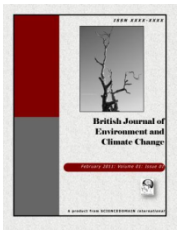

British Journal of Environment & Climate Change
1(3): 103-117, 2011

SCIENCEDOMAIN *international*
www.sciencedomain.org

Community Approach to Growing Greener Cities through Self-help Street Horticultural Gardens: A Case Study of Lagos, Nigeria

Albert Ayorinde Abegunde[1*]

[1]*Department of Urban and Regional Planning, Obafemi Awolowo University, Ile Ife, Nigeria.*

Case Study

Received 14th June 2011
Accepted 8th July 2011
Online Ready 12th August 2011

ABSTRACT

The study examines residents' concerns in greening their communities though self-help initiatives (SHI) carried out by individuals who utilise road set-backs to plant street horticultural gardens (SHG) in Eti-osa Local Government Area, Lagos, Nigeria. It purposefully administered questionnaire to managers of all SHG in the study area to establish their socio-economic characteristics, contributions to community greening and motivating factors behind their SHI. The study found that the horticulturists were nearly males (93.7%), young adults (54.0%), earning about three dollars per day (63.6%), have been in practice for more than four years (79.3%) and altogether using about 1.5% of land in the study area for SHG. A good number of them have contributed to voluntary greening of their communities through planting of trees (76.2%), hedges and shrubs (47.6%) and flowering plants (65.1%). The horticulturists' Motivating Index (HMI) employed to know why they went into the practice revealed that they (51%) were moved by the depreciating state of urban green (HMI=2.55) and feared (46.4%) the impending ecological doom on the built environment due to lack of sufficient green space, causing global warming (HMI=2.32). This could be why the linear regression test of the preference of social to economic value of the practice of SHG in the study area has its R^2 to be 0.219. This means that SHG in the area did not necessarily bring positive economic value to the horticulturists as the social value embedded in it. This study is a prove that literature and publicities on environmental effects of global reduction in green space seem to be yielding positive results in Africa as some individuals in the study area are taking into self-help initiatives in community greening, even where land seemed very scarce for such development. It concludes that literature on the subject should be more encouraged.

**Corresponding author: Email: abajesulo@yahoo.com; stegunde@yahoo.co.uk;*

Keywords: Urban green; horticultural gardens; communities; green space; self-help initiative;

1. INTRODUCTION

Publicities on greening of settlements, (particularly in mega cities that have little or no provision for green zones) have made green space development popular and a necessity in the modern times (Young, 2000; Transport Local Government Regions (DTLR), 2002; Evergreen, 2004). Despite these, many nations in developing nations are still far behind in green space planning and development. As observed by Food and Agricultural Organisation (FAO), (2010), most rapidly growing cities in the world are located in developing countries of Asia and Africa, where rapid urbanisation is at variance with green space development (Thanh, 2007). This has resulted in global warming, environmental degradation, poor urban health and low production of oxygen, compared to high quantity of carbon-dioxide generation from industries and automobiles among others. Many strategies are therefore been put in place to improve urban green space for sustainable city ecological growth and development (Chaudhy and Gupta, 2009). Common among such strategies are afforestation, urban agriculture, forest conservation and soft landscape planning among others.

One of the unpopular means of accomplishing community greening is the utilisation of road setbacks and vacant lots along streets for horticultural practice, with the ultimate goal of promoting green space development. It is obvious that road setbacks and vacant lots along streets exist virtually in every community in the world. Their utilisation and functionality however vary from one place to another. Most of the developing nations' road set-backs and lots are either neglected or under-utilised both by private and public developers purposely because such areas are not for private individuals. The neglect of such areas by charlatan government often leads to their abuse by the public who use the spaces for selfish and less beneficial purposes to the built environment. The slogan goes that a 'no man's land' is of no 'man's concern'. What this implies is that most road side vacant lots along streets in African modern urban cities are being neglected by their governments, not planned, abandoned by residents and therefore less beneficial to the community (Abegunde, 2008; Abegunde, Omisore, oluodo and Olaleye, 2009). Few countries however have successfully transformed their road set-backs and vacant lots to thriving community gardens and flower beds. Examples of this are common in South African cities (City of Cape Town, 2005; Roberts, 2009; FAO, 2010). This is an indication that street gardens can be of socio-ecological and physical benefits to man and his built environment. In another dimension, turning roadside vacant lots and setbacks to horticultural gardens has their ecological, aesthetic, health and physical planning implications.

Of recent, private individuals have been taking meaningful and non-egocentric interests in road set-backs that are abandoned or not planned for by some governments in Africa. Along this line, some of these private individuals have engaged such set-backs in recreational, agricultural, horticultural or terminus purposes (Bowman and Pagano, 2008). Specifically, some philanthropists have erected sculptural pieces, decorative and road guide signposts, bus-bay sheds and street light poles for public consumption.

Of interest in this study is the self-help technique of greening communities' through street horticultural practice, using road side lots and setbacks by private individuals. The term self-help as used in this write-up refers to the local initiatives in accomplishing community goal among challenges that would have required colossal efforts from public and non-

governmental authorities (Abegunde, 2004). This practice may not be very common in areas where people are wholly dependent on their government to meet all their societal needs (Warman, 2000; Moskow, 1998; Ladman 1993 and Schukoske, 2009).

It should be noted that many African governments have failed their people (Ayo, 2002; Akinola, 2010). This has resulted in socio-economic and physical problems in education, economy, governance, green space development, health and the general environment to mention but few; making self-help activities a necessity, virtually in all areas of societal and environmental needs in Africa. This could be why the literature on Africa is saturated with empirical works on community initiatives and self-helps that could reduce poverty, increase housing provision, eradicate illiteracy, improve social security, reduce corruption and safe the environment from degradation and disequilibrium (Landman, 1993; Bibic and Graziano, 1994; Abegunde, 2004; Gellar, 2005; Ostrom, 2005; Watts, 2008). Studies on greening the community through sreet horticultural practice, particularly by private individuals in Africa are not very common (Abegunde, Omisore, Oluodo and Olaleye, 2009).

The art of turning road set-backs to horticultural gardens in African nations therefore calls for enquiries. First, the decisions of private individuals to improve urban green and reduce global warming, using their personal initiatives and money without seeking help from public purse should be of concern in social planning. This is because people generally assume that poverty limits African residents to voluntarily contribute to the socio-economic development of their built environment, particularly in green space planning. Secondly, the practice of street gardening through self-help calls for a research as lesson from this may provide framework that could serve as impetus towards sustainable urban green space development in low income countries of the world in the global warming era (Bloom et al., 2008; World Bank, 2000; Williamson, 1998).

This study was therefore interested in the socio-economic status of individuals engaged in the practice of street horticultural gardening in Africa cities, particularly in Eti-osa local government area of Lagos, Nigeria where this study is based. It aimed at unravelling the motivating factors behind the practice of self-help horticulture by private individuals and the attendant problems and prospects of their initiatives towards greening of communities in the study area.

1.1 The Study Area with Its Attendant Green-Space Problem

Lagos is considered as one of the Africa's fastest growing cities and Nigeria's commercial nerve centre (Aluko, 2010). The city lies in \southwestern Nigeria, on the Atlantic coast in the Gulf of Guinea, west of the Niger River delta, located on longitude 3°24' E and latitude 6°27' N. On this stretch of the high-rainfall West African coast, rivers flowing to the sea form swampy lagoons behind long coastal sand spits or sand bars. Some rivers, like Badagry Creek flow parallel to the coast for some distance before finding an exit through the sand bars to the sea. The general structure of land use distribution in the study area (Lagos metropolis) shows that only 520 hectares (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 (Oduwaye, 2006). This is far below the 8-10 % of land area expected to be made available for green space in a residential setting.

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. Despite all the problems, little attention has been given to spatial distribution of green space in the city. The focus on street gardening that promotes aesthetic, provides green plants and by this promote community development calls for attention.

Eti-Osa East Local Government is one of the local government areas in Lagos that has limited land for physical development due to the presence of water bodies (see figure 1). The practice of street gardening in this area by private initiatives amidst limited area left for green space is an indication that there is a community initiative towards urban green development.

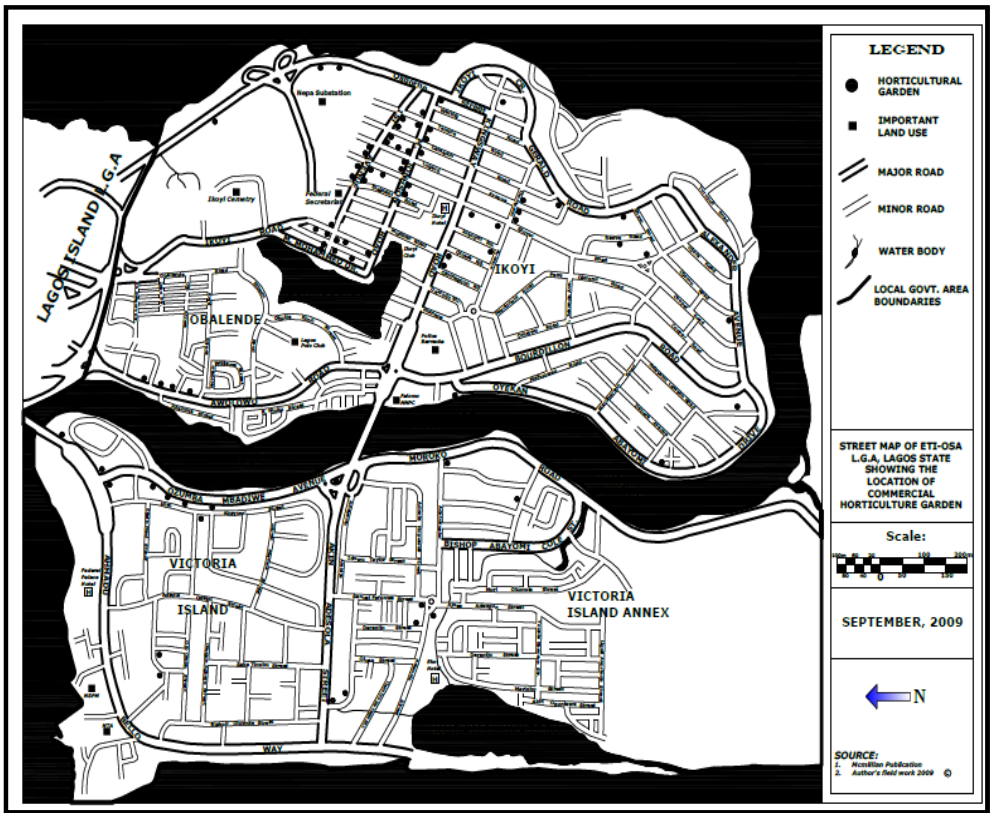

Fig. 1. Map of Eti-osa Local Government Area showing location of Street Gardens
Source: Abegunde et al., 2009; Author's Field Survey, 2010.

1.2 The Concept of Green Space and Green Belt

The rebirth of green belts [after the works of Ebenezer Howard (MacFayden,1970)] was the culmination of over 50 years of environmentalists pressure, with roots in the garden city movement, as well as pressure from campaign groups such as the Campaign to Protect Rural England (CPRE) (http://www.cpredevon.org.uk). In United Kingdom town planning, the green belt is a policy for controlling urban growth. The idea is for a ring of countryside where urbanisation will be resisted for the foreseeable future, maintaining an area where agriculture, forestry and outdoor leisure can be expected to prevail (Cofie, 2010). In other words, the fundamental aim of green belt policy is to prevent urban sprawl by keeping land

permanently open, and consequently the most important attribute of green belts is their openness.

Green spaces are therefore the 'green lungs' of our towns and cities contributing to improving people's physical and mental health by providing places for informal recreation - walking, cycling, sitting, socialising and children's play and 'breathing spaces' to take time out from the stresses of modern life. They bring the countryside into towns and cities, and enhance ecological balance in the built environment. Generally considered open to the public, green spaces are nevertheless sometimes privately owned. Some examples of such places include higher education campuses, neighbourhood/community parks/gardens, and institutional or corporate grounds. These areas still function to provide "aesthetic and psychological relief from urban development, (Springgate, 2008). Nevertheless, most commonly the term is used in reference to spaces that are public and green (Springgate, 2008).

A more acceptable working definition of green space is found in the work of County Council of Montgomery, Maryland (2008). The council perceives green space as an area of land associated with and located on the same tract of land as a major building or group of buildings, or a prescribed portion of the land area that provides light and air, or scenic, recreational, or similar amenity encompassed by a development plan, diagrammatic plan, or site plan. According to the council, this space must generally be available for entry and use by the occupants of the building/buildings or area involved. It may however include a limited proportion of space so located and treated as to enhance the amenity of the development by providing areas with landscape features for screening, for the benefit of residents or those in neighbouring areas or a neighbouring tract of land. Green area may include (but is not limited to**)** a feature such as lawn, decorative planting, and passive recreational areas including children's playground, landscaped set-backs, wooded area and watercourse to mention but few. Green area does not include the area of any parking lots or vehicular surfaces and building footprint with concreted or tarred surfaces.

A green belt is a term used in land use planning to explain an area retained largely for green purpose. It could be undeveloped, wild, or agricultural land surrounding neighbouring urban areas. Similar concepts are greenways or green wedges which have a linear character and may run through an urban area instead of around it. A green belt is basically guided and guarded by an invisible line that goes around a certain area, stopping people from encroaching into them so that some of the wild and agricultural land can be saved (Wikipedia, 2010). In those countries which have them, development in green belt areas is heavily restricted. The stated objectives of green belt policy are to, protect natural or semi natural environments; improve air quality within urban areas; ensure that urban dwellers have access to countryside, with consequent educational and recreational opportunities; and protect the unique character of rural communities which might otherwise be absorbed by expanding suburbs.

2. RESEARCH METHODOLOGY

The methodology used in this research work was the identification of all the different spots where street gardens were located in the study area. During this process, a pilot study was carried out to test the suitability of the questionnaire to be administered. At this stage just five practising street garden owners were selected at random from five different streets. These streets were also selected at random from the number of streets identified with horticultural practice in the study area. Two respondents were chosen from Victoria Island

and the remaining three from Ikoyi. During the research, a total number of seventy-five (75) gardens were identified. Although the methodology intended to administer questionnaire on the entire identified practitioners of street gardening in the area, a total number of 63 of them were eventually interviewed, as the managers (owners) of the remaining 12 street gardens could not be reached during the processes of questionnaire administration. This method of sampling is purposive because it was specifically directed at specific individuals who engaged in road side horticultural practice in the study area.

The questionnaire inquired on the socio-economic characteristics of the horticulturists, economic value of their gardens, their contributions to community development, sources and cost of input of production in the gardens and quantity of output and returns from sales of output products; problems and prospects of the street horticultural practice in the study area among others. The study also measured plot sizes of these gardens to determine the area of land used by each gardener.

Data were analysed using descriptive statistics, regression model and Horticulturist Motivating index (HMI), as derived from Resident Satisfaction Index (RSI) in the work of Afon, 2007. This is expressed with the equation $\overline{HMI} = \frac{\sum HMI}{(N)}$,

where $\overline{HMI}$ = Deviation of HMI, and its Variance = $\frac{\sum\left(HMI - \overline{HMI}\right)^2}{N}$

Its Co-efficient of variation = $\left[\left(\frac{SD}{\overline{HMI}}\right)x100\right]\%$

3. FINDINGS AND DISCUSSION

3.1 Socio-economic Background of Street Horticulturists in Eti-osa Local Government, Lagos, Nigeria

The socio-economic characteristics of respondents who took personal initiatives into street horticultural gardens in this study focused on their gender, marital status, educational level, household sizes and years of experience in the practice. Table 1 shows that the practice was dominated by male respondents (93.7%) of which two-fifth of them were single (42.9%) and married (41.3%) while a handful of them were divorced (9.5%) respectively. Information on their educational level revealed that very few (14.3%) of them lacked formal education; while a little over one quarter (27.0%) of them have been to tertiary institutions. Those with secondary and primary school certificates were 36.5% and 22.2% respectively.

The study showed that a little above half (54.0%) of the horticulturalists were below the age of 40 years, with about three quarter (79.4%) of them practicing street horticultural gardening for more than four years before the time of this study. Findings further revealed that more than two-third (63.6%) of them earned above N29,999 (Nigeria currency) per month (about 3 Dollars per day).

Table 1a. Gender of Street Horticulturists in Eti-osa Local Government, Lagos, Nigeria

Gender	Frequency	Percentage
Male	59	93.7
Female	04	6.3
Total	63	100.0

Source: Author's field survey data, 2009.

Table 1b. Marital Status of Street Horticulturists in Eti-osa Local Government, Lagos, Nigeria

Marital status	Frequency	Percentage
Single	27	42.9
Married	26	41.3
Widowed	04	06.3
Divorced	06	09.5
Total	63	100

Source: Author's field survey data, 2009.

Table 1c. Educational Status of Street Horticulturists in Eti-osa Local Government, Lagos, Nigeria

Educational Status	Frequency	Percentage
Informal	09	14.3
Primary school	14	22.2
Secondary school	23	36.5
Tertiary	06	27.0
Total	63	100

Source: Author's field survey data, 2009.

Table 1d. Years of Experience in Street Horticultural Practice in Eti-osa Local Government, Lagos, Nigeria

Years of experience in the practice	Frequency	Percentage
Below 4 years	12	18.1
4-8 years	36	57.1
Above 8 years	15	23.8
Total	63	100

Source: Author's field survey data, 2009.

Table 1e. Age of Street Horticulturists in Eti-osa Local Government, Lagos, Nigeria

Age	Frequency	Percentage
20-29 years	24	38.1
30-39 years	24	38.1
40-49 years	15	23.8
Total	63	100

Source: Author's field survey data, 2009.

Table 1f. Monthly Income of Street Horticulturists in Eti-osa Local Government, Lagos, Nigeria

Income (in Nigeria Naira)	Frequency	Percentage
Below 20,000	10	15.9
20,000-29,999	13	20.4
30,000-39,999	16	25.4
40,000-49,999	09	14.3
50,000-59,999	06	9.6
Above 60,000	09	14.4
Total	63	100

Source: Author's field survey data, 2009.

3.2 Contributions of Street Horticultural Gardens to Greening of Communities in Eti-osa Local Government Area of Lagos, Nigeria

Table 2 revealed that a good number of street horticulturalists in the study area have engaged themselves in planting trees (76.2%), hedges and shrubs (47.6%) and flowering plants (65.1%) in public places for the benefits of people living in the studied communities. Significant among the contributions of street gardens to community development in the study area is its social benefits. Physical observations during reconnaissance survey revealed that garden located along some streets attracted residents to come together to relax and recreate during hot weather or at evening, after daily works.

Table 2. Horticulturists' Contributions to Public Greening of Communities in Eti-osa Local Government Area of Lagos, Nigeria

Respondents' contributions	Frequency	Percentage
Those who have planted trees for public use	48	76.2*
Those who have planted hedges and shrubs for public use	30	47.6*
Those who have planted flowering plants for public use	31	65.1*

*Source: Author's field survey data, 2009. *Multiple responses recorded*

Plate 1 shows one of the horticultural gardens planted on both sides of the road in Ikoyi, Eti-osa Local Government Area, Lagos, Nigeria, creating shade along the streets and improving the aesthetic value of the area.

Plate 1: A Street Horticultural Garden, Planted on both sides of the road in Ikoyi, Eti-osa Local Government Area, Lagos, Nigeria.

3.3 Land Area Covered by Street Horticultural Gardens (Green Space Contribution)

Below is a simple mathematical calculation of the land area used for street gardening in the study area:

Total area of land (and water bodies) in Eti=Osa Local Government{y} = **3060175 m^2**
(Derived from the map of the area as revealed in Figure 1)

Total area covered by water bodies {b} = **758903 m^2**
(Derived from the map of the area as reflected in Figure 1)

Total land area (less street horticultural gardens){c} = ?

Total land area devoted to street horticultural gardens {a} = ?

If a = (g_1+ g_2 + g_3+ g_3 + g_4 +..... g_{63}) *as obtained by physical measurement on each garden in the study area*

Where g = plot size of street horticultural garden (m^2)
a = total land area devoted to street horticultural gardens (m^2)

a = (120 + 128 + 159 + 168 + 168 + 170 + 180 + 190 + 202 + 210 + 210 + 240 + 310 + 338 + 344 + 350 + 350 + 355 + 363 + 386 + 396 + 400 + 431 + 445 + 471 + 483 + 487 + 495 + 496 + 498 + 500 + 503 + 510 + 518 + 520 + 528 + 530 + 538 + 539 + 554 + 555 + 560 + 562 + 577 + 584 + 590 + 602 + 612 + 612 + 635 + 640 + 668 + 678 + 798 + 820 + 837 + 842 + 870 + 871 + 899 + 900 + 980 + 1200)m^2 = **31675.**

Then, a = **31675 m^2**

if y = a + b + c
y - (a+b) = c
3060175 – (31675 + 758903) = c
3060175 – 790587 = c

C = 2269588 m^2 or 560.83 Acres {Total land area in Eti-osa Local Government (excluding areas used for street horticultural gardens}

% of land use for commercial horticulture garden

$$= \frac{a}{c} \; x \; \frac{100}{1} = \frac{31675}{2269588} \; x \; \frac{100}{1} = 1.4\%$$

The study shows that the total area used for street garden alone, which contributed to urban green space is 1.4% of the entire study area. It should be noted that this percentage is not part of the planned area meant for public green space in the study area. This is because nearly all the studied street gardens were located on road setbacks in the study area as reflected in plates 1, 2 and 3 and Table1 accordingly. This clearly shows that most of these street horticultural gardens are additional green area in the study area; and thus contributed their quota (no matter how minor) to green space area in Eti-osa Local Government, Lagos, Nigeria.

3.4 Regression Test of Preference of the Social Value of Street Horticultural Gardens in the Study Area

Table 3 reflects a test on whether investment in each garden determines the annual profit of a garden was conducted using regression analysis. The test was conducted using 5% significant level. The goodness of fit test was measured by the coefficient of determinate (R^2). From the regression result, the observed r-square (R^2) = 0.219, this implies that only 21.9% variation in the annual profit is jointly explained by the investment in each garden while the remaining 78.1% will be accounted for error term. This implies that the quality and types of product stocked in these gardens are not enough to justify the economic gain realized by each garden owner. This means that street gardening in the study area does not necessarily bring positive economic gain to the purses of the concerned horticulturists as social value embedded in green space development in the study area. This is an indication that people in Eti-osa Local Government Area were possibly interested in greening their streets; hence, utilized road setbacks in their environment for street gardening, irrespective of the effects of these on their purses.

Table 3. Regression Test of Preference of the Social Value of Street Horticultural gardens in the Study Area.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.468[a]	.219	.206	206108.128

a. Predictors: (Constant), Plot size of the garden (in metre-square)

3.5 Respondents' Motivating Factors for engaging in Self-help Street Horticultural Practice in Lagos, Nigeria

The horticulturists motivating index (HMI) method adopted in this research work was used to measure suggested factors that motivated the horticulturists in planting horticultural gardens along streets in their communities. To do this, the horticulturists were instructed to rate the three suggested measures using any one of the five ratings: *very much agree*, *agree*, *just agree*, *not agree* and *not at all agree*. Each of this was also assigned a value of 5, 4, 3, 2, and 1 accordingly. The closer the level of agreement on each variable to 5, the stronger is the suggested motivating factor to the respondents as at the time of this study.

As revealed in Table 4, argument that "the state of urban green was depreciating as city grows, calling for individuals' concerns" was accorded the highest HMI of 2.55. This was followed closely by the view that "the fear of doom behind global warming pushed concerned minds to greening their communities". The latter variable has its HMI to be 2.32. It should be noted that the closer the HMI to five the better the rating. The former variable was more than half (2.55) of 5 and so significant, having a rated percentage of about 51. This could be why its deviation index ($\overline{HMI}$) was high (0.394). Although, the latter variable with HMI of 2.32 (46.4% of the total measured value) was less than half of 5. It was very close to 50% of the rating in the considered variable, and so could be counted significant in examining motivating factors behind self-help community greening through street horticultural practice in the study area. The table showed that the argument that "government's concern for greening communities in Lagos, Nigeria was very low..." as a motivating factor behind planting of horticultural garden in the study area seemed not to be very popular, with its HMI being 1.60 (32%), compared to the afore mentioned variables.

This could be why its deviation index was negative (-0.56). The variables with positive deviation about the mean of HMI were the motivating factors that seemed to have supported why the respondents in this study determined to practice street horticulture in the study area. In other words, these opinions are that "urban green was depreciating as city grows in Lagos, Nigeria" (with deviation index to be 0.394) and that "this may spell doom on the residents in the nearest future due to global warming" (with its deviation index to be 0.16). This assertion is further justified by the information revealed in Table 4 that people in Eti-osa, Lagos, Nigeria went into street gardening because they were concerned about green space development of their communities and thus rated social value attached to it than the economic effects this might have on their purses.

This is an indication that global publicity on green conservation to prevent depletion of oxone layers as advocated by World Bank (World bank, 2008), Food and Agricultural Organisation (FAO, 2010) and the academics (Moss-Eccordt, 1973; Moustier, 1999; Lazarus, 2005; Abegunde *et al*, 2009. Chaudhry and Gupta, 2009 and Roberts, 2009) among others are yielding positive results among residents in developing nations of the world.

4. SUMMARY OF FINDINGS AND PLANNING IMPLICATION

The study clearly revealed that international efforts and public enlightenment about indispensability of green space development in urban areas and danger behind depletion of Oxone layer and its effects on climate change in the 21st century seem to be yielding results, particularly among residents in developing nations of the world.

Table 4. Respondents' Motivating Factors for engaging in Self-help Street Horticultural Practice in Lagos, Nigeria

S/N	Effect of mining	Rating and weight value								
		Very much agree WV (5)	Agree WV (4)	Just agree WV (3)	Not agree WV (2)	Not at all agree WV (1)	SWV	HMI	Deviation HMI - $\overline{HMI}$	(HMI- $\overline{HMI}$)^2
1	Government's concern for greening communities was very low, hence self-help engagement	39	26	27	4	5	101	1.60	-0.56	0.3136
2	The state of urban green was depreciating as city grows, calling for individuals' concerns	07	60	39	40	15	161	2.55	0.394	0.1552
3	The fear of doom behind global warming pushed concerned minds to greening their communities	12	41	81	12	00	146	2.32	0.16	0.0256
	Total	**58**	**127**	**167**	**56**	**20**	**408**	**6.47**		**0.4944**

Source: Author's analysis, done in 2011.

Note:
WV means Weighted variable; SWV means Summation of all weighted variables; HMI means Horticultural Motivating Index.

$\sum HMI$ = 6.47, $\overline{HMI} = \frac{\sum HMI}{(N=3)} = \frac{6.47}{3} = 2.156$ $\overline{HMI}$ = 2.16 Variance = $\frac{\sum\left(HMI - \overline{HMI}\right)^2}{N} = \frac{18.576}{3} = 6.192$

Standard deviation (SD) $\sqrt{Variance} = \sqrt{6.1922}$ = 2.5

Co-efficient of variation = $\left[\left(\frac{SD}{\overline{HMI}}\right)x100\right]\% = \left[\left(\frac{2.5}{2.16}\right)x100\right]\% = 4.926108 = 4.93\%$

It showed that despite that the street horticulturists earned about 3 Dollars per day they still rated the social value of urban greening above the economic effects of this on their purses. This could be why the observed r-square in the regression tested was (R^2) = 0.219, implying that only 21.9% variation in the annual profit is jointly explained by the investment in each garden while the remaining 78.1% will be accounted for error term. In the corollary, the tested horticulturists Motivating index (HMI) expressing concern for urban green space in their communities was more than average (2.55) (51%). In addition, lack of adequate space to express their interest in greening their communities did not deterred them from utilising available set-backs to roads for street horticulture. This is because most of these horticultural gardens were located along road sides, giving no set-backs to abutting lanes.

The study showed that if individuals in the study area could strive to promote urban green area by practicing street horticultural gardens, using road set-backs; residents in other locations where land is less scarce for open space could do better. This can only be accomplished when such residents are well informed and sensitised towards green space development. Implicit to this is that empirical examples in Eti-osa local Government Area, Lagos Nigeria is an encouragement towards possibility of having green communities through urban horticulture elsewhere. City and urban planners need to approach street gardening through public enlightenment. Along this line, planners must incorporate street gardening as a viable land use in the city so that interested citizens can accept and contribute to this activity as part of the urban reality. These ideas would also be relevant to policy makers on issues that touch environment and green space development in third world nations.

5. CONCLUSION

The study clearly revealed the role that individuals can play in promoting urban green in Africa. It also showed the formality of green zones that urban planners could make from informal areas like set-backs to roads that are not originally designed for green area. This study is not absolutely supporting the art of using all road set-backs for horticultural purpose. It rather opined that the advantage in it usage for such purpose, the self-help initiatives from concerned individuals in an environment where land is very scarce and limited and non-governmental responses from individuals to meeting green space needs in the 21st century is an indication call for a rethink and serve as encouragement to other communities where land is available and yet lack green space development. In other words, while this study is a stimulus to other communities, there is the need for urban planners who have been formally saddled with land use affairs and green space development to monitor all that are within their jurisdiction within supra urban setting. In addition, more literature on the subject of green space may possibly stir more public interests on it in the global warming era.

REFERENCES

Abegunde, A.A. (2008). Promoting urban land economy in africa through effective layout design and management. Proceedings of Leadership Mgt. Studies in Sub-Saharan Afr. Accra, Ghana. ed. Romie F. Littrell.

Abegunde, A.A. (2004). Community based organizations in the sustainable development of the rural area of Atiba L.G.A., Oyo State. NITP J., Vol. xvii, 1-14

Abegunde, A.A., Omisore, E.O., Oluodo, F., Olaleye, D. (2009). Commercial horticultural practice in Nigeria; its socio-spatial effects in Lagos City. Afr. J. Agric. Res., 4(10).

Africa Service News (1999). Yeoville Grows Back to Its Roots, Afr. Service News, Apr. 16, 1999, available in 1999 WL 14357204.

Aluko, O.E (2010). The Impact of urbanization on housing development: The Lagos Experience, Nigeria. Ethiopian J. Envtal. Stds. and Mgt., 3(3).

Akinola, S.R. (2010). Restructuring the public sphere for social order in Niger Delta through polycentric planning: What Lesson for Africa? Afr. Asian Stds., 9, 55-82.

Ayo, S.B. (2002) Public administration and the conduct of community affairs among the Yoruba in Nigeria. Indiana University, Indiana Minneapolis.

Bibic, A., Graziano, G. (1994). Civil Society, Political Society and Democracy. Ljubljana: Slovenina Political Science Association.

Bloom, D.E, Canning, D., Fink, G. (2008). Urbanization and the wealth of nations. Science, 319 (8 Feb. 2008), 772-775.

Bowman, A.O., Pagano M.A. (2008). Urban vacant land in the united states. Lincoln Inst. of Land policy working paper, 2008.

Campaign to Protect Rural England (CPRE). CPRE campaigns for a sustainable future for the English countryside, a vital but undervalued environmental, economic and social asset to the nation. http://www.cpredevon.org.uk/.

Chaudhry, Pradeep, Gupta, Rajesh K. (2009). Urban forestry in arid region of India. Silviculture Division Arid Forest Res. Inst. Jodhpur

County Council for Montgomery, Maryland (2008). County Council for Montgomery, Maryland http://www.montgomerycountymd.gov/content/council/pdf/bill/2007/33-07.pdf

City of Cape Town (2005). Internal Displacement Project Review for South Africa. IDP project. Norwegian.

Cofie, Olufunke (2010). Emerging Issues in Urban and peri-urban agriculture (UPA) in West Africa. Briefing Note. International Water Mgt. Institute. www.ruaf.org.

Earth Trend Country Profile (2003). Economic Indicators in Nigeria. http://earthtrends.wri.org.

Evergreen (2004). Green space acquisition and stewardship in Canada's Urban Municipalities. www.evergreen.ca

Food and Agricultural Organisation (FAO) (2010). Growing greener cities. FAO Publishing Policy and Sppt. Branch, Office of Knowledge Excg., Res. and Ext., FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy.

Landman, R. (1993). Creating Community in the City. Cooperatives and Community. Gardens in Washington, D.C 100 (1993).

Lazarus, C. (2005). Urban Agriculture: Join The Revolution. Comty. Scale Econs. New Village Press, Oakland. Issue 2, CA 94609. 2005.

MacFayden, Dugald. (1970). A review of Garden Cities of To-Morrow, MIT Paperback Series.

Moss-Eccordt. (1973). An illustrated life of Sir Ebenezer Howard, 1950-1928. Shire Publica tions Ltd. UK, 10pp.

Moskow, A. (1998). The contribution of urban agriculture to gardeners, their households, and surrounding communities: the case of Havana, Cuba. For Hunger-Proof Cities: Sust. Urban Food Systems 77

Moustier, P. (1999). Définitions et contours de l'agriculture périurbaine en Afrique Subsaharienne. In: P. Moustier, A. Mbaye, H. de Bon, H. Guérin, J. Pagès (eds), Agric. périurbaine en Afrique subsaharienne, CIRAD, Colloques, pp. 17-29.

Oduwaye, L. (2006). Effects of Globalization on Lagos Cityscape. Research Review Ns 22.2 (2006) 37-54

Ostrom, Elinor. (2005). Understanding Institutional Diversity. Princeton and Oxford: Princeton, N.J.: Princeton Univ. Press.

Roberts, Debra C. (2009). Environmental Conservation. Foundation for Envtal. Cons. Vol 21, Is. 1 (1994), 21, 11-17. Published online in 2009.

Schukoske, J.E. (2009). Community Development through Gardening: State and Local Policies Transforming Urban Open Space. Comty. Devpt. Legislation and Policy. Vol. 3: 351, University of Baltimore, 2009.

Springgate, Lee. (2008). Defining Parks and Park Systems. Recreation to Re-creation. American Planning Association.

Thanh, L. (2007). Economic development, urbanization and environmental changes in Ho Chi Minh City, Vietnam: Relations and policies. Paper presented to the PRIPODE workshop on; Urban Pop., Devpt. and Env. Dynamics in Devping. Countries. Nairobi, Kenya.

Transport Local Government Regions (DTLR). (2002). Report of transport local government regions (DTLR) on Green Spaces, Better Places. Eland House, Bressenden Place, London SW1E 5DU, www.dtlr.gov.uk.

Warman, D.S. (2000). Community Gardens: A Tool for Community Building, UrbanAgriculture. <http://www.cityfarmer.org/waterlooCG.html#waterloo>. Assessed on the 28th April, 2011.

Watts, Michael (2008). The rule of oil: petro-politics and the anatomy of an insurgency. Unedited conference proceedings, International Confr. on 'The Nig. State, Oil Industry and the Niger Delta,' 40-52. March 11-13, in Yenagoa, Beyelsa State, Nigeria. Port-Harcourt: Harey Pubs. Co.

Williamson, J. (1998). Growth, distribution, and demography: some lessons from history. Explorations in Econ. History, 35(3): 241-271.

World Bank (2000). Entering the 21st Century: Dynamic Cities as Engines of Growth. World Devpt.Report, Washington DC: World Bank.

World Bank (2008). World development report 2008: agriculture for development World Bank - 2007 - Business & Economics - 365 pages books.google.com.ng/books

Young, Terence, Travis, Longcore. (2000). Creating community greenspace: aahndbook for developing sustainable open spaces in central cities. California League of Conservation Voters-Education Fund.