940
18	Rotary Garden	Anthony-Isale B/stop, Ikorodu Road	9360.493
19	Tinubu Square	Broad Street, Lagos Island	2458.876

Source: Author's field work 2012

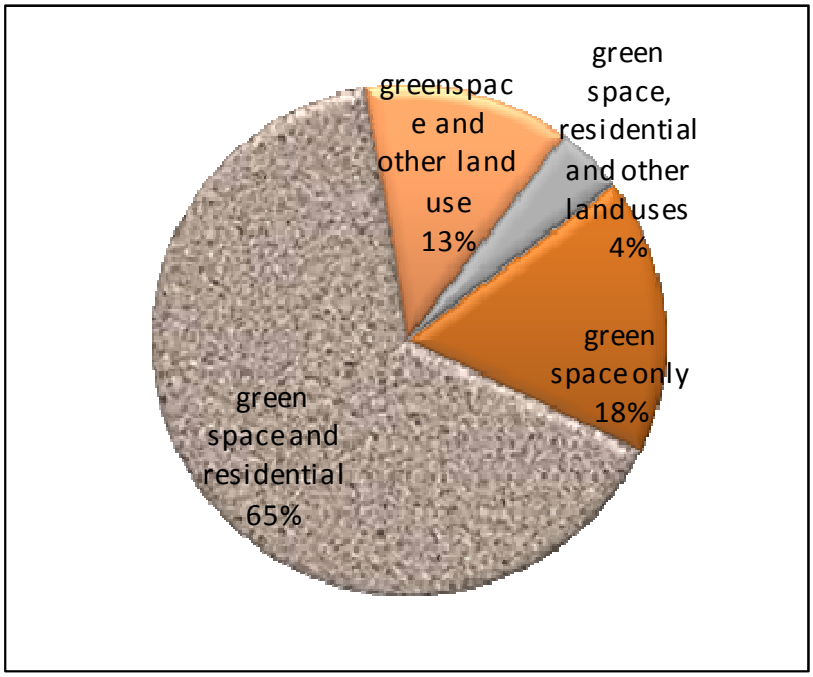

Figure 1: Relationship between green space and other land use in the Somolu-Ilupeju Scheme of 1961
Sources: (i) Town and Country Planning Law of Lagos State (CAP 188), 2004 and (ii) Author's fieldwork, 2012

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