The
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School of Environmental Studies
Yaba College of Technology
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Editors' Comments

The previous two editions of the publication committee came under the name “The Environ news”. This name did not signify any serious academic journal. When the present committee was constituted, the Dean, Ukabam, T.A. gave us a mandate to think out a name for an academic journal befitting the School of Environmental Studies of the foremost citadel of knowledge in Nigeria. This led to the new name “The Yaba Journal of Environmental Research”. This journal will radically depart from Environews in some respects namely it will be regular, have wider audience and will contain issues of current debate.

This first edition of the Yaba Journal of Environmental Research obtained its twelve articles published from three disciplines of the Environmental Sciences such as Estate Management, Quantity Surveying and Urban and Regional Planning including one from the bursary.

Udoetuk, N.V researched on comparative evaluation of the performance of the rental and capital values of residential properties in Victoria Island, Lekki Peninsular Phase I, Ikeja and Agege; and found out that the residential property investment in Victoria Island and Lekki Peninsular Phase I showed highest rental and capital value growth while Ikeja and Agege showed lower returns.

Oke, J.O. studied Environmental Management and Protection for Sustainable Development in Nigeria and discovered that a protected and well-managed environment will not only bring development but also sustain it. He recommended that revitalizing FEPA, enhanced environmental knowledge and information are key to effective environmental protection and management.

Ukabam, T.A. used Pearson's product moment correlation to analyze data on the relationship between housing quality and residential property values in Yaba and Ebute Metta Lagos and found out that improvements in the number of kitchen, bathroom, toilet, standard room and etc might increase the rental values of residential properties in these areas.

Street trading has been a problem for urban managers but Omolabi Abimbola writing on Controlling the Menace of Street Trading in Lagos metropolis suggested that it should be seen as a social necessity which should be accommodated.

Olaseni, A.M. researched on development control in Lagos State: Contemporary Challenges to the Urban and Regional Planner in Cities Competitiveness, and suggested that professional practice should be strengthened, deregulating some stages of the control process, broad based public participation and capacity building among many others.

Oyebanji, A.O. looked at sustainable development at the grassroots level in Nigeria and suggested that every stakeholder in the grassroots development must have a change of attitude and be ready to commit every available resources to it.

Ibiyemi A.O. researched on the economics of solid waste Management in Lagos State and used Chi-square Goodness-of-fit test to find out that less than 20% of solid waste generated in Lagos State is recovered and etc.

Fashina Oladipupo wrote on Road Transport Management through Intelligent Transport System (ITS): a study of Lagos Metropolis and recommended that time is ripe for road transport managers to use cameras, sensors, communication and positioning devices through computer to
manage road transport. Alabi, Folasade O used descriptive statistics to analyze the causes, effects and strategies for reducing cost and time overruns on construction projects: Construction Practitioners' views and found out that cost and time overruns occur very often on projects irrespective of size, clients were more responsible and government/public projects were more prevalent as well as inadequate financial provision and project planning. The effects were project abandonment and loss of profit to the contractor. Ojo-Fajuru, J.O. investigated the ways of ameliorating Urban Environmental Problems for Sustainable Development in Ado-Ekiti and found out that traffic congestion, accidents and conflicts; environmental pollution and degradation; and Urban sprawl have reached crisis levels in this capital city. He recommended provision of qualitative and quantitative housing stock, improvement on traffic and circulation network and many more, as cure to these problems. Adesanya, Abiodun Adebayo introduced the dimension of business management where he examined the internal control mechanisms of business organisation to ensure effective and efficient accountability. He found out that effective internal control systems will go a long way in checking errors and fraud in business organisations. He recommended among others the education of organisation in internal system independent inspectors, employment of experienced staff in the inspection division. Finally, Kuye Olusegun's appraisal of the capital market as real estate finance through the capital market and he found out that the Nigerian capital market is a viable, vibrant and veritable source of financing businesses other than real estate business as only two firms is so far listed in the NSE among many other findings. He recommended that an appropriate awareness be created about the benefits and functions of the capital market to users via proper information dissemination and the establishment of more Stock Exchanges, at least one in each of the Nigeria's six geo-political zones so as to further ensure easy access by all and sundry. While we present our new look educative and enlightening journal for your reading pleasure, we also solicite and call for research based articles from academics and non-academic to publish with us.

OKOH, Victor P.O.
Editor-in-Chief
COMPARATIVE EVALUATION OF THE PERFORMANCE OF RESIDENTIAL PROPERTIES IN SELECTED AREAS OF LAGOS STATE

BY

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ABSTRACT

The National Housing Policy 1991 recognizes the past encouraging performance of the private sector in housing development and delivery in Nigeria. The policy also encourages future greater participation by the private sector in housing delivery and has been re-emphasized in recent reforms. However, the private sector investor will not just delve into housing development based on government policies and prompting. It will be very logical for the investor to pulse and ask questions as to the past achievements and future strategies. The private sector being profit driven, will naturally invest in the types of residential properties that will ensure optimum financial returns; paying particular attention to the locations that will guarantee income growth and capital appreciation. Thus, this study has sought to equip the investor with the investment potentials of residential properties in selected parts of Lagos, based on a comparative evaluation of the performance of residential property investments in selected areas of Lagos from 1990 to 2004. A survey was undertaken on the rental and capital values of properties in Victoria Island, Lekki Peninsular Phase I, Ikeja and Agege based on interviews with some estate surveyors and valuers. From this survey the capital and rental values and returns on investment on flat, detached and semi-detached houses, in the selected areas were established for the period under study. The findings show that residential property investment in Victoria Island and Lekki phase I produce the highest rental and capital value growth. Also the returns on the investments were the highest in these areas during the period under study. Residential property investments in Ikeja and Agege showed lower returns. The returns from investment on flats in Ikeja and Agege showed a remarkable increase in the last three years when compared to the returns on detached houses and semi-detached houses in these areas. Based on these findings it was recommended that investors should look more towards areas yielding highest returns and offering best potential while efforts should be made to boost investment performance in other areas.

INTRODUCTION

An investment essentially involves an initial outlay to recoup a future income stream or future capital repayment. According to Isaac (1996) an investment is an asset which produces income during or at the end of the life of the asset. There are three main areas of traditional investment opportunity (excluding gold, commodities and work of art) namely: fixed interest securities, company stocks and shares, real property. The stock exchange which is centralized provides a market for listed shares and certain fixed securities while the property market is fragmented and dispersed. Before undertaking an investment, an investor, analyzes what is required of the investment and according to Isaac (1998), the approach to the analysis is best done as a check list of questions and answers, which ranges from security and regularity of capital and also liquidity, security and regularity of income, opportunities for growth in value, etc.

The prospective investor uses these qualities of a good investment as a bench mark for determining the suitability of alternative or
possible investment opportunities. Some investments out perform others in this comparison. Two objectives which are common to all investors are: (a) They want 'return' to be high. The appropriate definition of return may vary from investor to investor but in whatever sense is appropriate they prefer more of it to less of it. (b) they want this return to be dependable and stable, not subject to uncertainty (Markowitz 1991.6). Dubben and Sayce (1991) suggest that there are four criteria that an individual or institution would use to select a property for investment based on the following questions: (ii) Do the particular characteristics of the investment satisfy the investment needs of the investor in terms of security, growth and other aspects? (iii) Is the price to be paid reasonable in all the circumstances (iv) Is the property suitable in terms of portfolio balance? (v) If the need to alter the portfolio changes will be property be readily saleable? Also it is crucial to show the past performance of similar or comparable investments to enable the investor make strategic management decisions. Isaac (1998) opines that strategic property decisions would determine the proportion of the total portfolio to be devoted to property, the allocation of funds to the different types of property.

There are several definitions of residential properties or housing. In the context of this study however, housing residential is defined as a physical facility, unit or structure which provides shelter to its occupants. It is also an economic good or commodity a consumer durable good, which is traded or exchanged in a market and as an 'investment' good which returns equity to its owner. Thus investment in housing (ignoring) the sentiment of land and building) is basically a flow of income arising from a property asset which can be distributed in many different ways to offer investors differing degrees of risks and thus differing yields and capital values (Isaac, 1998). Therefore, if investors are to decide on different options or types of property to invest in why would they choose housing or residential property investment over other options? If they choose to invest in residential properties, what type of residential properties should they invest in, and in what areas, location or neighbourhoods? To assist in providing guidance in these areas, the study sought to answer the following research questions:-

(1) Has there been growth in the rental and capital values of the residential properties?
(2) What have been the returns on the properties?
(3) What relationship do the capital values, rental values, returns have with the study period/or time? (4) What is the performance of these properties?

The aim of this study is to undertake a comparative evaluation of the performance of individual property investments in selected areas of Lagos from 1990 to 2004. The following objectives were pursued:

(1) To establish if there has been growth in rental and capital values of residential properties in the selected areas during that period
(2) To determine the returns on the properties during the period
(3) To determine the relationship if any, between the three indices (Rental Value (RV), Capital Value (CV) and Return) over the period under study?
(4) To evaluate the performance of the properties within the selected areas using the findings under objectives 1-3 above.

The residential properties considered in this work are flats, semidetached house and
detached house because these are housing types most commonly invested in by the class of investors the paper aims to advise. The selected study areas are Victoria Island a high income low density residential/commercial area of Lagos which has been in existence prior to Nigerian independence. Lekki a high income low density residential neighbourhood which emerged in the early 1990's. Ikeja consists of mixed residential, commercial and industrial neighbourhoods. The residential areas vary from high, medium to low density categories. Agege is a mixed residential and commercial neighbourhood of predominantly high density development. The value indicators have been restricted to the period 1990 to 2004.

**THE PROPERTY MARKET**

Keogh (1994) provides a model of the property investment market and this shows that property investment is part of a market, which includes a user market, an investment market and a development market. While Fraser (1996) also suggests a schematic model of the property investment market which concentrates on the interrelationship of the market in three principal sectors: the letting, user or occupational sector, the investment sector, and the development sector. Fraser's model has a single ring with three arcs for the principal market sectors. It provokes a context of international national and local economies to the setting of the market and suggests that occupational demand drives the letting market, investment demand drives the investment market and development costs the development sector; these three sectors in turn establish the property stock. While Isaac (1998) opines that the other division of the investment market is to look at the types of property involved. Thus the main sectors or traditional classes in the investment market are: Retail and retail warehousing, offices and business space, industrial and warehousing, agricultural land and woodland, leisure and healthcare, residential.

**Residential Property:** Lawal (1997) sees housing or residential properties in 3 dimensions viz:private institutional and public. Non government agencies and individuals initiate private housing development for investment or occupation. Institutional housing is meant to serve the collateral interests of institutions (e.g. the military, university) whose goals are the provisions of facilities without reference to profit. Public housing is government supported housing programmes created by a wide variety of legislative, administrative, administrative and financial mechanisms as a means of providing decent, safe and sanitary housing at affordable cost. (Lawal 1997).

Bourne (1980) sees the residential property market as a mechanism for allocating housing. He cites two principal mechanisms for allocation:- the traditional private 'market' which allocates households to housing on a competitive basis in terms of the values people attach to housing and their ability to pay; and the other being the public sector allocation in which governments, housing officials or some other community group, distribute housing according to individual and collective needs and the objective of the agencies involved. Lawal (1997) further creates two subdivisions of private sector housing type viz: (a) Single dwelling residential buildings which are (detached) individual houses and bungalows; including semi-detached and row houses called 'town houses'. In these types, consumers or enjoy the conventional detached single family house benefits (e.g. private entrance, multi-story separation of living and
work spaces, backyard patio etc). According to Lawal (1997) the single dwelling residence is a prime example of real estate purchase or development for use rather than investment. However in recent times a very high percentage of such dwellings are being let, thus becoming an avenue for investment. (b) Multi dwelling residential buildings. There are maisonettes flats and rooming tenement buildings, which are mainly developed for investment.

PERFORMANCE EVALUATION CONCEPT
The private market for housing is characterized by efficiency in terms of maximizing output while minimizing overall levels of excess prices and rents; and maintaining adequate rate of return on the investment. (Kalu, 2001). The measure of return to an investor is the amount of capital growth or rental income from an investment purchased or valued overtime (Isaac, 1998). In Fraser's (1996) opinion the rental value of occupation interests influences the income and value of investment interests. To measure the return from an investment in property entails the evaluation of the property’s performance.

The Need for Performance Evaluation: Investment in property is undertaken because the special characteristics of property make them provide tax shelters to some classes of investors, act as a good hedge against inflation and a good medium for diversification. Prudent investment strategy demands that investment performance should be evaluated or measured regularly. According to Ajayi (1998) the ultimate aim of all rational investors is to achieve maximum returns and minimize risks. Ajayi (1998) further defines investment performance as the degree of achievement of this aim measured against a set of objectives and targets.

Until the late 1970s the standard techniques for measuring and analyzing investment performance were restricted to investment like gilts and equities. (Ajayi (1998), Kalu (2001) Investment in property was seen as specialized because of the special investment characteristics of property and of the property investment market. For instance investment in property provides tax shelters to some classes of investors, and acts as a good hedge against inflation and a good medium for diversification. Therefore investment decisions were made on the basis of intention and past experiences (Ajayi 1998). However, in recent time technological developments, especially computerized valuation systems now make the storage and retrieval of historic data in property easier. Also, Kalu (2001) asserts that performance measurement is very new and barely developing in the property world, especially in the emerging economies. According to Kalu (2001) the need for property performance measurement arises for the following reasons:—

(a) Communication: investors need to be advised on the strategy for the improvement of their portfolio. Performance measurement will provide quantitative rather than qualitative descriptive of the property’s performance; and thus provide a reliable basis for measuring the investors achievements.

(b) Accountability: Investors are now more informed and sophisticated then before. Thus, they now require the right reports from investment analysis and professional’s this has placed the burden of accountability on advisors, as investor have to be assured of the reliability of future investment analysis.

(c) Actual performance against goal: It is crucial to examine how individual investment, sectors and the portfolio have performed relative to initial expectations (d) Basis for future action: the analysis can prompt a decision to alter the sectional investment strategy of the investor or geographical spread. Kalu (2001) further lists the objectives of performance measurement as
including the following: The measurement of the rate of return, assessment to how these rates compare with those of other, assets in the portfolio; examination of the timing of asset acquisition; good asset and portfolio selection; consistency in achieving good performance; assessment of the risk profile; examination of the portfolio diversification and sources of the portfolio returns.

Methods of Property Performance Measurement: Isaac (1998) opines that to undertake this evaluation is difficult; as the evaluation is based on the changes in the capital value of the investment flow, the income generated by the investment. He further asserts that property, unlike other types of investment may be unique in its nature and location; the property may not be regularly revalued and if the property has not been tested in the market, there will be no specific evidence in terms of rental value, yields and capital value etc. The figures so obtained are often based on the accumulation of historic data on which comparable evidence can be amassed.

Thus, it is extremely difficult to assess future trends from this historic data and estimate changes in the property cycle and in the property investment market. However, a careful analysis of the past can equip an investor with an idea of the future returns from an investment, what type of property to invest in and in what locations to invest in. Meanwhile Hill (1981) suggests that a property performance and measurement can be examined on the basis of the following: income/cost, income/value, value/cost, income growth, rental value growth, rental value/income, time weighted total return and money weighted total return. Kalu (2001) opines that the data required to carry out property performance measurement include rental value, income and outgoings, details of leases, capital value, and property market indicators. He further adds that the monetary performance of property investment is judged on the basis of growth in rental income and capital value while traditionally, returns are measured in terms of the internal rate of return, bases either or money weighted basis or time weighted basis. The measurement of return is to show the effectiveness of the utilization of capital. This is done at three levels, the individual property, portfolio sectors and the whole portfolio. When measuring returns from individual properties assets, investors take decisions on single properties while in the case of sectors, such measurement enables a comparison of their overall performance. Many firms of practicing surveyors in United Kingdom (U.K) have set up systems for measuring property performance. They have used basically capital and rental indices and the firms also publish U.K. market statistics from data ailed from institutional portfolio but on the basis of confidentiality (Kalu 2001). Kalu (2001) made a comparative study of four property measurement services available in the U.K; and concluded that there is no standard form of measurement set by the professional body for measurement of performance of property.
Fraser (1996) on the other hand, asserts that in order to compare rack rented freehold investments, fixed income property investments, the net rental income yield is the appropriate unit of comparison. For reversionary freeholds the unit of comparison is the net equivalent yield. He further adds that all the yields above are sometimes called 'all risk yield' or the yield; which is depicted as follows:

\[
\text{Rental yield}\% = \frac{\text{Current net rent}}{\text{Market Price (Rack rental property)}} \times 100
\]

Ajayi (1998) meanwhile lists the some typical questions among other that any good performance evaluation system should seek to answer; should a fund invest in property at all? How do the individual properties compare in both absolute terms and relative to some laid down criteria? How do the returns of the various property sectors compare with each other? What factors affect performance? Can further investment in property be justified? When, how much, in what location and in what type or sector of property assets should further capital commitment be made? Etc.

**RESEARCH METHODOLOGY**

This study is designed to collect data on the trend of rental values and capital values of residential properties in selected areas of Lagos. Data obtained from primary sources are those from reconnaissance surveys and structured interview guide while data collected from secondary sources are from books, journals and professional publications. The study adopts the longitudinal design, here although time is see as a variable it is not measured but accepted as a factor responsible for changes in the independent variables (Asika, 1991) detached, semi-detached houses and flats in Victoria Island, Lekki Peninsula Phase I, Ikeja and Agege form the study population. However, because of paucity of information, and the peculiarity of

<table>
<thead>
<tr>
<th>Index</th>
<th>Measures</th>
<th>Analyzed</th>
<th>No. Of Properties</th>
<th>Total Capital Value</th>
<th>Total ERV</th>
<th>Easiest data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Richard Ellis Property Market Indicators</td>
<td>Capital and Rental Values</td>
<td>Use &amp; Region</td>
<td>1015</td>
<td>1015 (3/8.4)</td>
<td>132</td>
</tr>
<tr>
<td>3.</td>
<td>Michael Laurie/Cig Property Performance Index</td>
<td>Capital values</td>
<td>Use</td>
<td>Na</td>
<td>(12/83)</td>
<td>N/A</td>
</tr>
<tr>
<td>4.</td>
<td>Investment Chronicle/ Hillier parker</td>
<td>Rental Values</td>
<td>Use &amp; Region</td>
<td>189 (5/84)</td>
<td>-</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Sources: Machintosh ADL Sykes S. (1983)
flats in the Victoria Island and Lekki, only flats in Ikeja and Agege were taken into consideration for comparison of capital values.

The population of the study is finite as it possible to identify and count the houses or properties within a geographical area. However, it was difficult to collect enough information on the properties directly from the field. Most occupiers could only provide information on the current rent passing on the properties. Therefore interviews were conducted with some practicing estate surveyors and values in Lagos. These professionals provided information on properties in their portfolio, in respect of capital values, rental values and outgoings etc and also information on the residential property market.

The Selected Study Areas in Lagos:

**Victoria Island** It covers an area of about 8 square kilometers. The settlement is bounded on the North and West by the Five cowries Greek, on the east by Lekki Peninsular and on the South by the Atlantic Ocean (Odumosu 1999) Victoria Island was part of the former Federal Capital Territory of Nigeria until the seat of government was relocated to Abuja. The area is located within Eti-Osa local government area; and was initial designed as a low density high class residential area with few institution, recreational uses. However, in recent times commercial uses have been on the increase, with rampant change of use from residential to commercial and mixed uses; and in some instances, increased intensity of existing residential uses through redevelopment.

**Lekki Peninsula: Phase I** The Lagos State New Towns Development Authority (NTDA) set up Lekki Peninsula as a way of solving the phenomenal population growth rate in Lagos. Lekki Peninsucla Scheme I was conceived in 1981, and covers a total area of 1.046 hectares. It is bounded on the south by the Atlantic Ocean, on the north by the Lagos Lagoon on the west by Victoria Island and on the east by Itedo and Ikate villages. The area was a quagmire and had to be sand filled; land uses within the area, are high class residential, commercial, institutional and recreational; and occupation of Lekki commenced in the early 1990's Residential developments within Lekki compare favourably with those in other low density, high class areas like Victoria Island and Ikoyi, (Labisi 1991). **Ikeja** Ikeja is located within Ikeja local government area. It is one of the eight autonomous communities within the local government area. (Odumosu, 1999). Ikeja lies in the upland area of Lagos State; and within a highland area ranging from 30 metres to above 120 metres above sea level. Ikeja is the seat of government of Lagos State. It is an area of mixed use; residential, commercial, industrial and recreational etc. the area consists other sub area like Ogba, Oregun, Alausa, Ikeja GRA, Nigerian Army Cantonment, etc. Residential land use of varying densities are predominant in Ikeja, in areas like Ikeja GRA, Opebi Estate, Alausa etc. Some residential properties are government developed residential estates. However, industrial and commercial land use are prominent especially in form of commercial high street e.g. Allen Avenue, Opebi Road etc; and industries on Oba Akran Avenue, Henry Carr Street, Acme, Wempco, Akanni, Doherty, Roads etc. Ikeja also exhibits many institutional, recreational land uses. **Agege** Agege town is about six kilometers from Ikeja and is located in Agege local government. The local government is located at the extreme northern end of Lagos metropolis, where drainage is very effective on the scopes with little or no swampy terrain.
(Odumosu, 1991). The local government comprise the following Orile, Agege, Alagba, Ijadiye and Isheri which are sandwiched by two highly industrialized area Sango Ota and Ikeja. Agege is a rapidly urbanizing area, of predominantly, high density residential use mixed with commercial, recreational and party institutional land uses.

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS
The data collected from the survey are presented and summarized into tables and graphs below:

Trends in Capital Values in the study area
Table 1.1: Percentage growth of Capital Values for detached 4/5 houses

<table>
<thead>
<tr>
<th>Regional/Location</th>
<th>Year</th>
<th>90</th>
<th>91</th>
<th>92</th>
<th>93</th>
<th>94</th>
<th>95</th>
<th>96</th>
<th>97</th>
<th>98</th>
<th>99</th>
<th>'00</th>
<th>'01</th>
<th>'02</th>
<th>'03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria Island</td>
<td></td>
<td>33.3</td>
<td>-</td>
<td>-</td>
<td>25</td>
<td>16</td>
<td>-</td>
<td>25</td>
<td>20</td>
<td>-</td>
<td>25</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lekki Phase 1</td>
<td></td>
<td>25</td>
<td>50</td>
<td>10</td>
<td>21.2</td>
<td>10</td>
<td>6.81</td>
<td>6.38</td>
<td>12</td>
<td>7.1</td>
<td>16.6</td>
<td>-</td>
<td>-</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Ikeja</td>
<td></td>
<td>25</td>
<td>13</td>
<td>17</td>
<td></td>
<td>25</td>
<td>12</td>
<td>7.1</td>
<td>9</td>
<td>5.7</td>
<td>8.5</td>
<td>5.2</td>
<td>-</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Agege</td>
<td></td>
<td>25</td>
<td>3</td>
<td></td>
<td>50</td>
<td>-</td>
<td>11</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>16.6</td>
<td>14.2</td>
<td>12.5</td>
<td>11.1</td>
<td></td>
</tr>
</tbody>
</table>

Table 1.1 shows percentage growth of capital values for detached houses and illustration 1.1 shows the trend of capital values.
Table 1.1 and illustration 1.1 show that there is growth in capital values of detached houses. However, this growth is not constant annually except for detached houses in Lekki where there was constant yearly growth in capital value until after 2000. Houses in Ikeja also show constant rise in capital values except in 1994, 2002 and 2004. Also, the growth percentage is not constant but varies yearly; whenever it occurs. This infers that:

1. The growth might have been because of the initial low capital values in Lekki and Ikeja, thus making the properties attractive for investors
2. Agege was essentially undergoing gradual urbanization, thus capital values picked up in later years
3. Victoria Island's initial capital values were high and entailed larger capital outlay

### Table 1.2: Percentage growth of Capital Values of Semi-detached houses

<table>
<thead>
<tr>
<th>Regional</th>
<th>Year</th>
<th>90</th>
<th>91</th>
<th>92</th>
<th>93</th>
<th>94</th>
<th>95</th>
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<th>00</th>
<th>01</th>
<th>02</th>
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<th>04</th>
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</thead>
<tbody>
<tr>
<td>Victoria Island</td>
<td></td>
<td>80</td>
<td>-</td>
<td>-</td>
<td>22.22</td>
<td>-</td>
<td>13.63</td>
<td>20</td>
<td>20</td>
<td>28.5</td>
<td>11</td>
<td>20</td>
<td>16.66</td>
<td>14</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Lekki Phase 1</td>
<td></td>
<td>-</td>
<td>25</td>
<td>-</td>
<td>80</td>
<td>-</td>
<td>50</td>
<td>-</td>
<td>13.63</td>
<td>-</td>
<td>12</td>
<td>7.1</td>
<td>16.66</td>
<td>14</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Ikeja</td>
<td></td>
<td>33.33</td>
<td>25</td>
<td>20</td>
<td>-</td>
<td>25</td>
<td>20</td>
<td>11.11</td>
<td>10</td>
<td>13.63</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>16</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Agege</td>
<td></td>
<td>33.33</td>
<td>25</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>16.66</td>
<td>-</td>
<td>12.5</td>
<td>-</td>
<td>25</td>
<td>20</td>
<td>16.66</td>
<td>14</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey 2006
Table 1.2 and illustration 1.2 show that semi-detached houses in Ikeja have slightly constant growth in capital value except for years 1994, 2000, 2002 and 2004. The same applies to Victoria Island. However, for Lekki and Agege growth was not constant, values were stagnant in some years; for 6 years and 5 years respectively. This infers that although the initial capital values in Victoria Island are high, the market for semi-detached houses may have been more active than for detached houses. The reserve is the case for Lekki. However, the market picked up from year 2000 in Lekki, Ikeja and Agege show better capital growth in the earlier years.

Table 1.3: Percentage growth of Capital Values block of 3 bedroom flats

<table>
<thead>
<tr>
<th>Regional</th>
<th>Percentages growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04</td>
</tr>
<tr>
<td>Lekki Phase 1</td>
<td>- - 40 22.22 8.33 16.66 7.14 13.33 - 5.88 - 11.11 -</td>
</tr>
<tr>
<td>Ikeja</td>
<td>- - - 33.33 - 25 - - 16.66 19.04 12.5 11.11 -</td>
</tr>
<tr>
<td>Agege</td>
<td>- 25 50 - - - - - - - -</td>
</tr>
</tbody>
</table>

Source: Field Survey 2006
Table 1.3 and illustration 1.3 show there has been growth in capital values of blocks of flats in Ikeja and Agege. However, the growth was not constant over long periods. The longest period of constant growth was between 1996 and 1999 for Ikeja and 2000 to 2003 for Agege.

Table 2:1 Percentage growth of Capital Values block of 3 bedroom flats

<table>
<thead>
<tr>
<th>Region</th>
<th>Annual Percentages growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 90</td>
</tr>
<tr>
<td>Victoria Island</td>
<td>-</td>
</tr>
<tr>
<td>Lekki Phase 1</td>
<td>-</td>
</tr>
<tr>
<td>Agege</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Field Survey 2006
In Table 2.1 shows the percentage annual rental value growth and illustration 2.1 shows the trend 4/5 bedroom. Table 2.1 and illustration 2.1 shows that annual rental value growth occurred more often in Agege and Ikeja on detached houses. Annual rental value growth was less constant in Victoria Island. Lekki shows constant rental growth from 1998 to 2004. This may infer that, the market takes time to adjust to the initial high rental values in Victoria Island, while the rents in Lekki and Ikeja were almost at par; but not as high as that of Victoria Island; apparently the market has been more active in these areas (Lekki & Ikeja).

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentages (%)</th>
<th>Year</th>
<th>90</th>
<th>91</th>
<th>92</th>
<th>93</th>
<th>94</th>
<th>95</th>
<th>96</th>
<th>97</th>
<th>98</th>
<th>99</th>
<th>'00</th>
<th>'01</th>
<th>'02</th>
<th>'03</th>
<th>'04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria Island</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>12.5</td>
<td>33.3</td>
<td>-</td>
<td>8.33</td>
<td>-</td>
<td>15.38</td>
<td>-</td>
<td>33</td>
<td>-</td>
<td>-</td>
<td>25</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Lekki Phase 1</td>
<td></td>
<td></td>
<td>28.6</td>
<td>-</td>
<td>33.3</td>
<td>33.3</td>
<td>8.33</td>
<td>-</td>
<td>7.69</td>
<td>-</td>
<td>42</td>
<td>-</td>
<td>20</td>
<td>33.3</td>
<td>12.5</td>
<td>11.11</td>
<td></td>
</tr>
<tr>
<td>Ikeja</td>
<td></td>
<td></td>
<td>50</td>
<td>33.3</td>
<td>25</td>
<td>20</td>
<td>16.66</td>
<td>14.28</td>
<td>12.5</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>20</td>
<td>8.33</td>
<td>15.3</td>
<td>14.28</td>
<td></td>
</tr>
<tr>
<td>Agege</td>
<td></td>
<td></td>
<td>20</td>
<td>11.11</td>
<td>12.5</td>
<td>11.11</td>
<td>20</td>
<td>8.33</td>
<td>7.69</td>
<td>4.2</td>
<td>-</td>
<td>25</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>11.11</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey 2006
Table 2.2 and illustration 2.2 shows that annual rental growth is more constant in Agege, Ikeja and Lekki, in descending order. This infers that; the market took a longer time to adjust to rent increase in Victoria Island, probably because of the high rent. However, the market has been more active in the other three regions.

Table 2.3 Percentage growth rate of rental Values for 3 bedroom flats

<table>
<thead>
<tr>
<th>Region</th>
<th>Rental Values (N'm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year</td>
</tr>
<tr>
<td>Victoria Island</td>
<td>-</td>
</tr>
<tr>
<td>Lekki Phase 1</td>
<td>16.66</td>
</tr>
<tr>
<td>Ikeja</td>
<td>50</td>
</tr>
</tbody>
</table>

Source: Field Survey 2006

ILLUSTRATION 2.3 GRAPH SHOWING TREND IN RENTAL VALUES OF 3 BEDROOM FLATS IN 4 LOCATIONS
In Table 2.3 shows the percentage annual rental value growth on flats. Illustration 2.3 shows the trends in rental values of 3 bedroom flats. Table 2.3 and illustration 2.3 shows that there has been rental value growth within all regions. However, the growth is most constant in Agege, followed by Ikeja. This may show that the market for flats in Agege and Ikeja is more vibrant. The periods of non growth in rental values in Lekki and Victoria Island, show that the market was trying to adjust to accept the increase in rents. Graph E shows the pattern of rental value growth.

The Returns On Residential Properties In determining the returns on these properties the formula used is Returns on investment.

\[ \text{Returns} = \frac{\text{Current Net Rent}}{\text{Income}} \times 100\% \]

Where Net rent is the Rental Value less outgoing; and the outgoings are adopted at 10% of the Rental Value of the property. This can be illustrated thus capital value of a 4/5 bedroom detached house in Victoria Island in 1990 was N15 million; the Rental Value was N850,000.00. The outgoings on the property will be N850,000.00 (i.e. N850,000.00 x 1%). Therefore the Returns on the property for the year 1990 will be 5.1% (i.e. \( \frac{N(850,000-85,000)}{N15m} = 5.1\% \)) N15m. Based on the above, the returns on the properties in the study areas are shown in tables below.

Table 3.1: Returns on residential properties in Victoria Island

<table>
<thead>
<tr>
<th>Properties</th>
<th>Returns (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>90</td>
</tr>
<tr>
<td>Detached House</td>
<td>5.1</td>
</tr>
<tr>
<td>SDH</td>
<td>7.2</td>
</tr>
<tr>
<td>Flts</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3.1, which represents the returns on residential properties investment in Victoria Island shows that returns on semi detached houses went high in 1990, 1991 and 1993 while returns on detached houses was high in 1993 as well. However, returns on semi-detached houses were significantly above that of detached houses from 2001 to 2004.

Table 3.2: Returns on residential properties in Lekki Phase 1

<table>
<thead>
<tr>
<th>Properties</th>
<th>Rental (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>90</td>
</tr>
<tr>
<td>Detached House</td>
<td>4.5</td>
</tr>
<tr>
<td>Semi-Detached</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Source: Field Survey 2006
In Table 3.3, the returns on residential properties investment in Ikeja shows that the returns on detached and semi-detached houses was high between 1991 and 1993. The returns fell and were lowest between 1996 and 1998 returns rose again between 1999 and 2004.

### Table 3.3: Returns on residential properties in Ikeja

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Rental (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>90</td>
</tr>
<tr>
<td>---------------</td>
<td>----</td>
</tr>
<tr>
<td>Detached House</td>
<td>1.5</td>
</tr>
<tr>
<td>Semi-Detached</td>
<td>1.5</td>
</tr>
<tr>
<td>Flats</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Source: Field Survey 2006

In Table 3.3, the returns on residential properties investment in Ikeja shows that returns on the investments did not show any dramatic increase or decrease. Returns on flats peaked in 1996, 2001, 2002 2003 and 2004 while returns on semi-detached houses peaked in 1994, 2002 and 2004. The returns on detached houses oscillated between that of semi-detached houses and flats.

### Table 3.4: Returns on residential properties in Agege

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Rental (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>90</td>
</tr>
<tr>
<td>--------</td>
<td>----</td>
</tr>
<tr>
<td>Detached House</td>
<td>1.62</td>
</tr>
<tr>
<td>Semi-Detached</td>
<td>1.8</td>
</tr>
<tr>
<td>Flats</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Source: Field Survey 2006

Table 3.4 shows the returns on residential properties investment in Agege, shows the same trend as in Ikeja. Returns on flats in Agege showed highest performance from 2000 to 2004. However the returns on detached houses gradual rose above the returns on semi-detached houses between 1999 and 2002, and the return fell in 2004. However, it is important to note that returns on properties in Victoria Island and Lekki Phase I are significantly higher than returns on properties in Ikeja and Agege.

**The Relationship between Capital Values, Rental Values, Returns and the Study Period (Time)**

Apart from establishing that there have been upward movement of capital values and rental values, it is pertinent to further determine whether there exists any relationship between the following:

(i) Rental value and time (years);
The amount of relationship between these variables and time another continuous variable is analyzed using the Pearson correlation co-efficient.

Which is represented thus:

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 (\sum x)^2}}$$

$$\sqrt{n \sum y^2 (\sum y)^2}$$

The correlation 'r' for a flat in Ikeja is computed as 0.969 ≡ 0.97. This particular result shows that there is a high degree of correlation between time and rental value. However, the correlation coefficient 'r' for capital value of detached house in Victoria Island is computed at 0.18. This particular result shows that there is allow degree of correlation between time and capital value of residential properties in the study area. The mean annual rental value for detached house in Victoria Island, Lekki Phase I, Ikeja and Agege were N1.92 million, N1.11 million, N553,333.00, N87,000 annually respectively. When the above mean is computed for all the residential properties, Victoria Island and Lekki regions have the highest mean values. The standard deviation formula is used to compute or measure the amount by which the values differ from their mean.

**Comparison of the Performance of the Residential Properties**

To do a comparative evaluation of the property, the following were done:

1. Measure the central tendency of each property type capital values and rental values in each region i.e. the mean. The mean formula $x = \frac{\sum x}{n}$

2. Measure the typical or standard amount by which the values in the data differ from the mean i.e. standard deviation.

3. The variance.

4. The coefficient of variation which is used for comparing two sets of data.

**Ranking the Performance of the Properties in the Selected Areas**

**Victoria Island**

<table>
<thead>
<tr>
<th>Indices/Property Type</th>
<th>Capital Value (N)</th>
<th>Rental Value (N Pa)</th>
<th>Returns</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached House</td>
<td>48.33m</td>
<td>1.87m</td>
<td>3.71</td>
<td>2</td>
</tr>
<tr>
<td>Semi-Detached</td>
<td>20.93m</td>
<td>0.92m</td>
<td>3.71</td>
<td>2</td>
</tr>
<tr>
<td>Flats</td>
<td>-</td>
<td>1.42m</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Lekki Phase I**

<table>
<thead>
<tr>
<th>Indices/Property Type</th>
<th>Capital Value (N)</th>
<th>Rental Value (N Pa)</th>
<th>Returns</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached House</td>
<td>26.20m</td>
<td>1.11m</td>
<td>3.7</td>
<td>2</td>
</tr>
<tr>
<td>Semi-Detached</td>
<td>20.93m</td>
<td>0.92m</td>
<td>3.7</td>
<td>2</td>
</tr>
<tr>
<td>Flats</td>
<td>-</td>
<td>0.583m</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
This ranking indicates that residential properties in Victoria Island and Lekki Phase I show higher performance. The properties in Ikeja and Agege show the least performance.

SUMMARY OF FINDINGS
Based on the analysis of the study, a comparative evaluation of the performance of residential properties investment in Victoria Island, Lekki Phase I, Ikeja and Agege has been done as follows: (1) Rental values and capital values in all regions grew although the rate of growth was not constant. However, the average rental and capital values were significantly highest in Victoria Island when compared to the other areas under study. Also when rental values increased in Victoria Island it took a while for the market to accept such rises before the value makes another dramatic rise. Capital values and rental values were the lowest in Agege, however there was a constant growth in both values. (2) Residential properties in Victoria Island have the highest returns, followed by residential properties in Lekki Phase I. However, returns on residential properties in Ikeja and Agege were low comparatively. (3) Meanwhile, investment in flats showed best performance in the last 3 to 4 years, in both Ikeja and Agege when compared with investment in semi-detached and detached houses in the same areas.

CONCLUSION
From the study, investments in semi detached and detached houses in Victoria Island and Lekki Phase I offer better rental growth, capital growth and higher returns than investment in Ikeja and Agege. However, it should be borne in mind that investment in Victoria Island and Lekki Phase I serve a particular segment of the residential property market; the high income. Although Ikeja also has high income segment, the rental values on these properties have been lower than rental values in Lekki in the last three years. A
prospective investor would naturally choose to invest in Victoria Island or Lekki Phase I. However, such an investor has to contend with such other factors as the initial capital outlay and the problem of sourcing for needed capital.

RECOMMENDATION
(a) Portfolio management of residential properties in Ikeja and Agege to ensure optimum returns to investors (b) A further study of the survey is recommended, comparatively to evaluate the performance of residential properties in selected areas with other forms of investment like stock and shares.

REFERENCES
ENVIRONMENTAL MANAGEMENT AND PROTECTION FOR SUSTAINABLE DEVELOPMENT IN NIGERIA

BY

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Yaba College of Technology, Yaba, Lagos

ABSTRACT

In the 60s, the environment was given the pride of place and environmentalism a popular academic and practical pursuit. However, in recent times the pendulum has shifted in favour of man and technology in the development process. This has made both our environment and the development there from unsustainable. It is therefore the aim of this paper to examine the role of effective environmental management and protection sustainable development. Thus, this paper argues that a protected and well-managed environment will not only bring development but also sustain it. It finally recommends appropriate measure and strategies to achieve effective environmental protection and management. These include the revitalizing FEPA, environmental knowledge and information.

INTRODUCTION

In the 60s, the environment was given the pride of place and environmentalism a popular academic and practical pursuit. However, in recent times the pendulum has shifted in favour of man and technology in the development process. This has made both our environment and the development there from unsustainable. It is therefore the aim of this paper to examine the role of effective environmental management and protection sustainable development. Thus, this paper argues that a protected and well-managed environment will not only bring development but also sustain it. It finally recommends appropriate measure and strategies to achieve effective environmental protection and management. These include the revitalising FEPA, environmental knowledge and information.

In the past, many developing countries, including Nigeria has misgivings about environmental protection. They saw it as a policy of the rich countries to prevent them from industrializing so as to keep them as sources of raw materials. Thus a commitment to the environment was likely to detract from commitment to development. This was the situation until the Third National Development Plan 1975-80 identified a number of environmental problems confronting development in Nigeria. It clearly recognized that environmental problems in Nigeria are very often the result of extreme poverty, lack of economic and social development. For example, the quality and quantity of water supply is low, the standard of housing is unsatisfactory; sanitation and nutrition are poor; disease and natural disasters are common, furthermore the destruction of vital natural resources, such as vegetation and wild life as well as pollution through oil spillages are alarmingly evident in
different part of the country; it is also obvious that many environmental problems, which are consequences of our immediate past action are already staring us in the face. This is why-the Nigeria Environmental Study Team (NEST, 1991) described the Nigeria environment as “threatened”. it is against this background that this paper intends to appraise the role of environmental protection and management in achieving sustainable development.

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The Concept of Environmental Management

The concept of environmental management involves the policy manipulation of those variables that are identified as external influence on man/environment. The objective of any environmental management is ultimately to ensure that man on whom environmental variables operates derives greater, longer lasting satisfactions from life and living. Specifically therefore, environmental management revolves around pollution, reduction in the use of non-renewable resource, conservation of forest resources, and promoting the understanding of the linkage between environment and development (Agwu, 2000).

Environmental Management and Protection in Nigeria

As it has been pointed out earlier in this paper, the Nigerian environment is one of the most abused. And in response to these abuses a number of management and protection measures were introduced as manifested in the following legislation.

FEPA Decree no. 58 of 1988
E.I.A Decree no. 86 of 1992
Urban and Regional Planning Decree no. 88 of 1992

Other state based environmental protection agencies and edits however, a number of pitfalls can still be found.

(a) It appears that the Federal Environmental Protection Agency (FEPA), which is the apex and most visible organization charged with the responsibility of managing and protecting the Nigerian environment has gone to sleep. This is because it is disheartening that 15 years after the promulgation of the decree it is still partially institutionalized and as such
not has been achieved (Aledare 2003).

(b) Another pitfall has to do with the enforcement of the E.I.A are usually written during the project initiation stage and once the project has taken root nobody cares about what happens to the environment (Aledare, 2003).

(c) Another pitfall is that of indiscipline and sack of political will of the government. It is claimed that the Nigeria society as of now largely works, not through institution, but rather largely through personalities (Okpala, Ibid). Thus, despite the existence of laws and regulations, on environmental protection, personalities tend to be more powerful than the institution and the laws.

(d) Dearth of professionals is another problem. The environment cannot protect itself. Thus manpower in terms of number, quality and mix is required. However Adedibu and Afon (1993) and Adelare (2003) have estimated that professionals in the environmental field are inadequate. For example the total number of registered Town Manners as at w 2007 is trust 1591 TOPREC 2007).

Legal Framework For Environment Management and Protection in Nigeria

There is legal basis for environmental management and protection in Nigeria. The main instruments include:

(a) The FEPA decree no. 58 of 1988. The decree established FEPA as the apex organization with the responsibility of protecting and managing the Nigerian environment.

(b) The environment impact assessment (E.I.A) Decree no. 86. 1992. This decree established that any decision or activity that will affect the environment significantly whether by government or individual must consider its environmental effect.

(c) The urban and regional planning decree no. 88 of 1992

(d) Those at the state level include edicts on environmental sanitations as well as environmental protection agencies.

Sustainable Development: Meaning Requirements And Principles

Emerging from the agenda 21 of the earth summit at R 10, 1992, was the heightened awareness drawn to the global environmental and development. In essence, sustainable development means maintenance of the environmental capacity. Over time and can be achieved through protecting the atmosphere, our land resource, fresh water resources, conserving ecological diversity and an overall sound environmental management (Ogundele, 2003). The requirements are:

i. The development and environmental needs of the present and future generation should be met equitably.

ii. Integration of the environment and development in decision making as well as integrated planning and management of land resources-sustainable rural land use.

iii. Protection of mountain and marine areas and resources

iv. Environmentally sound management of solid wastes


ROLE OF ENVIRONMENTAL MANAGEMENT AND PROTECTION IN SUSTAINABLE DEVELOPMENT

A critical look at the role of environment
management and protection is sustainable development will reveal a couple of issues.

1. That environmental assessment is a major component of environmental management and protection as through this assessment, information on the condition of, and trends of the environment are received and it is on the basis of this that environmental management and protection decisions are made. Therefore both National local development programmes that may be sustainable must be based on adequate information about and understanding of the environment.

2. That the process of environment management and protection consists of monitoring, research, review and evaluation of resources such air, water, soil, minerals not only as element of the human environment but also as stocks of substances that are used by man as material resources for developments. Thus, any attempt at sustainable development at any level must make environmental management and protection its focus. It is against this background that this section of the paper examines some major aspects of environment management and protection that have bearing on growth and development in Nigeria.

(a) Petroleum exploitation: In the past few decades, the management of petroleum resources does not reflect that we are conscious of the fact that it is a non-renewable asset. The impact of oil spillages on the oil producing areas have not received necessary attention. For example Nwankwo and Ifeadu (1985) noted that there were 1,360 oil-spill incidents between 1976-1983 with a great percentage occurring in sensitive environments in on shore and offshore. There was also the Puniwa oil bluer in 1980 where wall over 400,000 barrels of crude oil were spilled. The Jesses and Abia cases of 1999 and 2003 respectively are still very fresh in our moulds/ memories area. The effects of these spills have been catastrophic in many areas ranging from contamination of water resources, loss of farm land to even fire disasters and death thereby making nonsense of any contributions the oil companies may have had in development. The implication is that the resources used in tackling the effects of these oil spillages could have been used for developmental purposes.

(b) Deforestation: The exploitation of our forest resources is another case in point. The indiscriminate exploitation of our forests resources without adequate plans for forest regeneration poses a challenge to environmental management and protection and thus development, for example, between 1973 and 1977 forest covers 1.3m hectare of land world over, but today it is not more than 1m hectare (UN, 1996). Furthermore, the Nigeria environmental study actions team (1998) revealed that 38% of the total population of Nigeria lives under desertification and that the rate of deforestation in Nigeria is among the highest in the world. The implications of this is that the resources that would have been harnessed for development is lost. Loosing the forest resources as a result of exploitation for development would not have been a cause for concern but when it is lost to desertification and without plans for regeneration calls for concern.
Waste Management: The issue of wastes generated by the population in the urban centre constitute a major hazards to urban residents. The problem has observer. 18 October, 1985, the sole administrator of Oredo Local Government Area complained that over 30% of the locally generated revenue in Benin city goes unto waste management. The implication of this is that the much needed funds for sustainable development is being expended on waste management.

Land use Management: Nigeria is currently witnessing unprecedented growth in urbanization both in terms of increase in population and urban expansion. This has led to indiscriminate clearing of forest as well as haphazard sand filling for urban development. This has resulted unto poor spatial planning and uncontrolled urban expansion and invariably slum development (Abegunde, 1985). Again the implication is that heavy resources are pumped into slum clearance, and redevelopment at the detriment of sustainable development.

Having examined the above cases it is pertinent to conclude this part by saying that one of the challenges were face today is finding ways and means of designing development that stratifies human needs and at the same time sustainable. However, the ineffective environmental management and protection, especially in the areas discussed above has made all attempt at sustainable development almost impossible.

CONCLUSION

The inter-relationship among the major factors involved in economic and social development in the one hand and environmental protection and development in the other hand need to be systematically examined before choices are made between alternatives. This is with a view to ensuring that choices are based on an integrated approach to environmental and developmental considerations. It is in the light of this that the fourth National Development Plan 1981-985 and Agenda 21, 1992 has empathized the need for environmental assessment and management.

However, environmental and development objectives are complementary and the environment is seen as the stock, and in dynamic terms, of physical and social resources available at a given time for the satisfaction of human needs and development as a process, pursed by all societies, aimed at increasing human well-being and maintaining it in the long term, we will have no choice but to direct and manage development along lines that are environmentally appropriate. The recognition and protection of the environment is the practical essence of environmental protection and management. Its purpose is to ensure that development is sustainable and product net benefits to the community.

WAY FORWARD

1. It is fifteen years now since FEPA was established and not much impact has been felt. Thus, there is need to wake it up from its slumber by revitalizing it through a total overhauling aimed at making it more effective by
   (a) Giving FEPA the power to prosecute defaulters of environmental laws
   (b) Lack of finance is one of the most fundamental obstacles to the issue in view. Thus more funds should be provided for FEPA.
2. The local people are usually more exposed to environmental problems and are in the best positions to monitor environmental policies. Thus there is need to articulate a local government public enlightenment campaigns using indigenous language and local radio stations and news papers.

3. Research is a continuous process. Thus, further researches should be conducted on the ways an strategies of protecting and managing the environment.

4. Another recommendations is the prompt dissemination of these research findings to the public especially the local people as the information not heard is information not have.

5. Computerization of all agencies and institutions that has to do with environmental management.

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THE RELATIONSHIP BETWEEN HOUSING QUALITY AND RESIDENTIAL PROPERTY VALUES IN YABA AND EBUTE-METTA, LAGOS

BY

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ABSTRACT

Housing quality is more than the definition of minimum standards. It has two interrelated sets of dimensions namely: those physical/material/social/economic constituents of the residential environments; and those perceived meanings, values and the uses of these constituents. Also, purpose of housing quality definition may concern the assessment of aesthetic and/or use values attributed to residential buildings. In order to examine the relationship between housing quality and residential rental values, a sample size of 644 residential properties in Yaba and Ebute Metta were drawn from 6,444 residential properties in the area. The number of residential properties was obtained from Lagos State Valuation Office record of 1996. Stratified random sampling covering eleven electoral wards was adopted in the distribution of questionnaires to landlords. Four hundred and twenty seven (427) of the questionnaires were completed and without inconsistency out of 644 administered. Statistical tool employed in analyzing data based on interval scale of measurement is Pearson's Product Moment Correlation. The average correlation coefficients of housing quality variables with residential rental values calculated is 0.4677. This implies that improvement in the number of kitchen, bathroom, toilet, standard of room and physical conditions of the buildings might increase the rental values of residential properties in the study area. Some of the reasons adduced for the insignificant relationship are the demand that far outweigh the supply for residential accommodation and the accessibility of the study area.

Introduction

Housing is an issue that touches on the life of individual as well as that of the nation. The society ascribed great importance to the role it plays in engendering human comfort. For examples after food and clothing, shelter comes next (Agbola, 1998). Despite, the traditional urge in Nigeria to hold property for holding sake as against investment, property acquisition is increasingly being embarked upon as an investment. Private developers are steadily investing in property particularly, residential property purely because of its income generation capacity. Rents are paid in advance sometimes up to five (5) years at levels much higher than that stipulated in rent control legislations. In spite of recession in the Nigerian economy, rents on middle and low residential properties do not appear to be falling. It seems that only commercial properties are at the risk of non rising rent (Kalu, 1987). Housing is a set of durable assets, which account for a higher proportion of a country's wealth and on which households spend a substantial part of their income. This paper intends to examine the concept of housing quality and factors determining property values. It is based on this background that the situation in the study area is presented in this paper.
**Housing Quality**

Shelter means more than a roof over one's head. It means adequate privacy, adequate space, adequate security, adequate lighting and ventilation, adequate basic infrastructure and adequate location with regard to work and basic facilities, all at a reasonable cost. However, the conditions of adequacy may vary from country to country (Habitat 1996, Lawal 2000). This variation in adequacy informs the suggestion by Agbola (1994) that the standard set by some Nigerian states could be reduced to minimize flouting of the building regulations and at the same time ensure adequacy. His suggested reduction is as shown in the table 1.

**Table 1 Minimum Standard Size of Rooms and Suggested Reductions**

<table>
<thead>
<tr>
<th>Type of Room</th>
<th>Minimum Standard Size by Planning Authority in M²</th>
<th>Suggested size in M²</th>
<th>Reduction in M²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living/Dining</td>
<td>18.00</td>
<td>12.00</td>
<td>6.00</td>
</tr>
<tr>
<td>3 bedrooms</td>
<td>36.00</td>
<td>27.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Kitchen</td>
<td>6.00</td>
<td>4.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Bathroom</td>
<td>3.00</td>
<td>1.20</td>
<td>1.80</td>
</tr>
<tr>
<td>Toilet</td>
<td>2.00</td>
<td>1.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Total for Rooms</td>
<td>65.00</td>
<td>45.70</td>
<td>19.30</td>
</tr>
<tr>
<td>20% for passages and</td>
<td>13.00</td>
<td>9.14</td>
<td>3.86</td>
</tr>
<tr>
<td>thickness of walls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Floor Area</strong></td>
<td><strong>78.00</strong></td>
<td><strong>54.84</strong></td>
<td><strong>23.16</strong></td>
</tr>
</tbody>
</table>

**Source:** Adopted from Agbola, 1994 (Based on the building and subdivision regulations in Oyo, Ondo, Kaduna and Kwara States and Neufert's Architects data).

The considered opinion of Agbola, 1994; Adegbenro and Ige, 1997; Egunjobi, 1999 and Aluko, 2000 is that adequate standards for all aspect of planning (private and public buildings) whether residential, commercial, industrial or administrative areas must have sufficient light, ventilation and easy access to them. In addition, they must be safe, convenient and should not interfere with safety, convenience, privacy and efficiency of other building or site. Therefore, the height, bulk, area character and appearance of buildings need to be regulated.

Factors determining Property Values

Udo (1993) while examining the model for determining property investment valuation opined that value is not intrinsic and inherent in a property but depends on the perceptions and actions of dealers in the market. Furthermore, that it is influenced by needs, beliefs and attitude of buyers and sellers and other factors in the open market. Hence, this calls for detailed analysis of the forces in appraising a property for a particular purpose by the Estate Surveyor and Valuer. According to Shapiro et al (1992) no profit in economic terms is derived from the use of residential property. It has a functional use in providing shelter but it also has an esoteric function in providing enjoyment of ownership and occupation to its possessor. Hence it has a
subjective value to its owner, and the more the property can be enjoyed by its possessor the higher the value. Also, as an investment the marketability of the residential property can result in higher or lower value of the property.

Britton et al (1989) said that the two principal factors that influence the value of residential properties are accommodation and situation. That is, the prospective tenant or purchaser will consider the nature and extent of the accommodation offered and will at the same time have regard to the situation of the property as it affects the general amenities of life such as time of travel to work, proximity to schools and like matters. In addition, they said that the effect of position on value is influenced not only by such concrete considerations mentioned above but also by such non-concrete and uncertain factors as changing fashions and the value of a good address. Also, that in valuing residential properties it is very important to have regard not only to the present character of the neighborhood but also to the possibility of changes in the future, dependent on an increase or decline in population. They concluded that the level of values in general in a neighborhood is determined by situational factors while differences in value between individual properties are determined by the nature and extent of the accommodation offered.

Shapiro et al (1992) also agreed with the above but expanded on the components of accommodation to include nature of the housing unit, state of repairs, appearance and quality of the finishings. Others are quality of furniture and fittings and the potential of neighborhood in terms of the general improvement and potential of the property to be improved and modernized. While, Olusegun (2003) added the availability of services to the list of the factors determining the residential rental values.

From the above discussion, the principal factors influencing the values of residential properties are location, accommodation, neighborhood and services. However, it must be noted that there are other non-concrete and uncertain factors such as changing fashions and the value of a good address.

Egenta (2001) adopted the following variables namely: number of bedrooms, number of floors, number of bathrooms/toilets, total rooms, age of property, availability of boy's quarters, availability of garage and neighborhood characteristics in the determination of residential rental values in Nsukka. While, in a similar study on rental value of residential property Ukabam (2004) estimated rent using adequacy of lighting and ventilation, total number of habitable rooms, internal parking space, compliance with building line regulation, zoning, number of kitchen, number of bathrooms, number of toilets, availability of water supply, standard of room, physical condition of building and neighborhood quality.

Some of the variables used by Egenta and Ukabam are housing quality variables. However, Grigsby (1967) as reported by Fajemisin (2004) interpreted housing quality as everything that would create a variation in the open market of a property with the exception of space expected for flow of service etc. He further stated that the higher the quality of housing units the larger their economic life and vice-versa. This assertion was based on personal observation with no empirical evidence to serve as a basis for measuring the relationship between housing quality and residential rental value. The above
informs the rationale for this study on the 
correlation between housing quality and 
residential rental value in the study area as a 
pioneering work on the topic.

Relationship between Housing Quality and 
Residential Rental Values in Yaba and 
Ebute-Metta

In order to examine the relationship between 
housing quality and residential rental values, a 
sample size of 644 residential properties in 
Yaba and Ebute Metta were drawn from 6,444 
residential properties in the area. The number 
of residential properties was obtained from 
Lagos State Valuation Office record of 1996. 
Stratified random sampling covering eleven 
electoral wards was adopted in the distribution 
of questionnaires to landlords. Four hundred 
and twenty seven (427) of the questionnaires 
were completed and without inconsistency 
out of 644 administered. Statistical tool 
employed in analyzing data based on interval 
scale of measurement is Pearson's Product 
Moment Correlation. The data obtained from 
the landlords and physical surveys of the 
properties were fed into the computer 
statistical packages for social sciences (SPSS) 
software. Seven measurable characteristics 
were identified for analysis.

\[ V_i \] is the rental value and the dependent 
variable.

The \( V \) values for housing qualities are:

\( V_1 \) Number of kitchen
\( V_2 \) Number of bathrooms
\( V_3 \) Number of toilets
\( V_4 \) Availability of water supply (0-1) unit
\( V_5 \) Standard of room (0-1) unit
\( V_6 \) Physical condition of the building (0-5) units.

The numbers of bathrooms and toilets are 
significant and of high and positive 
correlation with the rental values. In other 
words the number of bathrooms and toilets 
influence positively the residential rental 
values in the study area. The average strength 
is 0.4677 and it can be inferred that 
 improvement in the number of kitchens, 
bathrooms, toilets, standard of room, and 
physical condition of buildings might increase 
the rental value of residential properties in the 
study area.

The table II also shows that there is low and 
positive correlation between housing quality 
and residential rental values in the study area. 
Some of the reasons adduced for the 
insignificant relationship between housing 
quality and rental values in the areas are the 
demand that far outweigh the supply for
accommodation, accessibility and infrastructural facilities such as roads, major market and good schools. Also, the analysis of 1,430 returned questionnaires from tenants in the study area out of 1,445 using stratified random sampling is tabulated in table III.

Table III Trends in Residential Accommodation Quality in the Study Area

<table>
<thead>
<tr>
<th>Period Year</th>
<th>Poor</th>
<th>%</th>
<th>Fair</th>
<th>%</th>
<th>Good</th>
<th>%</th>
<th>Very Good</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Year 2002</td>
<td>130</td>
<td>9.1</td>
<td>658</td>
<td>46.0</td>
<td>576</td>
<td>40.3</td>
<td>66</td>
<td>4.6</td>
<td>1430</td>
</tr>
<tr>
<td>Year 2002-03</td>
<td>212</td>
<td>14.8</td>
<td>633</td>
<td>44.3</td>
<td>502</td>
<td>35.1</td>
<td>83</td>
<td>5.8</td>
<td>1430</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2003

The trends in residential accommodation quality revealed that the number of poor quality accommodation is on the increase from 9.1% to 14.8%. The reasons for the decrease in the quality of residential accommodation from the study are high cost of building maintenance, multiple ownership and negative attitude towards maintenance culture.

**Recommendations**

The stakeholders in property investment such as government and estate surveyors and valuers should endeavour to enlighten the public (landlords and tenants) on the importance of maintenance. Maintenance is not only for aesthetic but also for prolonging the revenue yielding of property investment and the wealth of the nation. This will also reduce the impending emergence of slum. Locally sources building materials should be researched into government through provision of enabling environment should encourage mass production. This will reduce or stabilized the cost of building maintenance.

The environmental laws should give attention to the condition of accommodation in order to protect the general well being of the society, the overall environmental quality and property values. Necessary machineries such as finance, vehicles, office accommodation, staff, equipment should be provided to planning authorities and environmental agencies for the effective implementation and compliance to qualitative housing by the public.

**Conclusion**

The above presentation and analysis of data provide a useful and significant contribution to the understanding of the factors influencing the rental values. The impact of such factors on residential rental values is better appreciated by empirical study in a rapidly growing city such as Lagos.

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http://ecolu-info.unige.ch/recherche/ENHR Interpretation of Housing quality in Western European Countries
CONTROLLING THE MENACE OF STREET TRADING IN LAGOS METROPOLIS

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ABSTRACT
In the developing countries, urbanization has been associated with changes in the pattern of social and economic behaviour within the living areas. This paper attempts to elaborate on street trading as an important element of these behavioural changes. It highlights the characteristics, types and benefits of street trading as an informal sector of economy. It discusses the implications of street trading on the urban environmental quality and sustainability of Lagos metropolis. Using cluster sampling technique, one hundred and twenty questionnaires were administered to both retailers and consumers in Ikeja area. The outcome of the study indicates that the growth in street trading can be viewed as a response to both the inability of the state to provide sufficient formal sector employment and the failure of formal sector retail to supply goods at affordable prices. Conclusively, within the context of City governance, the paper suggests that street trading be seen as a social necessity that should be accommodated rather than prohibited as a poverty reduction strategy in the urban system.

Key words: Urbanization, Informal sector, street trading, environmental quality.

Introduction
Urbanization is perhaps the best symbol of the radical physical, economic and social transformation that mankind is passing through in recent time as a consequence of development. No wonder, the 21st century has been regarded as the age of urban revolution (Ayeni, 1997). Urbanization as a process is defined as the progressive concentration of population in towns and cities. It tends to proceed in two ways through an increase in number of towns, and increase in the size of individual towns. The phenomenon has been a major concern to the urban planners globally since it holds out both the promise of an unequalled future and the grave threat of unparalleled disaster. Indeed, which it will be for Nigeria as a developing country depends on what planners do today bearing in mind that the nation is ill-prepared for the consequences of urbanization. It is clear from literature that the process of urbanization has been explained by behavioural and structural concepts which provide the basis for urban land use analysis. Urbanization as a behavioural process refers to way of life and is associated with pattern of behaviour and the changes in experience which individual go through over time. As a structural process, it relates to activities of the whole population and changes in economic structure and specialization (Omolabi, 2001).

Given the widely held view that a strong correlation exists between the level of urbanization and the level of economic development (Oyemelekwe, 1978), it is
assumed that a controlled urbanization will lead to a sustainable development. However, Abumere (1998) described the Nigerian type of urbanization as ballooning in nature. It connotes the mismatch between the level of national economic development and urbanization. For this reason, the country runs into numerous problems including the thriving of informal sector of employment and urban land use conflict. Perhaps, this to a great extent is due to the failure of physical planning to organize and contain economic activities in the space for which they are planned. Consequently, there is a change in the spatial distribution and consumption of goods and services. What is being observed today is a growing penchant on the part of the population for street trading patronage rather than the conventional market.

Street trading regarded as an informal set up where goods and services are easy and cheap to come by is one of the features of commercial land use with a major urban spatial structure implication in the urban centres. The phenomenon is peculiar to developing countries including Nigeria, and is attributed to low income, low education, low capital outlay, ease of entry and lack of skill amongst its operators (Aduwo, 1999). Street trading activity which forms part of informal sector of the Nigerian economy has been on rapid growth since the 1980s. During the years of debt crisis and subsequent structural adjustment programmes the employment in the sector increased. By nature, street trading is widespread throughout Lagos metropolis, and manifests itself in many forms at different location, competing with organized markets. In other words, despite the promulgation of the Lagos government edict of 1984, amended in 1996, that prohibits street trading and illegal market; it is a common phenomenon to see most street traders occupy either permanent or semi-permanent trading sites in public spaces such as street and parks. In Lagos metropolis, many streets are lined on both sides with stalls and open display of wares, effectively creating street markets and affecting the free flow of traffic. The activity is associated with fierce competition for prime site, and is classified to hawking, sedentary and seasonally induced types (Aduwo, 1999). Hawking involves weaving of hawkers between the traffic, especially when there is hold up. While sedentary class involves traders who are seated in one place especially the markets, frontage and surroundings of public buildings, railway set back, bus stops and others. The seasonally induced operates during the festive period. Others are evening market and the foreign currency street markets.

It has been observed that street trading tends to emerge due to the failure of the planning process to make adequate provision to accommodate retail traders. However, with the increase in the level of its patronage and concomitant effect on the land use structure, it is germane to find whether the traditional markets judging from their form, structure, strategic location and evolution is capable of sufficiently satisfying the ever increasing needs of urban population, and whether the retailers and their channels are the right places for the acquisition of such goods.

This paper therefore examines the issues of street trading in Lagos metropolis, the motives and actions of different groups who are involved in its operations are considered. It elaborates on the implication of the activity on the quality of urban environment. It evaluates the effectiveness of attempts being made to check the activity. It presents comments and arguments that suggest the need to explore other urban planning strategies towards the control of street trading problem in Lagos.
metropolis.

Aim and Objectives
The study aims at analyzing and controlling the problem of street trading in Lagos metropolis with a view to promoting a cleaner, healthier and more orderly environment conducive for human habitation. Deriving from the aim are the following objectives viz., identifying the causes, and impact of the activity on urban environment, determining the factors responsible for the persistence of the activity in spite of efforts made by the authority to curb the phenomenon, assessing the perception of consumers to the continuous patronage and suggesting strategies that can be adopted to control the menace.

Literature Review
The market place has been the main form of retail outlet providing alternative areas for buying and selling of goods and services as in the case with many urban centres in Nigeria. However, street trading which refers to any form of buying and selling in an unauthorized place results into a situation where growing numbers of informal street traders clog the street of major city because it is generally regarded as the optimal location for sellers and most convenient for customers (Harrison and Mcvey, 1997). Amongst the various factors responsible for the prevalence of street trading activities in urban areas is urbanization. This does not only lead to enlargement of the already existing markets. It results in emergence of new commercial centres including the creation of informal sector, as well as leading to the growth of commercial areas outside the market. Thus resulting in a scenario that reflects the desire of a certain group of traders particularly those involved in wholesale and other inter retail services. Other factors that aggravate the problem include mismatch between physical planning and development leading to imbalance in spatial distribution of market, the exorbitant price of stalls and shops, increase in level of trading activities which has directly reduced the size of the market, and exacerbating the encroachment of trading activities on roads (Onokerhoye, 1982; Oloko, 1989; Gombey, 1992; Lawal, 2003 cited in Akpenyi, 2007). Views about problems and benefits of street trading are divergent. Harrison and Mcvey (1997) posited that street trading is an anathema to the society not only because it represented unfair competition with organized market, as well as reasons of health owing to food poison from snacks, display of edible food items in a questionable hygienic standard. Tax evasion tendency and associated criminal activity are other reasons against its operation within the urban system. Many of the arguments against street trading were well founded. It leads to congestion especially around the bus terminals and major street making them potential problem areas in case of emergency. Also the wares being displayed on roads as well as illegal stalls lead to environmental degradation. The sound blaring from loud speaker of music vendor leads to noise pollution. The street trading activity by nature may be seen to conflict with the desired image of the city thereby creating a chaotic and unsophisticated appearance which is capable of deterring potential investor. The phenomenon is associated with poverty, hard living conditions and child abuse as children are sent to the street as hawkers (Oloko, 1989; Ebigbo, 2003 cited in Akpenyi, 2007).

Despite its shortcomings, the activity offers benefits that include income earning opportunities for the poor which could be lost during formalization. It provides vital key solution to the problems of unemployment. The juxtaposed location between the street
traders and shop keepers may be beneficial. On one hand, the location of street traders outside a shop might attract customers. On the other hand, both may sell complimentary goods, and traders may look after a shop during the owner's absence (Sanyal, 2001; Hays-Mitchell, 1993). Various scholars have expressed their opinions on the activity. While some authors condemn the activity from its negative feature with a recommendation that traders should be prohibited from unwanted areas of the city. Others see it as a sector that has to be accommodated (Ojo, 1978; Onokerhoaye, 1982; Wellings and Sutcliffe, 1984; Marcuse, 1994; Akpenyin, 2007). In this regard, proponents have recommended purely urban physical planning strategies that include creation of new sites for more markets, proper planning of CBD as means of controlling the activity. These are not linked with issue of good governance. As a way of contribution, this study takes the frontier of discussion further by making its suggestion within the context of good urban governance. Consequently, in an attempt to control the problem of street trading, this paper posits that planners and authorities need to recognize the dynamism of urban centers, and the roles various interest groups within urban system have to play so as to overcome the culture of poverty.

Theoretical and Conceptual Framework

In virtually any city, regardless of its population size, there exists an array of economic activities and functions in which people are regularly engaged. These activities must be organized in space in terms of their types, structure, labour requirement and comparative contribution to the urban economy. In this regard, the urban economic base and central place theories are identified as explanatory tools for providing proper understanding of the study and a systematic direction for the problem under investigation. The recent intrusion of modern capitalism and rapid growth in Nigeria like in any other parts of tropical Africa have resulted in a classic dual economy in which traditional marketing system are intermingled with modern merchandising (Onokerhoaye, 1982). This dualistic nature of the urban base economy is also reflected in the contemporary urban economy of Nigerian cities which Hart (1973) introduced as concept of formal and informal income opportunities in the urban economies of developing countries with special reference to Africa. He based the distinction between the formal and informal urban economic activities on wage earning and self-employment. Hart further divided informal income opportunities into legitimate activities such as primary, secondary, tertiary enterprises and small scale distribution; and illegitimate activities such as smuggling, bribery and others. In this study, street trading is discussed within the small-scale distribution concept of informal sector with itinerant hawkers and petty traders as sub-groups.

Central place theory offers useful explanation to the organization of goods and services in a geographic space and is relevant to the study. The theory recognizes the central place as a place which performs central function that extends over a larger region in which other central places of less importance exists (Christaller, 1966). The goods produced in the central place, due primarily to its centrality, and the services it offers are called central goods and services. Just as central places themselves vary in importance, so do the goods they produce and the services they render. The goods and services that can be produced and offered only by higher order central places are called higher central goods or services. On the other hand, lower order
central goods and services are provided by lower and higher order central places. Lagos functions as the central place of a regional community and mediator of community commerce. This unique feature leads to influx of people to the city for production and consumption of goods and services of different order. Concepts of threshold requirement of goods and services as well as range of a good are relevant to this study. Threshold requirement is actually the level of effective demand of good and services of interest. It is the minimum market or effective demand to bring or to keep provision of goods and services going (Abler, Adams and Gould, 1971). The threshold requirements vary directly with the order of central good or central service. However, since most goods that are distributed through street trading activity are of lower order, it requires a lower magnitude of population.

The concept of range of a good, is the average maximum economic distance that prospective consumers are willing to cover to consume the good or service. Economic distance is physical distance converted into such units as cost of overcoming the friction of space, or cost of travel, time wasted, and discomfort encountered amongst others. Thus, the good or service will not be consumed, if the distance is great in economic terms, because it will be too expensive for a lower order good or service. Accordingly, the ubiquitous nature of street trading activity in Lagos metropolis is explained by the concepts of range and threshold embedded in the central place theory.

Environmental quality concept offers a useful appraisal to the explanation of the spatial variation in the quality of urban environment. When viewed from liveability of city, it includes well-being it goes beyond the physical and infrastructure needs. It presupposes that all settlements and neighbourhoods within them are sets of environment for people to interact and use. It is one where people live in communities that are safe, and environment that are clean, (Van Vliet, 2002; Owei, 2006). Environmental systems that are affected in the process of street trading activity revolve around triad of environmental media including air, water and land. Street traders exert more pressure on these resources with the resultant effects that include bad smell, pollution and health hazards (Omolabi, 2005).

**Study Area**

The study area Lagos is located along latitude 6.27° of equator and latitude 3.24° of the Green which meridian. It is situated at the outlet of the sea of a lagoon that extends from West of Cotonou in the Republic of Benin to the Niger Delta in Nigeria. Lagos metropolis is one of the largest cities in the world. It has grown dramatically over the years from a modest population of 126, 108 in 1931 to 5,686 million in 1991, with an estimated population of over 13 million in 2002, and by that date, Lagos was the 9th largest in the world out of 28 such mega cities (Mabogunje, 2007). The metropolitan area of Lagos differs from many other Nigerian cities in that the land uses are so mixed up. It is worthy to note that the economic activity in the city is a reflection of the national outlook. It is dominated by the distribution of goods and services, manifested through trading. Other forms of economic activities include; construction, transport, communication, fishing and manufacturing. However, as a consequence of its locational and administrative importance, Lagos has been the hub of economic activities in Nigeria. The scope of the study for the purpose of data collection has been limited to Ikeja, the capital of Lagos State. Ikeja is the epicenter of both
economic and social activities in Lagos and a "pull" for urban new comers seeking for jobs. Some of the attractive factors that justified its selection for the purpose of this study include the locational advantage, concentration of infrastructure facilities, relatively high quality urban environment. All these factors make it one of the best neighbourhoods in the metropolis in terms of city life.

Methodology
In recent years, Lagos State Government have tried to control the quality of urban environment through various methods including the cleaning up exercise and enforcement of the edict on prohibition of street trading by the law enforcement agency. Their actions have infuriated the street traders, and sometimes leading to urban violence. Out of the many areas affected by the edict, this study selected Ikeja for a detailed analysis of the problem because it is an important residential, commercial and political administrative area. The method of data collection involved oral interview and questionnaire administration. A total of 120 questionnaires were administered using both area sampling and random sampling techniques since it is not possible to cover the whole of Ikeja because of the geographical area. The area sampling technique employed resulted in dividing Ikeja community into three smaller areas in a non-overlapping manner known as geographical clusters. Three clusters that emerged included GRA, Ogba and Obafemi Awolowo way. Furthermore, all the streets in each of the clusters were identified, and five streets were randomly selected from each cluster. In each of the five streets selected, four questionnaires were administered each to both retailers and consumers in a random manner. The questionnaires aim at collecting information on socio-economic characteristics of respondents, causes of street trading, its persistence in view of efforts at prohibiting it, and awareness of impact on the urban environment. The sampling method employed is useful because data collection is enhanced even when the list of the population engaged in street trading activity was not available. It is equally efficient because it facilitated the conduct of many interviews at each location. A simple descriptive analysis of data using frequencies and percentage method are reported in the tables generated.

Analysis of Results
Socio-demographic status of respondents
From the information gathered, 58% of the respondents (consumers and retailers) were female, while 42% were male. The majority of the respondents claimed to have resided in Lagos for more than 10 years (60.5%), 5-10 years (21.5%), while (15%) have lived in Lagos between 3-5 years. Only (3%) claimed to have lived in Lagos for less than 3 years. Base on the duration of residency in the metropolis, it is expected that they would be sufficiently aware of the reasons why they are engaged in/patronizing street trading, the impacts of this activity on urban environmental quality and the disposition of government towards the menace. In terms of education, (48.5%), (25.5%), (15.5%) attained tertiary, secondary and primary education level respectively, while 10.50% have none.
Analysis of Retailer's Response

Table 1 Age distribution of retailers

<table>
<thead>
<tr>
<th>Age-group in years</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>16-20</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td>21-25</td>
<td>10</td>
<td>16.67</td>
</tr>
<tr>
<td>26-30</td>
<td>13</td>
<td>21.67</td>
</tr>
<tr>
<td>31-35</td>
<td>17</td>
<td>28.33</td>
</tr>
<tr>
<td>36 and above</td>
<td>12</td>
<td>20.00</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field survey, 2006

The table above revealed that (28.33%) of the respondents are between the age of 31-35 years, while (21.67%) are between 26-30 years, (20%) are 36 years and above in age. (16.67%) are between 21-25 years in age, (8.33%) constitutes age group of 16-20 years and only (5%) are children between 10-15 years. From the analysis, it could be deduced that the people involved in street trading activities are mainly in the age range between 21 and 36 years. This constitutes the most active age group of the labour force.

Table 2 Years Spent in Street Trading

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>7</td>
<td>11.67</td>
</tr>
<tr>
<td>4-6</td>
<td>10</td>
<td>16.67</td>
</tr>
<tr>
<td>7-9</td>
<td>15</td>
<td>25.00</td>
</tr>
<tr>
<td>10 and above</td>
<td>28</td>
<td>46.66</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006

When asked how long respondents had engaged in street trading activities, (46.66%) claimed over 10 years, (25%) indicated they had engaged in the activities between 7-9 years; (16.67%) had spent between 4-6 years in street trading, while (11.67%) had been engaged in it between 1-3 years. Thus, the study showed that a very high proportion (71.66%) of respondents had engaged in the activity for an upward of 7 years. It is expected that they would be aware of the government disposition to the activity, as well as the impact of the street trading on the quality of urban environment.

Table 3 Types of Goods Sold by Street Traders

<table>
<thead>
<tr>
<th>Goods</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textile</td>
<td>4</td>
<td>6.67</td>
</tr>
<tr>
<td>Building Materials</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>Household item</td>
<td>12</td>
<td>20.00</td>
</tr>
<tr>
<td>Food</td>
<td>41</td>
<td>68.33</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006
Responses to the question what type of goods sold by street trades were varied and could be categorized into four broad groups (Table 3). A high proportion (68.33%) of respondents claimed food items. This is because it is a basic necessity of life, and it is seemingly an activity that is female dominated. (20%) display household items, (6.67%) engage in textile materials and only (5%) sell building materials. This suggests that the interests of different groups of the society in terms of needs are met through this activity.

<table>
<thead>
<tr>
<th>Table 4: Awareness of Government Regulations on Street Trading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>No Response</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006

The study as indicated in table 4 showed that there is high level (95%) of awareness among the traders of government regulation and the edict of 1984 prohibiting the illegal activity, as well as the existence of task force mandated to enforce the law. However, (3.33%) claimed they are unaware of the edict, as well as the existence of any agency responsible for the enforcement of the law. Only (1.67%) did not respond. The question now is if traders are aware of government's disposition to street trading, and consequences of violation of 1984 edict why do they continue to engage in it?

<table>
<thead>
<tr>
<th>Table 5: Reasons for Engaging in Street Trading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons</td>
</tr>
<tr>
<td>High shop rent</td>
</tr>
<tr>
<td>Non-availability of shop</td>
</tr>
<tr>
<td>Not to be idle</td>
</tr>
<tr>
<td>Income generation</td>
</tr>
<tr>
<td>Ease of entry</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006

The study indicated that despite the awareness of government regulation/edict on street trading and existence of agencies charged with responsibility of enforcing the law, people still engaged in street trading activities for various reasons. (55%) claimed it as a veritable source of income for them, (20%) responded that ease of entry determined by low capital base and lack of any special requirements attracted them to it, (10%) reasoned that high shop rent is responsible, while (33%) advanced reasons of non-availability of shop. Only (6.67%) claimed that it prevented them from idleness. What these reasons imply is that any control measure to be adopted must take full recognition of all.
Table 6: Opinion about the general hazard caused by street trading on their lives

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high opinion</td>
<td>24</td>
<td>40.00</td>
</tr>
<tr>
<td>High opinion</td>
<td>21</td>
<td>35.00</td>
</tr>
<tr>
<td>Low opinion</td>
<td>10</td>
<td>16.67</td>
</tr>
<tr>
<td>Very low opinion</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>3.33</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006

Analysis of the opinion of the street traders to the hazard the activity posed on their lives varied. (40%) expressed a very high opinion that it exposes them to various hazards including health. In the same vein, (35%) holds a high opinion that the activity is hazardous to their lives from the point of view of accident. In spite of their knowledge about the hazard, they continue to engage in it, as it is only one of the means by which they eke out a living. Furthermore, (16.67%) expressed a low opinion that the activity is hazardous to them in any form. (5.0%) expressed a very low opinion regarding the hazardous nature of the activity to their lives. While (3.33%) did not respond.

Analysis of Consumer’s response

Table 7: Consumer’s Place of Residence

<table>
<thead>
<tr>
<th>Place of Residence</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ikeja and Environs</td>
<td>41</td>
<td>68.33</td>
</tr>
<tr>
<td>Outside Ikeja</td>
<td>16</td>
<td>26.67</td>
</tr>
<tr>
<td>Outside Lagos</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006

The data showed that (68.33%) of the patronizers live within Ikeja environs (Table 7). (26.67%) of the consumers reside outside the study area, while (5%) of the consumers came from outside Lagos. The analysis corroborates the position of Goodall (1972) that most of the goods and services distributed through street trading are produced locally, and are consumed locally, thereby generating further income for employment in the local context.

Table 8: Reasons for Patronizing Street Traders

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of variety of articles</td>
<td>6</td>
<td>10.00</td>
</tr>
<tr>
<td>Easy accessibility</td>
<td>9</td>
<td>15.00</td>
</tr>
<tr>
<td>Cheap price</td>
<td>13</td>
<td>21.67</td>
</tr>
<tr>
<td>Convenience</td>
<td>32</td>
<td>53.33</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006
Table 8 portrayed various reasons why customers patronize street traders. The analysis indicated that (53.33%) patronize it for the sake of convenience. Other reasons adduced to its patronage include cheap price (21.67%), ease of accessibility (15%) and availability of various articles (10%).

**Table 9: Perception about the negative impact of street trading on urban environment**

<table>
<thead>
<tr>
<th>Perception</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very great perception</td>
<td>45</td>
<td>75.00</td>
</tr>
<tr>
<td>Great perception</td>
<td>12</td>
<td>20.00</td>
</tr>
<tr>
<td>Poor perception</td>
<td>2</td>
<td>3.33</td>
</tr>
<tr>
<td>Very poor perception</td>
<td>1</td>
<td>1.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006

Table 9 gives information about the perception of customers on the impact of street trading on the urban environment. It showed that (75%) have a very great perception of street trading constituting a nuisance to the urban environment. (20%) have a great perception of the fact that the activity is a threat to urban environmental quality. This may be explained by the level of their education. This is because education enhances ability to perceive issue objectively. However, (3.33%) have a poor perception of the impact of street trading on urban environment, while 1.67% have a very poor perception of the impact of the activity on urban environmental quality.

**Table 10: Ranking of street trading hazard on urban system**

<table>
<thead>
<tr>
<th>Nature of hazard</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crime</td>
<td>15</td>
<td>25.00</td>
</tr>
<tr>
<td>Traffic congestion</td>
<td>23</td>
<td>38.33</td>
</tr>
<tr>
<td>Conflict spatial disorderliness</td>
<td>10</td>
<td>16.67</td>
</tr>
<tr>
<td>Environmental degradation</td>
<td>12</td>
<td>20.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Field Survey, 2006

When asked to rank the problem posed by street trading in order of seriousness on the urban system, (38.33%) of the respondents claimed that it aggravates traffic congestion. (25%) indicated that it compounds the problem of crime including theft, pick pocketing and robbery. Furthermore, (20%) asserted that it leads to environmental degradation, including pollution of water, land and air. While (16.67%) explained that it bastardizes the master plan causing conflict between vehicular and human traffic.

**Discussion**

The research has been able to reveal some fundamental facts which are basic to the nature of street trading activities covered by the study in particular, and Lagos metropolitan area in general. By nature, street trading is ubiquitous, because it requires low threshold population to make it a profitable venture associated with the fact that the varieties of goods that are traded under street trading are lower order that requires a low range. In other words, the consumers are not
willing to travel far to consume it. Other factors that explain the prevalence of the activity include relative ease of entry that is characterized by low capital base, lack of special skill and educational qualification required to start the activity. The study also revealed that it often bastardizes the city’s master plan as it often competes for prime site with other land use activities and may have adverse effect on investment drive.

The study has indicated that several socio-economic factors are at play in the emergence and persistence of street trading in Lagos metropolis. Of great importance is the revelation that the majority of those who engage in street trading are within the labor force bracket who have probably migrated from rural areas or from less urban centres to Lagos for job opportunities but has to make a living by engaging in an informal sector of employment (street trading) while the white collar job seemed not to be forth coming. Once the activity has started, the retailer will prefer to sell along the street outside the authorities' regulations on health, safety and quality controls especially where the traders have been previously tolerated by system of corruption, linked with the trader's belief that it is more profitable to trade on the street than in an organized market since the high cost of shop renting is avoided through its operation. Besides the activity seems to flourish in the metropolis because the traders are readily accessible to their customers.

An interesting thing the survey revealed was the opinion that the traders expressed concerning the hazard and other social vices this form of commerce is associated with. This reflects the profile of the respondents. Indeed, one of such is the projection of an unfavourable image it gives of the city as the activity has the tendency to exert more pressure on all kinds of physical facilities including open space, pedestrian bridges, road medians, and kerbs thereby destroying the aesthetic quality of the city. It also contributes in no small measure to the large quantity of waste that eventually finds it way to drainage channels that results in urban flooding especially during the raining season. The survey showed that most customers that patronize street trading do so for the reasons such as convenience as they do not have to confront with the problem of parking. It enables them to avoid unnecessary time being wasted on the road when they go for shopping in an organized market. They advanced reasons of accessibility to variety of goods, and reasonableness of pricing as justification for patronage. In addition, the revelation of the awareness of the problems posed by street traders including the traffic congestion, health hazard, untimely death resulting from road accident and railway line, as well as conflict between the traffic and pedestrian are of interest to urban planning.

**Conclusion and Recommendation**

The study analyzed the causes and effects of street trading on the urban environmental quality in Lagos metropolis. The paper observed that in spite of the various efforts made by government to eradicate street trading or remove street traders by a way of prohibitive and restrictive measure in order to tackle other crime problems, the activity still persists. It therefore indicates that street traders could be argued as representing the people who are an essential element within the social, economic and cultural life of Lagos city in particular and Nigeria in general. Thus, what this portends in a heterogeneous society like ours is the fact that a prohibition of street trading and the use of open space without addressing the widely underlying structural issues in the country's economic, social and
political system are unlikely to achieve a solution that will satisfy all interest groups. Thus, it is important for the authority in making a decision to understand that any restrictive measure against informal sector particularly street trading may be seen as a threat to popular culture.

In conclusion, it is prerogative that any proposed development plan of the city should recognize the basic and non-basic economic sector of the city, and incorporates adequate mechanisms to plan for the two. Therefore, since the authorities had heretofore find it a difficult task of reconciling the needs and interests of all parties concerned in the multiple use of city space, and ensuring the present and future social, economic, political and cultural development of the city, several suggestions are made with a view to controlling the menace of street trading for a sustainable urban development. The suggestions being made are guided by a range of issues from local politics, to the nation's economy and the national and international significance of Lagos. It is done with the understanding that attention must be given to the creation of employment opportunities to overcome the principal problem of culture of poverty that is prevalent in our country as a developing nation.

Firstly, the authority's harsh attitude towards informal sector with particular reference to street trading must change. There must be a tacit acceptance of informal sector activity in specific designated areas within high density housing neighbourhood in certain days of the week. In other words, a 'minimum tolerance' approach should be adopted with a proviso that standard laid down to guide the operation of the activities are strictly adhered to. In this regard, it is suggested that the traders are allow to operate under licensed requirement within the designated neighbourhood. What this indicates is that underneath the chaos which street trading is notorious for, there could still be orders, that a pragmatic approach can go a long way to benefit the urban poor even where the formal regulatory system is hostile.

Secondly, since keeping traders off the street required heavy policing and vigilance, a costly activity which may be unsustainable, associated with the fact that the activity is a social necessity, thus within the context of good urban governance, it is suggested that the authorities and the recognized 'leaders or protectors' of street traders go into dialogue and negotiations with a view to establishing an unconstitutional agreement concerning the location of street trading activity so as to stem the abuse of use of land in an haphazard manner at the neighbourhood level within the community.

Thirdly, the implementation of section 11, sub-sections 1 and 3 of urban and regional planning law decree 88 of 1992 should be encouraged in a manner that continues to promote the sustainability of the city. In this regard, the LPA charged with the responsibility of preparing town plan would be adequately informed and prepared to undertake development control within its areas of jurisdiction to forestall illegal land use activity.

Fourthly, the retailers could be mobilized, and registered in a cooperate group for the purpose of education, empowerment and financial assistance. The implications of this suggestion is that street traders are recognized as part of city governance that include the whole gamut of actors and institutions which influence and determine what happens within the city (Devas, 2001).

Undoubtedly, all cities need regulation if they
are to function efficiently. However, cleaning up a city, by imposing order, neatness and regularity should not lead to denial of citizen's means of livelihood and survival. Rather than attempts that aimed at stifling street trading activity in the city, concerted efforts should be made to guide its operation using a constructive management strategy highlighted above for a sustainable urban development.

REFERENCE


Van Vliet, W. (2002). Cities in a globalizing world from engines of growth to agents of change. Environment and Urbanization, vol. 14 no. 1 April, pp 31-
This paper discusses the challenges faced by the Urban and Regional Planner in guiding development in Lagos State. It explains the concept of planning as space arrangement and allocation, development control as a tool to achieve these and that competitiveness is securing and defending Lagos market share. The paper notes that the unprecedented rate of urbanization in the State with its implication on the rate of development, explains why planners are unable to guide development activities. The paper argues that the challenges facing planners in making the city competitive arise from the fact that planner's statistics cannot cope with the nature of demand for spatial expansion in the city. As a result, there is difficulty in reconciling needs in a sustainable manner, questionable expertise in the preparation of statutorily required plans, high incidence of ratification, contraventions, and development pressure that conflicts with zoning plans. In other to make Lagos competitive the paper suggests among others that professional practice should be strengthened, some stages of the control process deregulated, facilitate broad based public participation and capacity building, enhancement of planning information/data, and encouraging the establishment of physical planning oriented Non Governmental Organizations (NGOs).

Introduction
The world we live in is very dynamic in every ramification it has consequential effects on man's activities and the environment in which he lives (Adebayo, 1996). The actors and stakeholders in the environment are many and have different but useful contributions. There is the tendency to argue that the past is gone and that we should concentrate our efforts on the future, hoping and working for a better tomorrow. This is a possible but futile approach because there are several lessons to learn from experience if competitiveness is to be engendered. Further analysis of the topic of this paper shows that there is no way one can avoid discussing - who an Urban and Regional Planner is, the concept of development control and cities competitiveness—a term described by Iain (1999), as the path to 'economic nirvana' and a sought after property of any economy.

Background to the Planning Profession
Modern urban planning started in the middle of the 19th Century as a result of the challenges posed by substandard housing and poor environmental sanitation. Conceptually, urban planning is a conscious method of arranging the city in an economic, aesthetically and functionally efficient manner (Keeble 1969). This has been simplified by Obateru (1988) "as space (land) organization involving the location of land uses on functional and mutual basis and the
allocation of land to them..."

Contemporarily, the practitioners (of this form of planning) are referred to as Urban and Regional Planner. However, the earliest practitioners were engineers, architects and surveyors, which suggest why it is multidisciplinary in nature. Since the middle of the 20th Century, trainees in planning have, therefore, been exposed not only to urban and regional planning principles and techniques but also allied subjects in Engineering, Architectural design, Social Sciences and Geo-informatics. (Awogbemi, 1998; Olaseni, 2001). A successful training qualifies one, as a pupil planner who automatically becomes an Urban and Regional Planner after two years post-qualification pupillage and having passed the Nigerian Institute of Town Planners (NITP) and Town Planners Registration Council (TOPREC) professional examinations.

There are opportunities for employment in various public offices and government departments such as the National Urban and Regional Planning Commission, the various State Planning Boards and Local Planning Authorities as stipulated in various statutes and laws. Since the planner operates on space (land) and the geographical space in context is Lagos State, it is pertinent at this juncture to present a vivid description of Lagos State in order to appreciate the magnitude of challenges that the planner faces and prepares to attend to in order to make it competitive.

**Lagos State in Perspective**

Lagos State was created in May 1967 as a product of administrative restructuring of Nigeria into 12 states. Its size remains as 3,577 square kilometers even though Nigeria was further split into nineteen (19), twenty one (21), thirty (30) and finally thirty six (36) states over the years. Before its creation, Lagos municipality was under the administration of the Federal Government through the Federal Ministry of Lagos Affairs as the regional authority. The city of Lagos was under the Lagos City Council. Ikeja, Agege, Mushin, Ikorodu that now form an integral part of the state were under the former Western Region. (Lagos State Regional Plan. 1980, Oduwaiye 2000).

**The Geography of Lagos**

The state which is the smallest in Nigeria lies approximately between longitude 2.42'E and 3.42'E and latitude 6.22'N and 6.52'N. It locates on the south western part of Nigeria with the southern boundary of the state framed by about 180km along Atlantic coastline while it is framed in the north and east by Ogun State. The Republic of Benin forms the western boundary. In areal extent it covers 358,861 hectares or 3,577sq km. This represents 0.4 percent of the entire land area of the country and ironically accommodates about 11 percent (11%) of the entire 140 million approximate population of the country. (NPC, 2007). Some twenty-two years ago, Wilbur Smith and Associates put the population per square kilometer at about 1,300 people when the average for the nation was 85 persons per square kilometer. This translates to more than 15 times the national average population density. During this period, about 2,000 persons occupied a square kilometer in built-up areas of the metropolis. It is important to note that about 17% or 60,839 hectares of the 358,861 hectares area of the land covered by Lagoons and water ways (Odumosu, 1999).

**Employment and Commerce in Lagos**

Lagos as at 1980 accommodated 40% of the nation's skilled labour force (Peterson et al, 1990). It's dominance in the economic sector...
is also reflected by the fact that as at 1997 of the 2190 bank branches in Nigeria, 504 or 23% were located in Lagos State. Also, 66% of commercial bank headquarters were located in Lagos State. Out of about 151 merchant banks in Nigeria only one had its headquarters outside Lagos state (NDIC 1997). With the banks' consolidation exercise, all the banks now have their corporate headquarters in Lagos, and same could be said of the recently consolidated insurance companies. It is the most industrialized in Nigeria and accounts for the highest number of educational institutions in the country with so many tertiary institutions having study centers located here and there especially within the Lagos Metropolitan Area. These have implication on housing; utilities, services and development control matters.

**Urbanization of Lagos**
The quality of the environment is greatly influenced by the number and quality of people within that environment. A close look at population and its growth rate in Nigeria and Lagos gives an insight into the enormity of the problems and perhaps challenges to anticipate. Figures from Nigeria's national report to the Habitat II World congress in Turkey in 1996 show that as at 1946, no settlement in Nigeria had a population of up to 200,000 (Kadiri 2000). And from available records, within a period of fifty years (50) 61 cities of over 200,000 have been produced, when none was existent in 1946- an indicator of high urbanization rate. This become interesting when one realizes that as at 1921, Nigeria's urban population was just 5% of the total. This proportion rose to 20% in 1970, 38% in 1993, and 40% in 1996 and has been predicted to reach 60% by year 2010 (Makinde 2000) and 62% by the year 2025 (Onibokun 2000)

When compared with the national average the growth of Lagos State has been more alarming. In 1991, census figures showed that over 90% of the population in Lagos State were living in urban centers as against the national figure of 36.787%. It had grown from a population of just over 230,000 in 1950 to over 1.1 million in 1963 and over 7.0 million in 1991. It has been projected that by 2015 Lagos will become the third mega city in the world with a population of over 24.7 million. With this Lagos will be trailing behind Tokyo (Japan) and Bombay (India) (Makinde 1999). This rapid growth has implications for land requirements.

From the foregoing, it can be seen that Lagos affords a good example of an urban settlement whose evolution; development and growth are intricately linked to the exploitation of its natural resources. Its closeness to the ocean, existence of plain lowland and its strategic location within the most resourceful and highly concentrated population of the south-west region of Nigeria have all contributed immensely to the rapid transformation of a simple fishing settlement to one of the most complex metropolises in the world. Despite its being deprived of its former status as the capital of the country, Lagos still continues to function as a cosmopolitan settlement, growing in economic strength and least disturbed or adversely affected. This is a confirmation that settlements whose development and growth are based on natural endowment are always able to withstand the test of time (Taiwo, 1999).

The challenge posed by these observations to those saddled with the responsibilities of planning and managing the metropolis is the need to mobilize all available technical and financial resources to sustain appropriate development of the state. This will require
concerted actions targeted at ensuring that the development of the state meets the needs of the present without compromising the ability of future generations to meet their own needs. (Brudtland Report 1983).

The trend of urbanization has led to the intensive utilization of any available land and reclamation of wetlands especially those in the built-up areas. It has even brought into reality gradual but disastrous encroachment into the lagoons and creeks. To stem this, there is the need to control these spates of development in order to bring sanity into the state of things. Therefore the next section of this paper will focus on the concept of development and control and the efforts so far in curtailting flagrant and indiscriminate physical development.

**Concept of Development and Development Control**

Development could be taken to mean economic growth, Seers (1969) conceived development as involving not only economic growth but also all conditions in which people in a particular place have adequate food, jobs and there is little disparity in income. This suggests that development should embrace the issue of qualitative physical environment, modernization, equity, economic growth and socio-economic transformation.

The concept of development relevant to this paper is physical land (space) development. Section 22 of the British Town and Country Planning Act of 1971 defined "development" in relation to land as "The carrying out of building, engineering mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land", while the Lagos State Edict of Nigeria No5 of 1998 defines it as conversion of land or building structure from its established or approved use, including the placing or display of advertisement on the land, building or structure, and the making of any environmentally significant change in the use of any land or demolition of building including felling of trees".

This paper prefers a working definition as follows: The carrying out of building, rebuilding, engineering, mining, demolition, or other operations on, or under the earth's surface or the making of any substantial or environmentally significant change in the existing use of a landed property, or felling of trees and the placing of free standing erections for advertisement purposes on the land. This suggests that for any of these operations to take place, since they are subjects of development, they need planning permission.

The term planning permission or development permit emanates from development control (D.C.) activities. It means permission to develop any land, or building granted by the authority empowered to give such under the law. The planning instruments employed to control (guide) land use and land development proposals are building and land subdivision regulations (bye-laws), which are largely planning (space) standards. The process of implementing these regulations is referred to as ‘development control’. It entails exercising regulatory powers over physical development of land by granting or refusing permission or by attaching conditions to permission for development to take place.

**Existing D.C Efforts in Lagos State**

The Lagos Executive Development Board (LEDB) was established in 1928 by a legal instrument, which declared it a planning city. This agency, which had no trained town
planners, engaged in plan approvals and housing construction (Awesu, 1995). Also in 1956 the Ikeja Area Planning Authority (IAPA) was established to take care of planning for areas beyond the then Federal Territory and both agencies acquired land compulsorily and developed them into estates. But in 1972, the functions of LEDB, IAPA and Epe Town Planning Authority (ETPA) were fused to form the nucleus of The Lagos State Development and Property Corporation (LSDPC).

Prior to 1974, when Doxiadis and Associates were appointed to plan Lagos Region up till 1980 when the plan was completed and between same period when UN experts and Wilbur Smith Associates finalized the Master plan in 1980, planners had to make do with piecemeal and uncoordinated development as there was no main development plan.

With the identification of 42 Slum areas in Lagos in 1984, upgrading schemes were initialized for places like Olaleye Iponri, Badia, Ipodo, Otto, Sari-Iganmu and parts of Lagos Island. One of the fallouts of this is the total clearance of Maroko in 1990. Efforts to guide and re-shape other slums led to the creation of the Lagos State Urban Renewal Board in 1991. This became necessary due to the neglect these areas had suffered over the years due to lack of development plans, and inadequate manpower, equipment and expertise.

In 1992 the Federal Government enacted URPL to streamline planning activities, which was nullified by the Supreme Court judgment of 2003. Nevertheless, in consonance the Lagos State Government promulgated Urban and Regional Planning Activities Edict of Lagos State No.2 Vol. 19 L.S.N. Official Gazette Ikeja in 1998 establishing Lagos State Urban and Regional Planning Board (Board) to enable her decentralize and effectively cover the entire state. This has given birth to many District Planning Offices and Local Planning Authorities. The question is on how these activities have assisted competitiveness of Lagos as a commercial city. This and the concept of competitiveness are attempted in the next section of his paper.

**Competitiveness of Cities**

Cities are increasingly engage in competition with one another whether at international, national, regional or urban level. Competitiveness can be enhanced when there is the right local environment for business success. It can be argued that globalization; advances in information technology and far reaching structural change have altered the terms of competition between cities (Jensen-Butler et al., 1997). At one level the term competitiveness is equated loosely, with the "performance" of an economy, an absolute measure. At another, because it relates to competition, it implies that to be competitive, a city has to undercut its rivals or offer better value for money. In this sense, competitiveness is actually about securing (or defending) market share.

Paul Krugman (1996) had argued that the current fashion for promoting competitiveness is nothing more than mercantilism in sheep's clothing and thus, a threat to free trade, simply put, Krugman's view is that competitiveness is an attribute of companies, not of cities, regions, countries or continents. However, Porter (1998), in his seminal study of competitive advantage deplores the lack of attention to competitiveness in standard international trade theory and suggests that economic analysis is diminished by this lack. Some cities have lost their competitive
advantage, in many parts of the world; major cities that were the powerhouse of their respective economies have lost ground substantially. The decline of traditional manufacturing or mining lies behind the relative decline of many of the “rust belt” cities of the North and East of the US, or the old industrial cities of northern Europe or industrial cities or zones in Nigeria.

There are two critical elements that need to be analysed: the first is resource utilization. If any economy has idle factors of production, it is plainly failing to attain its potential. Specialization may make sense, but if it inhibits capacity utilization, then it detracts from performance. The second is institutions in the widest sense of the term. In a Coasian view of the world (Coase, 1960), the organization of productive assets in a firm gives rise to the analysis of the firm as the unit of production. Although there can be caveats about co-operation and value chains, it is fair to say that firms are competitive. But nations, region or cities too can be seen as collection of assets, so that it is reasonable to think in terms of the competitiveness of that bundle of assets.

At the aggregate level, and with full employment of resources, competitiveness and productivity is essentially the same thing according to some economists. Again, Porter is forthright “The only meaningful concept of competitiveness at the national level is national productivity” (Porter 1998), while Fagerbe (1996) has emphasized the quality of investment and use of technology as part of competitiveness.

Competitiveness is most often discussed in relation to the tradeable part of the economy, in particular manufacturing industry. In the short term, competitiveness depends on the structure of the economy and on its sectoral specialization as well as contextual conditions such as the character and effectiveness of institutions, the quality and spread of infrastructure and other factors which influence the efficiency of the national system as a whole. In the long term, however, competitiveness depends on the ability to sustain change in the factors that give rise to productivity growth.

A white paper produced in 1995 by the UK government offers this definition for competitiveness at the company level: for a firm, competitiveness is the ability to produce the right goods and service of the right quality, at the right price, at the right time. It means meeting customers’ needs more efficiently and more effectively than other firms (DTI, 1995). For a nation, the OECD defines competitiveness as the degree to which it can, under free and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term (DTI, 1995).

However, the term urban competitiveness is interpreted as a situation where some cities manifestly “perform” better than others in so far as the income and employment generated within their boundaries exceed those of others. This suggests that, the capacity of a city to compete is shaped by interplay between the attributes of cities as locations and the strengths and weakness of the firms and other economic agents active in them.

Several authors have noted the increase over the past years in competition between cities to gain investment and to promote themselves. Cities where property costs are high or labour is expensive will, other things being equal be at a disadvantage. The degree of congestion in transport systems could; conceivably, affect
commitments to timely delivery of products, lack of immediate or easy access to specialized business services right, make it more difficult for a firm to upgrade quality or design. Attitude to land-use planning will bear on the types of economic activity that is able to flourish. Competitive ethos is, increasingly, affecting cities obliging them to be more active in marketing themselves and in trying to identify and reinforce their assets (Gordon and Cheshire 1998). With this background, the challenges of urban planners in having competitive cities are discussed in the next section of this paper.

**Challenges**

The World Report on The Urban Future (URBAN21) whose vision is “Liveable Cities and Vibrant Civil Societies” analyzed the current global trends in the field of urban development and proposed guiding principles for the city in the 21st century. It is important to put in perspective those forces that forged the explosive growth of cities in the 20th century as:

'Deagrarianization and rural overpopulation combined with industrialization; its concomitant deindustrialization combined with the growth of the service sector; the mobility revolution and; the parallel telecommunication revolution'.

Today we can see the great transforming force of the 21st century: it is the information revolution, which is already bringing cities together in complex global systems of interaction and interdependence. (Urban 21) The consequence of these forces is manifested in Lagos, a city that is not only ailing but choked up and gasping for breadth, Egunjobi (1999). The state is urbanizing at an alarming rate. In 1979, the population figure was 4.6 million and its growth was put in excess of 9 percent thus resulting in an additional 300,000 persons per annum, or 25,000 per month or 833 per day or 34 persons per hour (LSRP 1986). The population is expected to reach over 24.7 million in year 2015 making it the third mega city in the world trailing behind Tokyo (Japan) and Bombay (India), (Makinde 1999), which suggest an increase of 536%, and a growth rate of 9.7 %. Surprisingly current efforts have not justified the preparedness of the state to accommodate these people and the resulting development.

For instance there is no plan document (legal) being used in the state, the regional and master plan that are in existence, were prepared in 1980 and expired in 2000 and none has replaced them. It is a common act of Town planning to serve contravention or demolition notices and even put the red 'X' mark on houses. This is expected to continue at a higher rate due to the ballooning contraventions due to lack of necessary instruments. As already, mentioned the Lagos master plan and Lagos State Regional Plan is out of date and the preparation of another one is a great challenge of planners since they are expected to guide development. Again, plans do not take into consideration economic development. Its preparation should therefore embed economic growth and development and enhance its competitiveness. It is expected that illegal development will proliferate in Lagos, as the few available planning officials will not be able to match it; this is also a great challenge.

Illegal developments are expected to encroach on Agriculture, woodland, forest reserves and wet lands. Wilber Smith projected that to accommodate an additional 10 million people; a total of 665km² of land would be needed. Their report concluded that if none of the wetlands in existence were reclaimed then
about 65 percent of the available land would be needed for urban expansion. The situation is getting worse by the day and the reconciliation of needs and resource in a sustainable manner has become a great challenge.

The URPL expects the preparation of a variety of physical development plans (part 1A section 1, 2 & 4 refers). Conservatively no fewer than 125 outline development plans will need to be prepared. The challenge is the financial and technical wherewithal to prepare them.

The land policy of Lagos State placed over 50% of its land area under government acquisition and beyond this a reasonable portion of the others are schemed (Odeyemi 1989). The expected high rate of physical development and the village excision policy of government will put undue demand on the services of town planners. This will be in the area of ratification exercises, preparation of development plans for excised villages and other developmental requests. This could be very challenging.

Planning practice as it is presently structured relies on land use zoning approach, which does not respond quickly to pressure for development and dynamism in use. These changes that conflict with zoning policy will be tremendous in quantum in the period under consideration and it is a challenge which planners should be prepared to face.

In addition, the practice places emphasis on the production of long term blue print or master plans as stated in part a sec 1-4 of the URPL. These are often very static and not responsive to the dynamism of the state. The practice is also top down and does not allow for the participation of the private sectors and other stakeholders. The challenge to be faced is that of planning with the people and producing people that plans. This means that participatory planning will be one of the challenges the planner should expect and be prepared to moderate.

In the past, too much emphasis is on the development of the state with little or no consideration for the impact of these developments. But with the enactment of URPL, certain categories of development are to prepare Environmental Impact Analysis (E.I.A) (sec 33), which really challenge the planning profession. Sometimes, the Board requested certain categories of development such as Eateries, Petrol Retail outlets and places of worship (The Guardian Jan 31, Feb 12 and 28 2001) to submit for reappraisal their building plans and E. I. A. reports and Environmental Impact Audit Report (EIAR). When one considers the quantum of response, and the number of over 120 petrol retail outlets (Olaseni 1998) and mushrooming churches the challenge becomes very great.

As the population is projected to increase correspondingly, the rate of refuse generation will be on the increase. The planners have a challenge to conceptualize management strategy to accommodate this situation in order to remove the tag of being the ‘dirtiest city’ in the world.

Energy and resource conservation is top on the world agenda. Town planners face the challenge of directing their efforts toward activities that conserve resource in such a way that will ensure the supply of natural resource for present and future generation, encourage efficient and discourage wasteful use of non-renewable resource and encourage their substitution by renewable resources.

The world at large is in the age of information
communication technology, and virtually every human endeavour is being com­ putrised. Due to increasing urbanisation and the avalanche of data resulting from planning exercises Urban Planners will face the challenge of being computer literate, compliant to the dictates of this age. Furthermore, the need to generate cadastral information in a professional manner will necessitate the use of G.I.S. in essence; he must equip himself with the rudiments and must be able to apply it. Nevertheless, the response to these challenges are as expressed in the next and concluding part of this paper.

Conclusion and Recommendations
This paper discussed the planning profession and its place in the area of development control in order to make Lagos competitive. It highlighted the trend of urbanization and its consequences especially in the face of a dearth of government physical planners. No doubt the challenges are great and require the sincerity of purpose in order to enable planners to strategize. In order to be properly positioned suggestions such as strengthening the private and public sector, capacity building and improvement of planners' skills to reposition them and playing an advocate's role will go a long way in ushering sanity into our urban milieu in Lagos State. Some of the suggestions to reposition the town planners in facing the challenges earlier outlined are as follows:

Strengthened Professional Practice
It is a fact that over half of the world's population now lives in the urban environment. A reasonable growth will take place in Africa and Asia and specifically in Nigeria. Consequently, planners in the public service should be resolved more than ever before to encourage the decision makers to cause the preparation of all the categories of plans. Secondly, private planning firms are expected to proliferate. One of the problems faced by the existing ones is that of weak financial base and the capacity to engage in extensive planning projects. As a strategy, merger options should be explored as a very sure way of attending to this challenge.

As a response to the requirements of the information and communication age, the planners approach to computer skill acquisition and application must be proactive. Therefore, efforts must be geared towards training and re-training in the new state-of-the-art and technology that can cope with the speed and quality of information dissemination in this area. All planners must be able to approach the computer, work with it and be familiar with basic software required in drafting, project planning and presentation such as Auto CAD, Microsoft Project, and Microsoft word and Excel and G.I.S. The planning studio should be devoid of drawing tables, Tee squares, tracing papers and parade high capacity CPU, enhanced printers and plotters for extraordinarily large works.

Deregulated Development control stages
Planners in Lagos State do not control development they only chase it. One of the strategies to employ is the deregulation of certain responsibilities and stages of the development control and the invitation of private planning firms to take up this initiative. In its simplest form (Olaseni 1998), has proposed a framework in which a specific Local Government Area can be split into manageable zones and each allocated to private planning firms to detect contravention and stem incidence of illegal developments and as such, restore sanity into our cities. The model will expect them to write situation report, advice the developer on the procedure to follow and assist them in obtaining the
necessary planning approvals.

In line with this, Olomola (1999) suggested a model that takes the burden of development control off the shoulders of the Board. In its simplest form, it advocated for the preparation of a planning report for every application that has to do with title to land and physical development. These models together take care of detection of illegal development, site inspection and reporting stages in the approval process. Property restoration, assurance and demolition will also fall within the concept already advanced.

Similarly, a strategy considered appropriately robust for acceleration is a model of professionalising the approval process (Olomola, 1999). In this model, it is proposed that only registered physical planners can submit process and secure approval for all categories of development.

Broad Based Public Participation

Hitherto, Planning activities and proposals have been carried out without consideration for the masses, but people are getting less timid, and are becoming more educated and enlightened. This suggests, therefore, that they must be planned with. A drastic departure from the existing process of preparing and implementing physical plans is necessary for sustainable development control and having a competitive city. Town planning must replace with bottom-up planning the present top-down approach. As such the town planner must be able to bring together all stakeholders in the development of the state. Among these are those who possess relevant information, those whose interest are affected and those who control relevant implementation instruments and resource for development control.

In the area of formulating space standards, setbacks, easements etc, the planner should formulate a strategy to bring all together including all built environment professionals in order to enhance compliance.

There is the need to establish an Economic Development Board for Lagos Metropolis, which will work hand in hand with the urban planners in order to champion vision in economic and business matters.

Capacity Building

The process of capacity is one that should involve human resource, institutional development, integrated environmental planning and management awareness and involvement of local communities, capacity building of actors, stake and resource holders. Over the years, planners have acquired many orthodox concepts, paradigm and approaches for dealing with various problems associated with uncontrolled city growth.

According to Jacob (1977) most of these design concepts lean toward the doctrine of “salvation of bricks”. The UN City Agency has argued that it is not necessary to scrap them but there must be shift in emphasis in the process from a purely technocratic process to a management process i.e. to depart from ‘planning the city’ but to adopt a new scenario of a “city that plans”. Because of this, it recommended the adoption of the environmental planning and management (EPM) process. A workshop had already been organized in this new thinking, nevertheless, a repeat of this is still desirable. Since there is need to improve the knowledge base of planners in order to cope with demands, skill development programmes such as harnessing the opportunities in Geographic Information System (G.I.S) and Land Information System (L.I.S.) designed to improve the competence of planners should be part of the strategy.
Purposeful Training in Computer Aided Design and G.I.S.
Trainees in urban planning must offer computer science and its practical application to their course in addition to instruction in G.I.S. The contents of Land Information System (L.I.S.) and Urban Information System (U.I.S.) are specific areas that the urban planner must be conversant with. As a strategy the N.I.T.P. must include this in the course curriculum of its M.C.P.D.P. on a continuous basis. It is important to mention that the Town Planners Registration Council (TOPREC) in its 2004 MCPDP edition had a three-day development programme on various aspects of G.I.S. The Lagos State chapter of the NITP also had a workshop for its members in 2005. This is expected to be followed up by more practical training.

Advocacy
An important branch of planning is in the area of advocacy on behalf of people that are injuriously affected by planning decision, non-decision or wrong decisions. With the expected explosive development in the face of many developers, Planners are, therefore, expected to be more mobile, jettison armchair planning and be involved in Advocacy. Furthermore, in this decade it is envisaged that pressure groups, human faced groups such as NGO's consisting of planners with the sole objective of championing the course of the people will be a veritable strategy.

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SUSTAINABLE DEVELOPMENT AT GRASSROOTS LEVEL IN NIGERIA

BY

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ABSTRACT

Taking cognizance of the prevailing poor condition of physical and economic developments at the grass roots level, discussion of this topic is considered timely and appropriate at this forum. The intention is to examine the nature of physical development at the grass roots level and its consequence on the socio-economic development in Nigeria. It is also to identify and examine the roles of every stakeholder in physical and economic developments at the grass root level. The rationale for this study is hinged on the fact that meaningful physical development is a key to better health, stable economy and improved living standards. It further recognizes the fact that physical development at grass root level is an indispensable means of developing a lasting, virile and reliable economic development in Nigeria as a whole. However, to effectively utilize the key and reap its enumerated benefits, every stakeholder in the grass root development must have a change of attitude and be ready to commit every available resource thereto. It is therefore desirable that sustainable development at the grass roots level is pursued with vigor and sincerity of purpose.

KEYWORDS: Sustainable; Development and Grass Roots Level.

INTRODUCTION

Prior to the discovery of petroleum, Nigerian remained a predominantly agricultural country. Since the advent of oil boom in the early 70s crude petroleum has become the dominant source of export earnings averaging about 90 per cent of the total earnings of the Federal Government. Oil has also become the major source of government revenue averaging about 75 per cent of total government revenue since the 1970s. According to Poloamina (1996) petroleum led export earnings experienced about 400 percent increase between 1962 and 1971 and quadrupled by 1974, almost trembling itself again by 1980. In a similar vein, federally collected revenue jumped to about 600 per cent between 1962 and 1971, nearly quadrupling by 1974 and more than trembling itself by 1980. In this regard, agricultural production was neglected, pyramids of groundnuts vanished, cocoa production lessened while planting of food crops such as yams, maize, rice, onion etc. becomes a thing of the past. The situation is further aggravated by mass rural-urban migration. Economic activities therefore were shifted from agriculture to construction, commerce and services with the government becoming the dominant gender in the economy. At a stage, government expenditure escalated beyond proportion and fiscal deficits mounted drastically. Thus money supply increased out of proportion with a declining economic trend. These fuel inflationary processes leading to serious unemployment problems, low-income level, societal calamities and break down of welfare services.
Consequently the ensued economic crisis tagged Nigeria as one of the poorest, criminal breading and heavily indebted nations of the world. The introduction of the Structural Adjustment Programme (SAP) in 1986 and other socio-economic measures aimed at addressing the issue are to no avail.

The scenario is that the grass roots people the peasant farmers, the urban poor, rural dwellers and common people of this great country are living a miserable life. This is occasioned by stress, uncertainty and insecurity to lives and property. In view of the ineffectiveness of government at all levels virtually all social infrastructure and services are grounded. Many access roads have been devastated by lack of maintenance which has given opportunity for erosion to wash away road surface resulting into gullies in various parts of the grass roots communities.

The poor social and economic conditions have serious negative effect on both the health exposed to poor sanitary condition and live without safe water. They suffer from both indoor and outdoor pollution. Due to incessant shortage of kerosene and cooking gas many people are resulting to the use of firewood for cooking and further exposed to industrial pollution of different types. Crimes of all dimensions become the order of the day and poverty is clearly shown on the faces of many people while only few remain controllers of the nation's abundant resources.

According to Olanipekun (2001), there are so many definitions of local government as there are commentators on the topic. More often than not, it has become a function of the purpose for which it is created. Ayo (1986) defined it as a non-sovereign institution operating in a restricted geographical area, whose council members are elected or selected but which enjoys some level of autonomy.

According to Bryon (1970), Local government is any government that covers an area smaller than a state. In the opinion of Emil (1975), it is a political subdivision of a nation or state, if in a federal system, which is constituted by law and have substantial control of local affairs. The governing body of such an entity is elected or otherwise locally selected.

The 1999 constitution of the Federal Republic of Nigeria prescribes that a local government council should cover a clearly defined area. In defining such area, regard must be paid to

(i) The common interest of the community in the area.
(ii) Traditional association of the community, and
(iii) Administrative convenience.

This is a follow-up from the national guidelines set for the reform of Local government in Nigeria in 1976. It states that “government at local level exercised through representative councils established by law to exercise specific power within defined area”.

The guidelines also prescribed a minimum of 150,000 and optimum of 800,000 populations for each local government. Local government as an entity and level of administration in Nigeria is a fall-out from the “guidelines for local government reform of 1976” and official
pronouncement of Brigadier Sheu Yar'adua that “The Federal Military government has therefore decided to recognize local government as a third-tier of government activity in the nation. Local government should do precisely what the word” government” implies i.e. governing at grass roots or local level”.

FUNCTIONS OF A LOCAL GOVERNMENT COUNCIL
The constitution of the Federal Republic of Nigeria of 1999 mandates every local government council in Nigeria to perform certain functions (Fourth schedule). By this constitutional provision, Olanipekun (2001) submitted that the Local governments are mandated to provide some goods and services that for a number of reasons, the private sector cannot provide, or cannot provide at minimal costs and at competitive profitable prices because of the element of social value attached to such goods and services. The main functions of a local government council are of two groups, which can be referred to as exclusive and concurrent functions as follows:

EXCLUSIVE FUNCTIONS
The main functions of a local government council are as follows:
(a) The consideration and the making of recommendations to a State commission on economic planning or any similar body:
   (i) The economic development of the State, particularly in so far as the areas of authority of the council and of the State that are affected, and
   (ii) Proposals made by the said commission or body:
(b) Collection of rates, radio and television licenses;
(c) Establishment and maintenance or cemeteries, burial grounds and homes for the destitute or infirm;
(d) Licensing of bicycles, trucks (other than mechanically propelled trucks), canoes, wheel barrows and carts;
(e) Establishment, maintenance and regulation of slaughter houses, slaughter slabs, markets, motor parks and public conveniences;
(f) Construction and maintenance of roads, streets, street lightening, drains and other public highways, parks, gardens open spaces, or such public facilities as may be prescribed from time to time by the House of Assembly of a state;
(g) Naming of roads and streets and numbering of houses;
(h) Provision and maintenance of public conveniences, sewage and refuse disposal;
(i) Registration of all births, death and marriages
(j) Assessment of privately owned houses or tenements for the purpose of levying such rates as may be prescribed by the House of Assembly of a State; and
(k) Control and regulatory functions
   (i) Out-door advertising and hoarding
   (ii) Movement and keeping of pets of all description
   (iii) Shops and kiosks
   (iv) Restaurants, bakeries and other places for sale of food to the public
   (v) Laundries and
   (vi) Licensing, regulation and control of the sale of liquor.

CONCURRENT FUNCTIONS
The functions of local government council
shall include participation of such council in the Government of a State as respects the following matters.

(a) The provision and maintenance of primary, adult and vocational education
(b) The development of agriculture and natural resources, other than the exploitation of minerals
(c) The provision and maintenance of health services and
(d) Such other functions as may be conferred on a local government council by the House of Assembly of the State.

OTHERS
Some other functions being performed by Local government but which are not specifically stated in the fourth schedule are:
The provision and running of orphanage homes, provision and maintenance of abattoirs, control of draining and use of loudspeakers in the open spaces. Control of the use of grazing grounds, control of traffic and parking, provision of public libraries and reading rooms, provision of scholarships and bursaries, dissemination of information and public enlightenment.
In addition, distribution of responsibilities among the three-tiers of government is as shown in the table below:-

Table 3.1 Constitutional Responsibilities of the Governments

<table>
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<tr>
<th>FEDERAL GOVERNMENT</th>
<th>STATE GOVERNMENT</th>
<th>LOCAL GOVERNMENT</th>
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<tbody>
<tr>
<td>1. Defence and Security</td>
<td>Secondary and higher education</td>
<td>Sewage disposal</td>
</tr>
<tr>
<td>2. External Affairs</td>
<td>Health</td>
<td>Maintenance of feeder roads</td>
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<tr>
<td>3. Interstate and International Roads</td>
<td>Water supply</td>
<td>Primary education</td>
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<td>4. Port Facilities</td>
<td>Housing</td>
<td>Market stalls</td>
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<td>5. Railways</td>
<td>Light industries</td>
<td>Primary health centres</td>
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<tr>
<td>6. Airport Facilities Aviation</td>
<td>Agriculture</td>
<td>Crafts and small scale industries</td>
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<tr>
<td>7. Power Supplies</td>
<td>Light infrastructure</td>
<td>Collection of property tax</td>
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<tr>
<td>8. Communications</td>
<td>Town and country planning</td>
<td>Street naming</td>
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<td>9. Heavy Industries</td>
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<td>10. Higher Education</td>
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Source: Extract from 1999 Constitution.

SOCIAL FACILITIES AT GRASS ROOTS LEVEL

HOUSING
Instability, mis-management of resources, wrong priority and other vices have resulted into poor housing programmes for the masses. Consequently, housing in both urban and rural environments is characterized with the twin problems of quantitative and qualitative deficiencies. Most houses are not provided with essential utilities and services. There are houses with mud walls and thatch roofs. Many of the walls are not plastered and roofs are without ceiling. Housing environment are fast degenerating into slum areas like Makoko and Ajegunle in Lagos, Ayeye, Foko and Oke Oluokun in Ibadan etc.

HEALTH
Primary health care is the constitutional responsibility of the grass roots administration in Nigeria. every Local government therefore has established health department, which is in charge of maternity, and primary health centres, abattoirs, refuse disposal and general sanitation at the grass roots level.

However, the general picture is that of inadequacy of sanitation facilities in both
urban and rural areas. Public health facilities are either not available or where available, they are poorly maintained. Pit latrines and open spaces are used to dispose human wastes. Hospitals and health centres where available suffer for lack of qualified staff, shortage of drugs and medical equipment. The resultant effect is sporadic eruption of diseases like dysentery, diarrhea, typhoid, cholera, guinea-worm effection and so on. The most susceptible communities are the core areas of urban centres and rural areas. Tomori (1997) observed that the sanitary condition in most of the cities is highly deplorable as a result of planlessness of our environment and lack of respect for physical planning.

WATER
The grass roots people obtain water for domestic and commercial uses from different sources like shallow wells, brooks and streams. In-house pipe borne water connection is virtually lacking in the rural areas while the level of availability varies between 65 per cent and 69 percent in urban centres. Egunjobi (1999). The proportion of those that have water most of the time varies between 22 percent and 31 percent (Onibokun 1989). Water is always not available to flush the water closet (W.Cs).

EDUCATION
Section 2 (a) of the fourth schedule of the constitution states that the functions of a local government shall include the provision and maintenance of primary, adult and vocational education. In view of the hindrances of the local government administration in the country, education at this level is in shambles. Education facilities are substandard and inadequate. For instance, classrooms are not only inadequate they are also in bad state of repairs. In many primary school, classroom floors are full of potholes, walls are cracked, windows and doors are either not in place nor damaged, roofs are mostly without ceiling and are either leaking or blown-off by rainstorm.

ELECTRICITY
The position of electricity supply to the grass roots people is not different from that of other basic facilities. The supply is erratic and epileptic. Electricity supply in both urban and rural areas is nothing to write home about. While the rural areas mostly have no electricity supply, the urban centres could most often be without power supply for days, weeks and even months in extreme cases.

ROADS
Section 1 (f) of the fourth schedule of the Nigeria constitution provides that local government council is responsible for the construction and maintenance of roads, streets, drains and other public high ways. The operating arrangement in the country now is that the responsibilities for the constitution and maintenance of category 'A' (federal Highways), category 'B' (state of secondary roads) and category 'C' (Access roads) are shared between Federal, State and Local governments respectively. Unfortunately, the access roads that are required to provide links between residential houses, neighbourhoods, villages and various land uses are characterized with many dangerous and death traps such as pot holes, narrow or damaged bridges and sharp corners. Connectivity by road is so poor to the extent that farmers result to the use of heads or bicycles to transport their farm produce to the markets. Intra-connectivity within cities is not only inadequate, it has remained inefficient dangerous and expensive over the years Egunjobi (1999) opined that what exists in our cities are a litany of inconvenience and frustration as evidenced in road congestion.
pollution, accidents- all of which are fatal to the quality of life in cities. It has also been observed that Ibadan provides another example of the chaotic transport situation where an estimated 50 percent of houses in the traditional core is not accessible to vehicular traffic. Yet half of the limited available road space is illegally taken over by traders.

**CONCEPT OF SUSTAINABLE DEVELOPMENT**

The socio-economic hardship being experienced by the grass roots people, and the trend environmental degradation have informed the well-meaning individuals and international organizations of urgent attention. According to the World Commission on Environment and Development (1987), sustainable development is the observable growth which meets the needs of the present without compromising the ability of future generations to meet their own needs. Fajingbesi, Awopegba and Edebor (1999) submit that it is more than mere growth in economic aggregates. It also includes effective systems of environmental impact accountability. Thus, it involves “the polluter and consumer-pay principle” which seeks to compel a greater consideration for therein in the context of economic production. Environmental concern is identified with economic development policies and strategies, which have created the very problems environmentalists attempt to deal with (Morvaridi, 1996). Goodland (1993) is of the view that sustainability is the maintenance of capital of which there are three. They are “human made capital” such as houses, road, buildings and so on which make up the built environment, “human capital” comprising people's capability and knowledge and “natural capital”, that is natural resources. Caldwell, (1995) also submits that environmentally sustainable development encompasses all the three forms of capital and guarantees the survival. For the survival of the three types of capital emphasis can be laid on three other elements which are important to the sustainable development at the grass roots level. As earlier mentioned, the three elements are: **environmental conservation, socio-economic growth** and community participation.

(a) Environmental Conservation:

An important aspect of sustainable development is the concern it has against environmental degradation. As the environmental is the geographical location in which we live, work and produce, sustainable development serves as a means of protecting the environment with a view to increasing economic output. The relationship between economic development and quality and quantity of available resources in any given locality is a determinant of the level of environmental degradation. In general, degradation is understood as a decline in resource quality and/or quantity in the structure of the resources in an environment. In June 1992 in Rio de Janeiro, Brazil, the United Nations Conference on Environment and Development (UNCED) examined international issues in environment and development. It was observed that not only does the environment suffer from indiscriminate growth, but that a degraded environment can undermine the foundations for growth. The emphasis was not on mere growth but what type of growth. Sustainable development therefore is regarded as a means to achieving resource conservation and environmental integrity. The interest in sustainable development at the grass roots level was fuelled by the environmental implications of human activities. There is much increased concern about damage arising
from human activities to the natural systems, such as environmental damage done through farming, industrial production, commercial activities and high consumption life styles.

Environmental conservation is highly desirable in Nigeria in general and particularly at the grass roots level in view of the following environmental problems:

i. Unsanitary conditions in many parts of the country-rural and urban centres alike.
   ii. Serve environmental degradation caused by industrial activities in the urban centres like Ibadan, Lagos, Port Harcourt, Kano and others.
   iii. Agricultural degradation, from traditional and modern techniques.
   iv. Deforestation.
   v. Soil erosion and desertification.
   vi. The environmental effects of mining and oil production.

(b) Socio-economic growth

Another aspect of sustainable development apart from controlling or limiting the harmful impact of human activities on the environment is the concentration on development goals. In this regard, many environmentalists emphasised the need for economic growth within many nations and regions such as developing countries like Nigeria to provide the economic base to allow needs especially of the poor people (grass roots people) to be met. It has further been noted that social sustainability is a pre-condition for sustainable development. Effort geared toward meeting both economic and social goals in the society obviously have to be sustainable since human life and well-being depend on them. What should constitute the subject of growth include that stock of physical, biological and social resources which are available to the grass roots people for the satisfaction of their daily needs and maintenance of the quality of their lives. The physical resources consist of air, earth surface, topography, minerals, climate, soil and so and so on; the biological resources include plants and animals (including man). While social resources comprise the family group, organisation of society, culture including beliefs and attitudes and structure of urbanization, politics, government, law, judicial systems as well as social services. Having identified the three categories of resources, issues concerning sustainable development can then be applied to the ways of managing the resources.

(c) Community participation

Community participation has been defined differently by many scholars. Some used the term to mean active participation in political decision-making while others are of the view that participation may be meaningless unless the people involved have significant control over the decisions concerning the organization to which the belong. Another school of thought viewed community participation as “an active process by which beneficiaries influence the direction and execution of a development project with a view to enhancing their well being in terms of income, personal growth, self reliance or other values they cherish”.

Types of participation

a. Three types of local or community participation have been identified, namely:
   i. A case where there is beneficiary involvement in the planning and implementation of externally initiated projects by any tiers of the government such as primary schools, health centres, road projects, water supply electricity projects and market development.
   ii. It is a situation whereby external help is
sought to strengthen or create local organizations like establishment of Landlords and Tenants Association, Community Development Association, Trade Unions and so on for the general development of the community and welfare of those members involved.

iii. It is a situation whereby there are spontaneous activities of local associations towards some goals without external influence or assistance.

b. Levels of participation.
   i. The first level of participation is at the conceptualization stage during which development projects are conceived. Problems areas are identified and appropriate solution are jointly formulated with beneficiaries participation. Future events and outcome will not look foreign to the stakeholders during implementation stage.

   ii. Decision making level is when a clear direction is agreed upon and some particular line of actions is put in place. There is a clear focus and a target goal is set at this stage.

   iii. Participation is also at the planning stage. This is when the objective for the realization of the target goal are set. Action is planned for and available resources are allocated to every stage of the development.

   iv. Participation at the implementation stage is highly desirable. This is a collective stage when economic, social, political, cultural and other resources are pooled together towards the actualization of the desired goal the various previous efforts are now transformed into physical structure.

   v. The final level is the participation at the evaluation stage. This is when the outcomes are assessed for the justification of all inputs at the previous stages.

c. The Benefits:
   i. Shared project costs: It provides a situation whereby the beneficiaries are asked to contribute resources such as money, labour or sometimes goods during project implementation.

   ii. It increases project efficiency because of timely and beneficiary inputs at all stages.

   iii. It brings about project effectiveness because of the awareness created in the beneficiaries through their participation. The project will be regarded by everybody as his own unlike anybody's project which is nobody's project.

   iv. It creates confidence of recognition in the beneficiaries. They are relieved of the burdens of inferiority complex as they now become a force to be recorded with in the society.

THE STAKEHOLDERS IN SUSTAINABLE DEVELOPMENT

The stakeholders in sustainable development can be mentioned as below:

I. The Governments: These are the governments at all the three levels-Federal, State and Local governments. They are responsible as follows:
   - Initiate development projects
   - Fund development projects
   - Promulgated and enforcing laws and regulations
   - Establish agencies for various projects
   - Public enlightenment campaign.

ii. Government Agencies, Parastatals and Ministries.
   These include:
      Power Holding Company of Nigeria;
Water Corporation; Housing Corporation; Ministries of Education; Health, Land and Survey and Finance; Planning Authority and many others.

They are responsible for;
- Initiating policies and programmes for development projects
- Development and maintain socio-economic facilities and amenities
- Distribution of the facilities
- Collection of levies and rates.

iii. Research /Higher Institutions of Learning

They are responsible for:
- Conducting and disseminating research findings on various development projects
- Application of research findings
- Educate the government and members of the society on the outcome of their findings.

iv. Non-Governmental Organisation, (NGOs)

They are responsible for:
- Effective mobilization of communities on development projects
- Providing technical and financial assistance for development projects
- Educate both the government and members of the public on their civic responsibilities.

v. International Organisations e.g World Bank; World Health Organisation, (WHO); UNESCO, UNICEF,ETC. They are responsible for:
- Capacity building
- Provide financial and technical assistance
- Conducting and disseminating research works on development projects and eradication of social problems
- Undertake enlightenment campaign

vi. Private Sector: Responsible for:
- Capacity building
- Undertake consultancy services on various development projects
- Financing some development projects

vii. Communities:
- Provision and maintenance of private projects/self-help projects
- Contribution to the development maintenance of infrastructural facilities
- Mobilizations of communities for necessary actions, civic responsibilities and community development.

GUIDING PRINCIPLES

The major goal of sustainable development is to satisfy human needs for a better life. While doing this for the present generation it must be without compromising the ability of future generations to meet their own needs. It thus requires a rational exploitation of productive resources, effective utilization and prudent management of the resources. This is because imbalances in growth and devastation of the environment disrupt the expected harmony between people and resources. The guiding principles are of three categories as follows:

(i) Standard performance principle: This is on the part of government officials and political office holders.

(ii) Polluter-pays principle: This is in respect of those extracting and utilizing resources who may likely pollute and make the environment unsafe for the populace e.g Industrialists; oil companies etc.

(iii) Consumer-pays principle: This relates to individuals beneficiaries of the development projects. They include consumers of electricity and water, traders, transporters and those benefiting directly or indirectly from public facilities. They must pay
according to their level of consumption.

**CONSTRAINTS OF EFFECTIVE SUSTAINABLE DEVELOPMENT.**
The goals of sustainable development are laudable but are beset with a number of weaknesses especially in developing countries like Nigeria. These include:

**Government Ineptitude and Inertia:** Governments in Nigeria show no tendency to establish a priority and always fail to set performance target for grassroots development. There has been no clear and specific targets set for infrastructure development at the grassroots level. Where objectives are indicated, the modalities for implementing the programmes are poorly formulated.

**Poor legal basis:** Every relevant legislation in the country constitutes in most cases a mitigating factor to the effective implementation of development programmes. The weakness of the existing legislation emanates from the inability to adjust the laws to meet the changing conditions and dynamics of the development projects.

**Weak Institutional Framework:** The need for effective institutional framework cannot be over emphasised. In Nigeria apart from the fact that such institutions are not adequate where they exist, they are under-nourished and largely neglected. Besides human resource problem, other problems such as gross inadequacy of materials calculators, papers, pen computer, motor vehicles, furniture and so on engender grassroots development.

**Multiplicity of Agencies:** There are too many public of agencies which are responsible for the management functions in Nigeria.

Egunjobi and Oladoja (1987) in one of their studies of Ibadan found that 16 different agencies were responsible for the management functions of the city. There are duplications and conflicts of interests. The entire citizens are at the risk of dangers, inconveniences and inefficiencies.

**No national programmes** to mobilize the public appropriately for understanding what grass root development entails and for its definite establishment. No clear modality for introducing grass root development.

**The use of quota system**, ethnic factors, nepotism, rather than merit is highly prevalent in the country for the selection of development areas not strictly based on degree of need. The system of selection and execution of projects are faulty and lacking objectivity. Several socio-cultural and political factors came into play in the process.

**Funding** for executing development projects is grossly inadequate and sometimes misdirected. Corruption and embezzlement of public fund have become the order of the day among politicians and public officials.

**Ineffective utilization and management** of available manpower constitute another major constraint to grassroot development other problems on manpower development are lack of versatility of training, poor conditions of service, lack in incentives, nepotism, corruption and discriminatory practices in the recruitment and selection of employees.

**Un-coordinated Activities by Public Agencies:** It is not uncommon to see a Planning Authority giving planning approval for a building and a federal or state Agency marking the same building for demolition. Also, a well paved road by one agency may be
cut across few weeks later by the Water Corporation for the purpose of laying water pipes.

**SUGGESTIONS**

In view of the various submissions made above, it is hereby suggested as follows among others:

(i) Government policies should be restructured in a way that will bring about effective grassroots development. All resources and activities must be harnessed together towards a chosen path that will properly relate to human needs.

(ii) It has been observed that the level of property is rising at alarming rate among the grass-root people. They are unemployed, under-employed, live in squalor, and lack access to clean water, clean environment, adequate calories health care delivery and good education for their children. There is the need more urgently than before for the diversification of the nation's resource base in ways that will alleviate poverty and ecological stress among the people. Prevailing high level of poverty no doubt is responsible for the various crimes in the society. It must be noted that “the rich are awake because the poor are hungry”. Attention should be focused on human development through the eradication of poverty, the creation of employment, access to basic services, greater equity among the populace, democratic procedures in decision-making, respect for human rights, gender equality, environmental conservation and protection and so on.

(iii) There should be strategic planning in which the grassroots development agenda are clearly defined to indicate attainable objectives, priorities and time-table for action.

(iv) The various laws must be reviewed to adequately and effectivley curb corruption and crimes in the society. Everybody must be ready to do this country a great honour by obeying the laws of the land. There should be no sacred cows among the citizens or government officials.

(v) Grassroots administrators should look inward for fund to execute development projects. The immediate environment must be taxed for survival. The foundation for sustainable growth must be built on available human and natural resources found within a particular locality. There should be less dependent on depletable oil resources, which is highly subjective to external controls-political, economic and human forces, for the desired growth. There is need to strictly imbibe the “consumer-pay principle”. However, this calls for efficient provision, distribution and maintenance of services like water, electricity, transportation, education, health and the likes. The consumers must be made to satisfactorily enjoy what they are expected to pay for.

**SUMMARY AND CONCLUSION**

The concept of sustainable development has long become an internation issue. This is borne out of the concern for the environment through global threats and alarming rate at which poverty level increases. The United Nations has established an Environmental Programme (UNEP) and an Intergovernmental Panel on Climate Change. The most significant development has been
the United Nations Conference on Environment and Development (UNCED, Rio de Janeiro, Brazil, June 1992). The United Nations launched the concept of sustainable development in the mid 1980s. Dealing with the problem of poverty has been seen as a means to protecting the environment and increasing economic output.

Sustainable development therefore is a means to achieving resource conservation and environmental integrity as well as a mean of ensuring some accountability for social justice. In view of the suffering, stress and poverty which are ranging high in Nigeria, it is high time the grassroots people have a taste of the on going global crusade. All the identified natural and man-made bottle necks to sustainable development should be wiped out. All stakeholders should be part of the crusade for sustainable able development at the grassroots level.

Sincere and adequate representation of all the parties is essential for sustainable development. A situation whereby everybody is involved in policy design, project design and implementation in a corrupt free society would greatly enhance sustainable development. This is the path that Nigerian must tread.

REFERENCE


ECONOMICS OF SOLID WASTE MANAGEMENT IN LAGOS STATE

By

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ABSTRACT
Solid waste production has grown beyond 16 million tonnes per annum in Lagos State in direct response to rising consumerism, technology, and population growth. Human activities produce an endless stream of solid, liquid and gaseous wastes that enter the receiving media land, air, and water. Disutilities can be recycled, reused, or reclaimed in order to reduce the wastes. A sample survey of 50 manufacturing firms and activities of 100 randomly selected scavengers using the Chi-square Goodness-of-Fit test reveal that, of the solid wastes generated in Lagos State, less than 20% is recovered. There is also no market for components separation. It is recommended that the use of recycling credits, product charge and tax concessions may offer incentive effect that will stimulate waste generators to seek out least-cost combination of disposal, recycling and reuse.

Introduction
Solid waste refers to “any refuse, certain sludges and other discarded materials, including solid and semi-solid materials resulting from industrial, commercial, mining, agricultural operations and domestic activities for which there is no economic demand and which must be disposed off” (Porteous, 1998, p. 506)

In the past, solid waste management (SWM) primarily included collection, land disposal, and incineration of household waste. Industrial waste disposal did not receive much attention then. Environmental awareness by the general public increased over time because of advancements in environmental science and technology and interest in pollution-related health problems. Attention was also drawn toward the fact that Earth's material and energy resources are finite. It became apparent that landfilling and incineration have significant environmental impacts, and are not enough to deal with the huge volumes of solid waste generated by communities and industries. All these issues and the emergence of the sustainable development concept (WCED, 1987) helped to foster the idea of recycling as a way to reduce waste volume. Subsequently, the concept of integrated solid waste management (ISWM) emerged. The goal of ISWM is the recovery of more valuable products from that waste with the use of less energy and a more positive environmental impact (Tchobanoglous et al., 1993). The practice of resource recovery (recycle, reuse, and reduction) otherwise known as the 3Rs fits very well within the sustainable development concept. Although the concept of integrated waste management can be applied to both hazardous and non-hazardous wastes, this study is restricted to municipal and industrial solid wastes.

Landfill principal end products of anaerobic decomposition are partially stabilized organic materials, intermediate volatile organic acids and various gases including Carbon (IV)
Oxide (CO\textsubscript{2}) Methane (CH\textsubscript{4}) Nitrogen (N) Hydrogen and Hydrogen Sulfide (H\textsubscript{2}) Other gases include Ammonia (NH\textsubscript{3}) Carbon Monoxide (CO) and Oxygen (O\textsubscript{2}) Landfill gas (LFG) particularly CH\textsubscript{4}, emitted from the decomposition of the biodegradable organic materials can be collected and used to recover energy, converted to cooking gas, or to drive turbine engines. The energy recovered from LFG displaces pollution associated with the generation of electricity and/or heat from conventional energy sources (Tchobanoglous et al., 1993) Materials that can be recovered from solid wastes include paper, cardboard, plastics, glass, ferrous metal, aluminium and other residual non-ferrous materials. These materials are of economic value to warrant their separation by a variety of techniques developed to accomplish this for each component. Combustible organic materials, such as fossils, textiles, and paper, can be converted into intermediate products and ultimately to energy by incineration or direct combustion in power boilers to produce steam; by pyrolysis to produce liquid fuels; by biodigestion with or without sludge to generate CH\textsubscript{4}. Spent lubrication oil may be recovered as Refuse Derived Fuels (RDF) and reused for industrial activities. Recycling of 'pure water' HDPE bags into reusable materials for the plastic industry.

Component separation is a necessary operation in resource recovery from solid wastes. Materials like newspaper; aluminum, glass, cardboard and high quality paper, metals and wood are hand sorted. Combustible materials are air-separated by shredding. Ferrous materials by magnetic separation. Optical sorting and electrostatic separation for glass, linear induction separation of aluminum and non-ferrous metals. Energy can further be derived by direct use of heat produced by burning and by conversion of wastes to fuel oil gas or pellets that can be stored and used locally or transported to distant energy markets to generate revenue. Incineration with heat recovery produces energy in form of steam for turbine engines. If organic materials are separated from municipal solid wastes and are subjected to aerobic bacteria decomposition, the end product remaining after dissimilatory and assimilatory bacterial activity is called Compost or Humus and the entire process including separation and bacterial conversion of the organic solid waste is known as Composting. The humus arising therefrom is a source of valuable soil conditioner, manure or fertilizer. The practice can reduce waste quantities deposited for landfill to about 30% while the biological activity of remaining waste will produce lesser quantities of CH\textsubscript{4} gas and leachate.

Mechanical volume reduction by compaction and boiling; mechanical size reduction by pulverization (i.e. grinding and milling) shredding, and hydro-pulping improve the efficiency of solid waste management systems. For waste paper to be reused, it should be baled to reduce transportation and storage volume requirements as well as reducing haulage or freight costs to disposal sites. Shredding is also handy to improve the efficiency of disposal sites.

**Study Objectives and Significance**

The objectives of study are to determine the level of recycling of materials, reuse and recovery processes; to determine whether there is market for separation of components; and to suggest best economic practices based on findings. The significance of the study is to encourage resource recovery from volume of solid waste generated before final disposal, with positive
implications for corresponding air and water pollution reduction and effective waste management system.

**Hypotheses**

**Hypothesis 1:**
Level of 3Rs observed is not significantly different from expected proportions.

\[ H_0: \chi^2 = 0 \]

*(Level of 3Rs meet minimum standard)*

**Hypothesis 2:**
There is no significant difference in the observed and expected market for component separation

**Table 1.0 Composition of Solid Wastes in Lagos State**

<table>
<thead>
<tr>
<th>Component</th>
<th>Domestic waste, Odunaiya (2006) %</th>
<th>Urban Solid Waste in LDCs (World Bank, 1990) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable Matter, Putrescibles</td>
<td>68</td>
<td>60</td>
</tr>
<tr>
<td>Paper</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Textiles</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Metal</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Plastics (Hard, Film)</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Glass</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Grits</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Miscellaneous, Inerts</td>
<td>-</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Saka (1995) as quoted by Ibiyemi (2006) stated that the average waste generation rate of 0.4 – 0.5kg per capita per day was recorded in Lagos, and that between 1988 and 1994, a total of 16,418,661 tonnes of domestic wastes was collected and disposed by Lagos State Waste Management Authority (LAWMA) while over 850,000 tonnes of solid wastes were disposed off annually within Metropolitan Lagos alone. The solid waste management system in Lagos is inefficient due to lack of personnel, funds and equipment, and planless city structure (GOPA, 1997). The other problem is lack of satisfactory provision for final disposal sites. The proximate and ultimate chemical analyses carried out by Vesiland and Pierce (1982) showed that municipal solid wastes contains moisture (15% – 35%) volatile matter (50% – 60%) fixed carbon (3-9%) Non-combustibles (15% – 25%) Hydrogen (2% – 5%) Nitrogen (10%-25%) and Sulfur (0.2%-1.0%) and these assertions were supported by Odunaiya (2006) when the domestic wastes in Lagos was stated to compose of 68% vegetable matter, 9% paper, 4% textile, 3% metal, 2% hard plastics, 5%
film plastics, 4% glass and 4% grit. Consequent upon the waste composition, the organic biodegradable components begin to undergo bacterial decomposition in waste dumpsites under aerobic conditions deriving its source of microorganisms from surrounding soil materials. The overall rate at which this occurs depends on the wastes' characteristics and its moisture content. Usually, after a 5-day biochemical oxygen demand (BOD), it passes from the initial acetogenic phase to the final stabilized or methanogenic phase. During the 5-day BOD, Total Organic Compounds (TOC), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS) Ammonia-Nitrogen (NH₃N), Hydrogen ion index (pH), and Total Hardness (TH) are at their highest levels (Tchobanoglous et al., 1993).

**Impact of SWM on Quality of Life and Property Values**

<table>
<thead>
<tr>
<th>Source (Waste Disposal method)</th>
<th>Emission(s)</th>
<th>Pathway(s)</th>
<th>Receptor(s)</th>
<th>Potential Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landfill/Waste Disposal Site</td>
<td>Dust, Odour, micro-organisms, Litter, landfill gas (LFG) - CH₄, CO₂ and numerous trace compounds</td>
<td>Air emissions of materials directly from landfill during tipping, compacting, covering and storage activities. Emissions to air, of LFG combustion</td>
<td>Nearby sensitive receptors in the vicinity of the landfill site; nearby sensitive habitats</td>
<td>Potential for exposure to a variety of harmful materials which have been investigated with connection with birth defects, asthma, respiratory diseases and cancer</td>
</tr>
<tr>
<td></td>
<td>Exhast gases from combustion of LFG including Co₂, Co, NOX, So₂ and other trace compounds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leachate containing salts, heavy metals, biodegradable and persistent organics to ground water, surface water and sewer</td>
<td>Water-leaching of materials into ground water and surface waters due to fugitive escapes of leachate emissions of treated and untreated leachate via permitted routes</td>
<td>Nearby sensitive receptors, groundwater users and surface water users, nearby sensitive habitats</td>
<td>Potential for contamination of ground and surface water with metals, organic compounds, bioaccumulation of toxic materials</td>
</tr>
<tr>
<td>Metal (Zinc, Lead, Copper, arsenic and various organic compounds)</td>
<td>Land-contamination of land during post operative phase</td>
<td></td>
<td>Nearby sensitive receptors and users of post operative sites</td>
<td>Potential for contamination of flora and fauna in contact with contaminated land, and possible</td>
</tr>
<tr>
<td>Thermal Treatment (including Incineration)</td>
<td>Emissions of SO₂, NO₂, HCl, HF, VOC, CO, N₂O, dioxins, metals (Zn, Pb, Cu, As), dust, odour, microorganisms</td>
<td>Air emissions from waste during handling and storage operations; emissions of materials during handling of waste ash; emissions of gases and particles from combustion of waste</td>
<td>Nearby sensitive receptors; nearby sensitive habitats; sensitive receptor within the influence radius of the combustion gas plume</td>
<td>Potential for exposure to harmful materials which have been investigated in connection with cancer, asthma, respiratory disease, birth defects</td>
</tr>
<tr>
<td></td>
<td>Exhast gases from combustion of LFG including Co₂, Co, NOX, So₂ and other trace compounds</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: [http://www.defra.gov.uk](http://www.defra.gov.uk)
Thayer, Albers and Rahmatian (1992) employed an hedonic pricing model and found that properties located closer to waste disposal sites (WDS) have lower values. The result is robust with respect to functional form, independent variable selection, and sample size. They also found that the price gradient is discontinuous with more steeply sloped property value decrements suffered by those properties closest to the WDS. Smolen, Moore and Conway (1992) using an hedonic pricing model with residential sales data indicated a strong negative effect of proximity to the WDS, as long as the property is within approximately 6 miles of the site. Reichert, Small and Mohanty (1992) also studied municipal landfills and single-family residence sales within one mile of the WDS, using survey data to gauge resident's perception toward the landfill and found a negative impact associated with the nearby presence of a landfill. Ibiyemi (2006) established a negative correlation between household willingness-to-accept (WTA) and distance to Olusosun WDS, indicating that adverse effects of WDS operations diminished with increasing distance from the WDS.

The Theory of Solid Waste Disposal Economics
Pearce and Turner (1993) set out the relevant theory of waste disposal economics as comprising waste reduction at source up to a point where the benefits of extra source reduction are broadly equal to the costs of extra source reduction; the optimal disposal and recycling through balancing of landfill, incineration and recycling; management of uncollected waste; and the choice of regulatory measures to secure waste reduction and optimal disposal. Pearce and Turner suggested the use of economic instruments, such as: recycling credits (to stimulate increased recycling activity); landfill disposal levy (to reduce the amount of waste being land filled); product charge (e.g. packaging tax, to discourage over-packaging); tax concessions (to stimulate reuse/recycling or other activities); deposit-refund systems (to increase the recycling of selected items such as batteries, or encourage returnable container systems); levy/tax on virgin raw materials (to influence the relative prices of primary and secondary recycled materials); user charges (e.g. household waste charges; to discourage the throwaway ethic and encourage reuse/recycling) as part of a waste management strategy.

Waste Recycling Technologies
Odunaiya (2006) explained that the components of the waste generated in Lagos State require basic recycling equipment such as balers to compact plastics, cardboards, and papers for volume reduction; can-densifiers, to crush aluminium and steel cans; magnetic separators, to remove ferrous materials; wood grinders, for shredding large pieces of woods into chips; and rotary screen for materials separation. “These equipment are largely unavailable” Odunaiya claims (2006, p.14).

Research Methods
50 manufacturing companies (response rate at 88%) and 100 scavengers (response rate at 84%) were sampled randomly using the questionnaire schedule. A semi-structured interview was adopted for Lagos State Waste Management Authority. Respondents were drawn from the higher echelon of the Environmental Units (EUs) of classified light and heavy industries. Respondents from the Environmental Units (EUs) of each of the two classes of industries were asked to indicate the level of resource recovery in relation to the volume of wastes generated. Scavengers were asked to state whether markets for
components separation were available or not. Chi-square goodness of fit was used to analyse the primary data.

Results and Analysis

Table 3.0 Schedule of Responses to Level of 3Rs and Market for Component Separation

<table>
<thead>
<tr>
<th>INDUSTRIES</th>
<th>Class A (Heavy Manufacturing)</th>
<th>Class B (Light Manufacturing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of 3Rs in waste generated</td>
<td>Above 20%</td>
<td>Below 20%</td>
</tr>
<tr>
<td>INDUSTRIES</td>
<td>Class A (Heavy Manufacturing)</td>
<td>Class B (Light Manufacturing)</td>
</tr>
<tr>
<td>Level of 3Rs in waste generated</td>
<td>Above 0.21</td>
<td>Below 0.77</td>
</tr>
<tr>
<td>Availability of Market for component Separation (EUs)</td>
<td>0.14</td>
<td>0.81</td>
</tr>
</tbody>
</table>

SCAVENGERS

| Availability of Market for component Separation |
| A | SA | NA | DK |
| 0.18 | 0.21 | 0.61 | - |

A - Available; SA Somewhat Available; NA - Not Available; DK - Don't Know

Field Survey (2007)

77% and 86% of the respondents from the EUs informed that the level of 3Rs in their respective industries were below 20% of the waste generated by their operations, while 81% and 69% confirmed the non availability of markets for component separation, and 61% of the scavenger-respondents also stated that the markets were not available.

Table 4.0 Chi-square goodness of fit Results for 3Rs and Market for Component Separation

<table>
<thead>
<tr>
<th>Test Statistics (Recycling, Availability Reuse, of market and Reduction for component of materials) separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
</tr>
<tr>
<td>df</td>
</tr>
<tr>
<td>Asymp. Sig</td>
</tr>
<tr>
<td>Alpha</td>
</tr>
<tr>
<td>Ftab</td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected frequencies less than 5.
   The minimum expected cell frequency is 22.0
b. 0 cells (0%) have expected frequencies less than 5.
   The minimum expected cell frequency is 42.0

Field Survey (2007)
If we consider the chi-square results for 3Rs and market for component separation in Table 4.0, the level of recovery processes do not meet the minimum expected, and the absence of market for component separation, are realistic conjectures.

**Summary of Findings**

The recovery markets consist of very few private industries and a network of scavengers who sort needed materials manually from waste dumps to sell to selected industries according to their requirements and specifications. The study reveals that there is no market for their components separation. Also, recycling of materials, reuse and reduction processes are carried out on a scale which is below 20% of the wastes generated.

**Discussion**

Based on $X^2$ distribution, critical value ($X^2_{tab}$) equals $X^2_{n-1}$, where $\alpha = .05$ and degrees of freedom (n-1) is 2 for Level of 3Rs. The observed value ($X^2_{cal}$) is compared in order to take a statistical decision. $X^2_{cal} (17.818) > X^2_{tab} (7.815)$ for $P (.000) < (.05)$ we reject the null hypothesis that the difference between observed and expected frequencies in the level of recycling of materials, reuse and recovery processes is not significant because it is not a realistic conjecture. The alternative hypothesis is accepted by declaring that the level of recycling of materials, reuse and recovery processes do not meet acceptable standard. For decision on market for component separation, $X^2_{cal} (45.762) > X^2_{tab} (5.024)$ for $P (.000) < (.05)$ degree of freedom at 3. The null hypothesis that market for components separation observed is not significantly different from expected proportions is rejected. The alternative hypothesis is accepted by declaring that the difference between the observed and expected proportions is significant, that is, there is no market for components separation.

The results show that the 3Rs are little used to reduce the overall volume of waste generated. The decision to recover waste resources is based on an economic evaluation, and on local considerations. In assessing the economics of material recovery, the materials specification should be critical, since sometimes, it may be possible to separate the various components, there may be no inducement to do so. In this regard LAWMA indicated that there are no economic instruments to induce waste recycling and reuse, and in agreement with Odunaiya (2006) confirmed that there are no modern technologies to do so.

**Implications of the findings**

The implication of the findings is that the volume of waste available for disposal would not be reduced, while also, a considerable quantity of recyclable or reusable materials would be lost. As more quantities of waste is disposed through waste dumping and burning, the risk associated with resultant air and water pollution is expected to rise. It follows that minimum cost benefit analysis will be carried out to justify actions concerning the exploitation of waste management practices, while defining degree of worthwhileness, including the development of future processing benefits, may be jettisoned. The waste system managers may begin to deal directly with the buying industry through the use of brokers, without incentives to stimulate waste generators to seek out the least-cost combination of disposal, recycling and reuse that is available to them.

**Conclusion**

Recycling of secondary raw materials scavenged from waste is traditionally carried out on an informal level in Lagos State,
scavenging groups responding to the requirements of a limited market. Large-scale recovery processes are non-existent in the private sector. LAWMA, the main solid waste management agency in the State, is concerned with onsite handling, collection, transfer and transport, and open site dumping at various sites with little or no regard to recovery of materials. Given an improved level of recycling technologies adaptable to our local environment, overall wastes available for disposal might be reduced to manageable levels. The balance between solid waste resource use and regeneration is not sustainable in Lagos State.

Recommendations

Waste Management Agency should exploit economic means of converting wastes to wealth through proper planning, financing, and researching into locally feasible, inexpensive recovery processes in collaboration with commercial partners. LAWMA should consider recovery from wastes, a waste reduction strategy.

Proper sanitary and engineered landfill sites must be designed and established, upon satisfactory conduct of an Environmental Impact Assessment. Landfill construction should commence before waste is dumped because of the problems associated with basement lining, leachate and landfill gas collection, groundwater protection and fire protection. Prospective landfill site may locate at Epe, some 20-25kilometres east of Olusosun dumpsite.

Research into the recycling of secondary raw materials scavenged from waste should be encouraged to respond to the demands of private markets. Recycling activities proposed include multiple reuse of packaging materials (glass, bottles, aluminum cans etc) recycling of brewery and poultry wastes to animal feed and manure respectively. Old tyres, non recyclable plastic materials (except PVC) are good energy resource, Spent lubrication oil to be reused for industrial activities, such as clinker burning for cement production and steam boiler fuel. Composting of organic wastes by aerobic decomposition is a veritable source of manure, alcohols and protein, and recycling of organic waste to bio-gas.

The use of economic instruments like recycling credits, product charge, and tax concessions may offer continuous incentive effect to waste generators, enabling them seek out the least-cost combination of disposal, recycling and reuse.

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ROAD TRANSPORT MANAGEMENT THROUGH INTELLIGENT TRANSPORT SYSTEM (ITS): A CASE STUDY OF LAGOS METROPOLIS

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ABSTRACT

Traditional Transport Planning is unreliable, inaccurate and unrealized due to increase in Population, Industrialization, Globalization and Car-ownership, which has affected monitoring and decision making in Road Transport Management. Lagos Metropolis with a projected population of 24.4 million by the year 2015 making it the 3rd largest city in the World; is face with the problem of road transport management that has affected trip generation, trip distribution, routing, land use and parking. This paper using desk study and review intend to examine three major highways that link Lagos Mainland with Lagos Island and see how Intelligent Transport System (ITS) can be applied in areas of highways Management, Security system and Surveillance and its benefits.

1.0 INTRODUCTION

Transport means to carry, convey or move people, goods and services from one point to another. According to Obi (2001:1) transport can be defined as that part of economic activities which is concerned with increasing human satisfaction by changing the geographical position of goods and people. Transport is a means for increasing human satisfaction by the movement of goods and passengers, so that inaccessible goods may be moved to these points where otherwise inaccessible services may be enjoyed (Benson and Whitehead, 1975).

Urban road transport is a service with primary function of providing mobility and access to movement of goods and people. According to Hutchison (1974) urban good movement include: goods move between urban areas and external locations; Inter industry goods movements within an urban area and household base goods movement within an urban area, and urban trips include: work trips, school trips, shopping trips, personal business trips and socio-recreational trips. The demand for freight transport are affected by speed, certainty of timing, freedom interruption, avoidance of damage, avoidance loss through pilferage and ancillary services; and demand for passenger transportation are affected by cost, journey time (speed), quality of service and income (Gwilliam and Mackie 1975).

Road Management is the processes and activities involve in the management of road transport operations. It involves how limited road capacity and public transport is managed and it affects involvement of goods and people. Gwilliam and Mackie (1975) defined road transport management as efficient use of existing infrastructure and the theoretical basis for management of existing capacity as being to secure that use of facilities which would exist, if all prices were equal to marginal social cost. Road transport management approaches such as road pricing,
physical traffic restraint, public transport subsidies and so on; cannot be efficient and reliable without the use of information.

Presently, in many cities in developed countries information has been conceived as policy and management tool for both planning and decision making in road transport management through the application of Intelligent Transportation System (ITS). This paper intend to examine traffic flow in three major highways-Third Mainland Bridge, Carter Bridge and Eko Bridge that link Lagos Mainland to Lagos Island in relation to traffic volume, passenger Car Unit and road capacity and see ways through which intelligent Transport System can be applied to road transport management in Lagos metropolis.

CONCEPTUAL FRAMEWORK
Transport system as a concept is an approach which systematically analysis the relationship between components within a whole unit that will make the unit works. According to Goodman and Freund (1968) road transport system can be considered to consist of three basic inter-related sub-systems which include: the travel way and terminal facilities. Three travel ways that link Lagos Mainland with Lagos Island are the Third Mainland Bridge, Carter Bridge and Eko Bridge. Third Mainland Bridge is a three lanes carrying traffic in both direction from Adekunle side of the Mainland to Lagos Island and vice versa and it link up with Carter Bridge at Adeniji Adele side of Third Mainland Bridge. Carter Bridge is a two lanes carrying traffic in both direction from Iddo end of Oyingbo (Mainland) to Lagos Island and vice versa and it link up with Eko Bridge via slip road at Idumota side on Carter Bridge. Eko Bridge is a three lanes carrying traffic in both direction from Costain and Western Avenue end of Lagos Mainland to Lagos Island. The three highways are ply by various classes of vehicles which include Cars, Taxis, Minibuses, Molue or Omnibuses, Staff Buses, Heavy Goods Vehicles (HGV) and Motor Cycles (Okada) on daily basis. Third Mainland Bridge can be link up with Motor Park with vehicles plying Adeniji-Eko route at Adekunle (Beside Texaco Filling Station) and with on-street parking at the opposite side in front of Holy Trinity Church causing traffic congestion during morning and evening peak period. Carter Bridge is associated with parking problems right from Iddo and Oyingbo side when approaching the bridge. Illegal parking by inter-city bus transport operations such as Chisco Transport, C. N. Okoli, E. Ekeson Brothers, Ife Sinachi Transport, G. U. O. Okeke & Son among other; affect the traffic flow. Commercial activities at Iddo Motor Park and various warehouses around Iddo affect traffic flow. At the Lagos end of Carter Bridge on street parking arrangement on the bridge have been turned to market at both side of the bridge and buses plying various routes such as Iyana Ipaja, Ketu-Ojota, Aguda etc. are found of loading on the bridge and this reduce the capacity of the road and result into traffic congestion of vehicle during morning and evening peak periods and this reduce the road capacity and cause traffic congestion.

All the three sub system (roads, vehicles and terminal facilities) of road transport system that link Lagos Mainland with Lagos Island must be coordinated together to achieve high degree of mobility on the side of commuters, passengers, haulage firms transport carrier companies (both own account and third party) and manufacturing companies. This can be achieved through the use of Intelligent Transport System (ITS). According to Oyesiku (2002) Intelligent Transport System (ITS) and Transport Information System
(TIS) influence the travel related decision of individuals through available information, such as departure time, mode of travel, and route choice of destination.

LAGOS METROPOLIS-A MEGA CITY

The population of Lagos rose from about 20,000 in 1850 to 7.71 million in 1990 and 13.4 million in 2000 (UN-HABITAT) and estimated at over 15 million for 2000 (LSM of P & B, 2004). By the year 2015, the population of Lagos Metropolis is projected to be 24.4 million, becoming the third largest city in the World. Mumbai (formerly Bombay) will be second largest at 27.4 million and Tokyo will be the most populous city with 28.7 million inhabitants (George, 2006:92). The UN-HABITAT’S state of the World’s Crisis Report (2006/2007) identified Lagos as the World faster growing mega city. Other cities that are expected to achieve this status are Mumbai and New Delhi (India), Mexico City (Mexico) Sao Paulo (Brazil), New York (USA), Dhaka (Bangladesh) and Jakarta (Indonesia). According to Lagos Mega City Region Report (2006) Lagos mega city region is thus a continuously expanding area comprising for the moment all or part of the 20 local government areas of Lagos State as well as at least four local government areas of Ogun State, notably Ado-Odo/Ota, Ifo, Obafemi-Owode and Sagamu.

TRAFFIC SITUATION IN LAGOS METROPOLIS

Lagos Island and Lagos Mainland are linked together via three major highway bridges which include: Carter Bridge, constructed in 1979, Eko Bridge constructed in late sixties and Third Mainland Bridge opened in 1991 (Odewumi, 1999). Traffic flow on these bridges during morning and afternoon peak periods are always high which lead to traffic congestion especially towards the Island during morning peak period and toward the Mainland during afternoon peak period as a result of urban land use structure of Lagos metropolis with the location of commercial land use on the Island and residential land use on the Mainland. Traffic flow on these three Bridges will be examined in relation to traffic volume, Passenger Car Unit (PCU) and road capacity.

Traffic Volume

Traffic data on the three highways bridges that link Lagos Island with Mainland for period of 12 hours were gathered between 7.00am to 7.00pm. Below are the 12 hours data obtained from the traffic survey carried out by Lagos Metropolitan Area Transport Authority (LAMATA).
Table 2.1.1a: Traffic count on Third Mainland Bridge from Adekunle (Lagos Mainland) to Lagos Island.

**LOCATION: THIRD MAINLAND BRIDGE (FROM ADEKUNLE TO LAGOS ISLAND)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue/Staff</th>
<th>Heavy Goods</th>
<th>Motorcycle</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.00-8.00</td>
<td>1,233</td>
<td>458</td>
<td>560</td>
<td>50</td>
<td>20</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>8.01-9.00</td>
<td>1,506</td>
<td>750</td>
<td>977</td>
<td>96</td>
<td>50</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>9.01-10.00</td>
<td>1,813</td>
<td>705</td>
<td>729</td>
<td>100</td>
<td>90</td>
<td>62</td>
<td>130</td>
</tr>
<tr>
<td>10.01-11.00</td>
<td>2,068</td>
<td>371</td>
<td>525</td>
<td>107</td>
<td>65</td>
<td>75</td>
<td>284</td>
</tr>
<tr>
<td>11.01-12.00</td>
<td>2,250</td>
<td>360</td>
<td>487</td>
<td>84</td>
<td>65</td>
<td>53</td>
<td>202</td>
</tr>
<tr>
<td>12.01-1.00</td>
<td>2,609</td>
<td>382</td>
<td>438</td>
<td>95</td>
<td>125</td>
<td>83</td>
<td>250</td>
</tr>
<tr>
<td>1.01-2.00</td>
<td>2,863</td>
<td>309</td>
<td>588</td>
<td>103</td>
<td>200</td>
<td>100</td>
<td>296</td>
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<tr>
<td>2.01-3.00</td>
<td>2,961</td>
<td>135</td>
<td>535</td>
<td>150</td>
<td>165</td>
<td>104</td>
<td>47</td>
</tr>
<tr>
<td>3.01-4.00</td>
<td>3,825</td>
<td>185</td>
<td>575</td>
<td>90</td>
<td>245</td>
<td>108</td>
<td>76</td>
</tr>
<tr>
<td>4.01-5.00</td>
<td>3,735</td>
<td>165</td>
<td>517</td>
<td>195</td>
<td>165</td>
<td>147</td>
<td>81</td>
</tr>
<tr>
<td>5.01-6.00</td>
<td>9,090</td>
<td>210</td>
<td>590</td>
<td>373</td>
<td>310</td>
<td>154</td>
<td>112</td>
</tr>
<tr>
<td>6.01-7.00</td>
<td>5,265</td>
<td>155</td>
<td>920</td>
<td>188</td>
<td>460</td>
<td>96</td>
<td>154</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>39,218</strong></td>
<td><strong>4,185</strong></td>
<td><strong>7,441</strong></td>
<td><strong>1,631</strong></td>
<td><strong>2,120</strong></td>
<td><strong>1,056</strong></td>
<td><strong>1,712</strong></td>
</tr>
</tbody>
</table>


Table 2.1.1b: Traffic count on Third Mainland Bridge from Lagos Island to Adekunle (Lagos Mainland)

**LOCATION: THIRD MAINLAND BRIDGE (FROM LAGOS ISLAND TO ADEKUNLE)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue/Onibus</th>
<th>Staff Bus</th>
<th>Heavy Goods</th>
<th>Motorcycle</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.00-8.00</td>
<td>7,760</td>
<td>160</td>
<td>1,305</td>
<td>53</td>
<td>270</td>
<td>135</td>
<td>140</td>
<td>9,823</td>
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<tr>
<td>8.01-9.00</td>
<td>7,495</td>
<td>200</td>
<td>1,350</td>
<td>101</td>
<td>130</td>
<td>340</td>
<td>137</td>
<td>9,753</td>
</tr>
<tr>
<td>9.01-10.00</td>
<td>5,000</td>
<td>245</td>
<td>1,145</td>
<td>60</td>
<td>28</td>
<td>290</td>
<td>85</td>
<td>6,853</td>
</tr>
<tr>
<td>10.01-11.00</td>
<td>5,820</td>
<td>275</td>
<td>905</td>
<td>70</td>
<td>85</td>
<td>320</td>
<td>55</td>
<td>7,530</td>
</tr>
<tr>
<td>11.01-12.00</td>
<td>5,600</td>
<td>211</td>
<td>1,890</td>
<td>55</td>
<td>40</td>
<td>370</td>
<td>90</td>
<td>8,256</td>
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<tr>
<td>12.01-1.00</td>
<td>4,315</td>
<td>220</td>
<td>1,925</td>
<td>36</td>
<td>35</td>
<td>385</td>
<td>58</td>
<td>6,974</td>
</tr>
<tr>
<td>1.01-2.00</td>
<td>8,320</td>
<td>220</td>
<td>2,040</td>
<td>33</td>
<td>40</td>
<td>965</td>
<td>86</td>
<td>11,704</td>
</tr>
<tr>
<td>2.01-3.00</td>
<td>994</td>
<td>95</td>
<td>805</td>
<td>245</td>
<td>162</td>
<td>195</td>
<td>35</td>
<td>2,531</td>
</tr>
<tr>
<td>3.01-4.00</td>
<td>1,460</td>
<td>195</td>
<td>486</td>
<td>165</td>
<td>131</td>
<td>250</td>
<td>60</td>
<td>2,747</td>
</tr>
<tr>
<td>4.01-5.00</td>
<td>945</td>
<td>115</td>
<td>340</td>
<td>165</td>
<td>84</td>
<td>195</td>
<td>40</td>
<td>1,884</td>
</tr>
<tr>
<td>5.01-6.00</td>
<td>1,035</td>
<td>105</td>
<td>770</td>
<td>90</td>
<td>104</td>
<td>180</td>
<td>59</td>
<td>2,343</td>
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<tr>
<td>6.01-7.00</td>
<td>1,055</td>
<td>120</td>
<td>150</td>
<td>84</td>
<td>64</td>
<td>165</td>
<td>41</td>
<td>1,679</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>49,799</strong></td>
<td><strong>2,161</strong></td>
<td><strong>13,111</strong></td>
<td><strong>1,157</strong></td>
<td><strong>1,173</strong></td>
<td><strong>3,790</strong></td>
<td><strong>886</strong></td>
<td><strong>72,077</strong></td>
</tr>
</tbody>
</table>


Table 2.1.1c: Traffic on Carter Bridge from Oyingbo (Lagos Mainland) to Lagos Island.

<table>
<thead>
<tr>
<th>Time</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.00-8.00</td>
<td>88</td>
</tr>
</tbody>
</table>
### LOCATION: CARTER BRIDGE (FROM OYINGBO TO LAGOS ISLAND)

<table>
<thead>
<tr>
<th>Time</th>
<th>CAR</th>
<th>TAXI</th>
<th>MINIBUS</th>
<th>MOLE/ONIBUS</th>
<th>STAFF BUS</th>
<th>HEAVY GOODS VEHICLES (HGV)</th>
<th>MOTOR CYCLE (OKADA)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.00-8.00</td>
<td>1,002</td>
<td>89</td>
<td>926</td>
<td>666</td>
<td>135</td>
<td>32</td>
<td>236</td>
<td>2,686</td>
</tr>
<tr>
<td>8.01-9.00</td>
<td>510</td>
<td>98</td>
<td>381</td>
<td>73</td>
<td>65</td>
<td>42</td>
<td>230</td>
<td>1,889</td>
</tr>
<tr>
<td>9.01-10.00</td>
<td>372</td>
<td>33</td>
<td>650</td>
<td>52</td>
<td>31</td>
<td>34</td>
<td>135</td>
<td>1,107</td>
</tr>
<tr>
<td>10.01-11.00</td>
<td>114</td>
<td>14</td>
<td>470</td>
<td>46</td>
<td>3</td>
<td>14</td>
<td>147</td>
<td>808</td>
</tr>
<tr>
<td>11.01-12.00</td>
<td>400</td>
<td>102</td>
<td>415</td>
<td>42</td>
<td>15</td>
<td>31</td>
<td>138</td>
<td>1,143</td>
</tr>
<tr>
<td>12.01-1.00</td>
<td>180</td>
<td>51</td>
<td>345</td>
<td>36</td>
<td>7</td>
<td>21</td>
<td>107</td>
<td>747</td>
</tr>
<tr>
<td>1.01-2.00</td>
<td>113</td>
<td>25</td>
<td>281</td>
<td>17</td>
<td>6</td>
<td>17</td>
<td>94</td>
<td>553</td>
</tr>
<tr>
<td>2.01-3.00</td>
<td>65</td>
<td>19</td>
<td>395</td>
<td>25</td>
<td>2</td>
<td>25</td>
<td>91</td>
<td>622</td>
</tr>
<tr>
<td>3.01-4.00</td>
<td>75</td>
<td>20</td>
<td>281</td>
<td>22</td>
<td>3</td>
<td>28</td>
<td>111</td>
<td>540</td>
</tr>
<tr>
<td>4.01-5.00</td>
<td>55</td>
<td>18</td>
<td>289</td>
<td>15</td>
<td>-</td>
<td>24</td>
<td>110</td>
<td>511</td>
</tr>
<tr>
<td>5.01-6.00</td>
<td>37</td>
<td>7</td>
<td>350</td>
<td>24</td>
<td>-</td>
<td>29</td>
<td>98</td>
<td>545</td>
</tr>
<tr>
<td>6.01-7.00</td>
<td>41</td>
<td>5</td>
<td>401</td>
<td>23</td>
<td>-</td>
<td>27</td>
<td>109</td>
<td>606</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2964</td>
<td>481</td>
<td>5,684</td>
<td>641</td>
<td>267</td>
<td>1,196</td>
<td>11,957</td>
<td></td>
</tr>
</tbody>
</table>

Source: LAMATA-(12 HOURS DATA (11/07/2001))

Table 2.1.1d: Traffic on Carter Bridge from Lagos Island to Adekunle (Lagos Mainland)

### LOCATION: CARTER BRIDGE (FROM LAGOS TO OYINGBO)

<table>
<thead>
<tr>
<th>Time</th>
<th>CAR</th>
<th>TAXI</th>
<th>MINIBUS</th>
<th>MOLE/ONIBUS</th>
<th>STAFF BUS</th>
<th>HEAVY GOODS VEHICLES (HGV)</th>
<th>MOTOR CYCLE (OKADA)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.00-8.00</td>
<td>515</td>
<td>193</td>
<td>313</td>
<td>205</td>
<td>118</td>
<td>187</td>
<td>323</td>
<td>1,854</td>
</tr>
<tr>
<td>8.01-9.00</td>
<td>492</td>
<td>157</td>
<td>1,212</td>
<td>131</td>
<td>75</td>
<td>109</td>
<td>461</td>
<td>2,637</td>
</tr>
<tr>
<td>9.01-10.00</td>
<td>360</td>
<td>108</td>
<td>877</td>
<td>97</td>
<td>40</td>
<td>75</td>
<td>285</td>
<td>1,842</td>
</tr>
<tr>
<td>10.01-11.00</td>
<td>512</td>
<td>107</td>
<td>989</td>
<td>90</td>
<td>48</td>
<td>57</td>
<td>474</td>
<td>2,277</td>
</tr>
<tr>
<td>11.01-12.00</td>
<td>418</td>
<td>90</td>
<td>988</td>
<td>67</td>
<td>29</td>
<td>71</td>
<td>385</td>
<td>2,048</td>
</tr>
<tr>
<td>12.01-1.00</td>
<td>692</td>
<td>84</td>
<td>658</td>
<td>72</td>
<td>35</td>
<td>62</td>
<td>326</td>
<td>1,929</td>
</tr>
<tr>
<td>1.01-2.00</td>
<td>243</td>
<td>76</td>
<td>1,030</td>
<td>96</td>
<td>8</td>
<td>69</td>
<td>135</td>
<td>1,657</td>
</tr>
<tr>
<td>2.01-3.00</td>
<td>1,410</td>
<td>155</td>
<td>500</td>
<td>31</td>
<td>45</td>
<td>55</td>
<td>590</td>
<td>2,786</td>
</tr>
<tr>
<td>3.01-4.00</td>
<td>1,470</td>
<td>160</td>
<td>581</td>
<td>41</td>
<td>55</td>
<td>65</td>
<td>390</td>
<td>2,762</td>
</tr>
<tr>
<td>4.01-5.00</td>
<td>760</td>
<td>105</td>
<td>465</td>
<td>36</td>
<td>48</td>
<td>56</td>
<td>290</td>
<td>1,760</td>
</tr>
<tr>
<td>5.01-6.00</td>
<td>705</td>
<td>75</td>
<td>598</td>
<td>63</td>
<td>82</td>
<td>71</td>
<td>355</td>
<td>1,949</td>
</tr>
<tr>
<td>6.01-7.00</td>
<td>1,163</td>
<td>80</td>
<td>545</td>
<td>59</td>
<td>85</td>
<td>57</td>
<td>345</td>
<td>2,334</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8,740</td>
<td>1,390</td>
<td>8,756</td>
<td>988</td>
<td>668</td>
<td>934</td>
<td>4,359</td>
<td>25,835</td>
</tr>
</tbody>
</table>

Source: LAMATA-(12 HOURS DATA (11/07/2001))

Table 2.1.1e: Traffic count on Eko Bridge from Costain (Lagos Mainland) to Lagos Island. (Apongbon)
Table 2.1.1f: Traffic count on Eko Bridge from (Lagos Island) Apongbon to Lagos Mainland Costain.

### LOCATION: EKO BRIDGE (FROM MAINLAND TO LAGOS ISLAND)

Traffic flow from Lagos Island to Lagos Mainland and vice versa via Third Mainland Bridge is always heavy during the day especially in the morning and afternoon peak periods. Table 2.1.1a and 2.1.1b presents that 57,363 vehicles moves from Adekunle to Lagos and 72,077 vehicles moves from Adekunle (Lagos Mainland) via Third Mainland Bridge, which means a total of 139,440 vehicle ply Third Mainland in both direction between Adekunle (Lagos Mainland) and Lagos Island.

Traffic flow from Lagos Island to Lagos Mainland and vice versa via Carter Bridge is always heavy during morning and afternoon peak periods. Table 2.1.1c and 2.1.1d presents that 11,957 vehicles moves from Oyingbo (Lagos Mainland) to Lagos Mainland and 25,835 moves from Lagos Island to Oyingbo (Lagos Mainland) via Carter Bridge, which means a total of 37,792 vehicles ply Carter Bridge in both direction between Oyingbo (Lagos Mainland) and Lagos Island.

Traffic flow from Lagos Island Mainland and vice versa via Eko Bridge is always heavy during morning and afternoon peak periods. Table 2.1.1e and 2.1.1f presents that 55,213 vehicles moves from Costain and Western Avenue end (Lagos Mainland) to Lagos Island and 31,866 vehicles moves from Lagos Island (Apongbon) to Lagos Mainland (Costain) via Eko Bridge: which means a total of 87,079 vehicles ply Eko Bridge on both direction between Costain (Mainland) and Lagos Island (Apongbon). On the aggregate a total of 264,311 vehicles move from Lagos Island to Lagos Mainland sand vice versa daily. Below is table 2.1.1g showing the total number of vehicles that move from Lagos Island and Lagos Mainland and vice versa; via Third Mainland Bridge, Carter Bridge and Eko Bridge.

Table 2.1.1g: Total numbers of vehicles that move to Lagos Island from Mainland and vice versa.

<table>
<thead>
<tr>
<th>HIGHWAY</th>
<th>FACILITY</th>
<th>VEHICLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Mainland Bridge</td>
<td>3 Lanes from both direction</td>
<td>139,440</td>
</tr>
<tr>
<td>Carter Bridge</td>
<td>2 Lanes from both direction</td>
<td>37,792</td>
</tr>
<tr>
<td>Eko Bridge</td>
<td>3 Lanes from both direction</td>
<td>87,079</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>264,311</td>
</tr>
</tbody>
</table>

Adopted from LAMATA-12 hours Data (11/07/2001)

Passenger Car Unit (P.C.U)

Vehicles of different types require different amount of road space because of variation in size and performance. In other to allow for these, the capacity measurements for roads and junctions traffic volumes are expressed in Passenger Car Unit (PCU) per hour, which may be the same from one vehicle to another and at the same time, vary from one vehicle to another. Below are table 2.1.2a, 2.1.2b and 2.1.2c showing the conversation of traffic volume to Passenger Car Unit (P.C.U.) per hour using the hour that has the highest volume of traffic flow during morning peak period.
### Table: 2.1.2a: The conversation of Traffic volume to Passenger Car Unit per hour on Third Mainland Bridge.

**LOCATION: THIRD MAINLAND BRIDGE**

<table>
<thead>
<tr>
<th>Class of Vehicle</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue</th>
<th>Omnibus</th>
<th>Staff Bus</th>
<th>Heavy Goods Vehicle (HGV)</th>
<th>Motorcycle (Okada)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Standard</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,813</td>
<td>705</td>
<td>729</td>
<td>100</td>
<td>90</td>
<td>62</td>
<td>130</td>
<td></td>
<td>4,077.50</td>
</tr>
<tr>
<td>Passenger Car Unit (PCU) Conversion</td>
<td>1,813</td>
<td>705</td>
<td>1,458</td>
<td>300</td>
<td>180</td>
<td>125</td>
<td>97.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LOCATION: THIRD MAINLAND BRIDGE**

<table>
<thead>
<tr>
<th>Class of Vehicle</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue</th>
<th>Omnibus</th>
<th>Staff Bus</th>
<th>Heavy Goods Vehicle (HGV)</th>
<th>Motorcycle (Okada)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Standard</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5,000</td>
<td>245</td>
<td>1,145</td>
<td>60</td>
<td>28</td>
<td>290</td>
<td>85</td>
<td></td>
<td>8,424.75</td>
</tr>
<tr>
<td>Passenger Car Unit (PCU) Conversion</td>
<td>5,000</td>
<td>245</td>
<td>2,200</td>
<td>180</td>
<td>56</td>
<td>580</td>
<td>63.75</td>
<td></td>
<td>13,102.75</td>
</tr>
</tbody>
</table>

Adopted from LAMATA 12 Hours Data (11/07/2001)

### Table: 2.1.2b Showing the conversion of Traffic Volume to Passenger Car Unit per hour on Carter Bridge

**LOCATION: CARTER BRIDGE**

<table>
<thead>
<tr>
<th>Class of Vehicle</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue</th>
<th>Omnibus</th>
<th>Staff Bus</th>
<th>Heavy Goods Vehicle (HGV)</th>
<th>Motorcycle (Okada)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Standard</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,002</td>
<td>89</td>
<td>926</td>
<td>266</td>
<td>135</td>
<td>64</td>
<td>177</td>
<td></td>
<td>4,252</td>
</tr>
<tr>
<td>Passenger Car Unit (PCU) Conversion</td>
<td>1,002</td>
<td>89</td>
<td>1,852</td>
<td>798</td>
<td>270</td>
<td>64</td>
<td>177</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LOCATION: CARTER BRIDGE**

<table>
<thead>
<tr>
<th>Class of Vehicle</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue</th>
<th>Omnibus</th>
<th>Staff Bus</th>
<th>Heavy Goods Vehicle (HGV)</th>
<th>Motorcycle (Okada)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Standard</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>515</td>
<td>193</td>
<td>313</td>
<td>205</td>
<td>118</td>
<td>187</td>
<td>323</td>
<td></td>
<td>2,691.25</td>
</tr>
</tbody>
</table>

Adopted from LAMATA 12 Hours Data (11/07/2001)

### Table: 2.1.2c Showing the conversion of traffic volume to passenger Car Unit per hour on Eko Bridge

<table>
<thead>
<tr>
<th>Class of Vehicle</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue</th>
<th>Omnibus</th>
<th>Staff Bus</th>
<th>Heavy Goods Vehicle (HGV)</th>
<th>Motorcycle (Okada)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Standard</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>515</td>
<td>193</td>
<td>626</td>
<td>615</td>
<td>536</td>
<td>274</td>
<td>222.25</td>
<td></td>
<td>6,943.25</td>
</tr>
</tbody>
</table>

Adopted from LAMATA 12 Hours Data (11/07/2001)

Table 2.1.2c: Showing the conversion of traffic volume to passenger Car Unit per hour on Eko Bridge
LOCATION: EKO BRIDGE

Time: 7:00AM - 8:00AM (From Costain (Mainland) to Lagos)

<table>
<thead>
<tr>
<th>Class of Vehicle</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue Omnibus</th>
<th>Staff Bus</th>
<th>Heavy Goods Vehicle (HGV)</th>
<th>Motorcycle (Okada)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Standard</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12,860</td>
<td>190</td>
<td>1,130</td>
<td>127</td>
<td>104</td>
<td>70</td>
<td>210</td>
<td>17,196.50</td>
</tr>
<tr>
<td>Passenger Car Unit (PCU) Conversion</td>
<td>12,860</td>
<td>190</td>
<td>2,260</td>
<td>381</td>
<td>208</td>
<td>140</td>
<td>157.50</td>
<td>17,196.50</td>
</tr>
</tbody>
</table>

Time: 8:00AM - 9:00AM (From Lagos to Costain (Mainland))

<table>
<thead>
<tr>
<th>Class of Vehicle</th>
<th>Car</th>
<th>Taxi</th>
<th>Minibus</th>
<th>Molue Omnibus</th>
<th>Staff Bus</th>
<th>Heavy Goods Vehicle (HGV)</th>
<th>Motorcycle (Okada)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Standard</td>
<td>1.0</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>786</td>
<td>175</td>
<td>680</td>
<td>96</td>
<td>114</td>
<td>50</td>
<td>315</td>
<td>3,163.25</td>
</tr>
<tr>
<td>Passenger Car Unit (PCU) Conversion</td>
<td>786</td>
<td>175</td>
<td>1,380</td>
<td>258</td>
<td>228</td>
<td>100</td>
<td>236.25</td>
<td>3,163.25</td>
</tr>
</tbody>
</table>

Adopted from LAMATA 12 Hours Data (11/07/2001)

The Passenger Car Unit per hour of the three highways that link Lagos Island from Lagos Mainland varies depending on the traffic volume. Table 2.1.2a presents that passenger Car Unit per hour between 9:00 am to 10:00am along Third Mainland Bridge is 13,102.25 Passenger Car Unit per hour in both direction which is the highest traffic volume in morning peak period.

Table 2.1.2b presents that Passenger Car Unit per hour between 7:00am to 8:00am (which is the highest traffic volume in morning peak period) along Carter Bridge is 6,943.25 Passenger Car Unit per hour in both direction.

Table 2.1.2c presents that Passenger Car Unit per hour between 8:00am to 9:00am (which is the highest traffic volume in morning peak period) along Eko Bridge is 20,359.75 Passenger Car Unit per hour in both direction.

Road Capacity

The capacity of an highway or street is defined as the maximum number of vehicle which has a reasonable expectation of passing over a given section of a lane or a roadway in one direction (or both direction for a two-lane or three lane highway during a given time under prevailing roadway condition. (Oglesby 1975:212). This is measure using highway capacity Manual.

Below is table 2.1.3a showing Road Capacity of the three highway bridges that leads to Lagos Island using Highway Capacity Manual.

<table>
<thead>
<tr>
<th>Road</th>
<th>Facility</th>
<th>Expected passenger Car Unit Per Hour</th>
<th>Capacity Passenger Car per Unit per hour</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Mainland Bridge</td>
<td>Three lane highway for both direction</td>
<td>4,000</td>
<td>13,102.25</td>
<td>Inadequate</td>
</tr>
<tr>
<td>Carter Bridge</td>
<td>Two lane highway for both direction</td>
<td>2,000</td>
<td>6,943.25</td>
<td>Inadequate</td>
</tr>
<tr>
<td>Eko Bridge</td>
<td>Three lane highway for both direction</td>
<td>4,000</td>
<td>20,359.75</td>
<td>Inadequate</td>
</tr>
</tbody>
</table>

Table 2.1.3a shows that Third Mainland Bridge is expected to carry 4,000 passenger car unit per hour, but carries 13,102.25 passenger car unit per hour; Carter Bridge is expected to carry 2,000 passenger car unit per hour, but carries 6,943.25 passenger car unit per hour and Eko Bridge is expected to carry 4,000 passenger car unit per hour, but carries 20,359.75 passenger car unit per hour. This means the road capacity of Third Mainland Bridge, Carter Bridge and Eko Bridge are inadequate.

Third Mainland Bridge carries an excess of 9,102.25 passenger car per Unit during the highest traffic flow in morning peak period. Carter Bridge carries an excess of 4,943.25 passenger car per unit during the highest traffic flow in the morning peak period. Eko Bridge carries an excess of 16,359.75 passenger car unit during the highest traffic flow in morning peak period. These Highways are without the application of Intelligent Transport System (ITS) technologies to monitor and control traffic.

Developed countries such as United Kingdom (UK) and United State of America (U.S.A.) have been applying Intelligent Transport System (ITS) technologies to road Transport Management. Each working day, London facilities 11million cars, 6 million bus passengers and 400,000 cyclists, through a high-tech eye watching over the city's busiest road every minute of the year at London Traffic Control Centre using 1,200 closed circuit television cameras and 2,800 Intelligent Traffic Signals (Wordsworth 2007).

In United State of America (U.S.A.), Intelligent Transport System (ITS) technologies are employ in metropolitan Cities .Chicago (Illinois) in 2002 recorded 20.5million vehicle trips daily on roadways and an additional 1.5 million daily trips were made on transit. The Intelligent Transport System (ITS) technologies in operation are 22 changeable message signs that display real time traffic information on freeways, over 2,400loop detectors, to collect such information and 113 ramp meters, close circuit television cameras and video surveillance cameras (GAO2005).

San Francisco (California) recorded 17 million trips daily in 2002 on roadways and an additional 1.4 million daily trips were made on transit. The Intelligent Transport System (ITS) in operation include 511 service system which provides the callers and those who visit the 511 Website with real-time traffic information about conditions and incident including point to point driving time on routes and 4,700 traffic sensing detectors (GAO2005).

Lag Vegas (Nevada) recorded 3.6 million trips daily in 2003 on roadways and an additional approximately 124,000daily trips were on the transit systems. The Intelligent Transport System (ITS) technology in operation is an integrated freeway and arterial management system designed to reduced congestion and improve incident response time and management to control and monitor traffic (GAO2005).

Indianapolis (Indiana) recorded 5.5 million vehicle trips daily in 2002 on roadways and an additional 28,000trips were made on transit systems. Traffic Management Center was opened in 2004 and has incorporated cameras, sensors and other technologies with posting traffic information via changeable message signs, highway advisory radio, pagers and real time on the web to inform drivers.
INTELLIGENT TRANSPORT SYSTEM (ITS) DEFINITION AND MODELS

Intelligent Transport System (ITS) is a process of infusing technology into surface transportation management (Abernethy 2004). Intelligent Transport System (ITS) is the general term used for new road transport systems, driven by advanced information and communication technology (Hollborn 2002). Intelligent Transport System (ITS) has been accepted to signify the beginning of a renaissance in the applications of communications, sensors, display devices and positioning technologies integrated into the transportation infrastructure and vehicles (Pickord 2004).

Intelligent Transport System (ITS) are among the must have technologies for traffic engineers around the world. Broadly covering concepts from allowing traffic lights to adopt traffic volumes to predicting traffic jams so that counter measures can be taken in time (Holdsworth 2006). The process of transport planning has therefore becomes simplified through the range of models on Intelligent Transport System (ITS) and Transport information System (TIS) (Oyesiku, 2002). Intelligent Transport System (ITS) models ranging from Traffic Simulation Model, Continuous Traffic Assignment Model (CONTRAM) and Dynamic Assignment Model have their own data format due to internal requirements. Intelligent Transport System (ITS) model offers an environment "data fusion" for a variety of traffic and transport data which provides full utilities on a wide area like; traffic management and division support, short time traffic forecast, impact analysis or feasibility studies and information visualization (Barceló and Garcia 2004).

INTELLIGENT TRANSPORT SYSTEM (ITS) APPLICATIONS AND BENEFITS

Intelligent Transport System (ITS) has been associated with large infrastructure projects. Both Urban Traffic Control Unit (UTC) and Electronics Toll Collection (ETC) System have been given priority in developed and developing countries to date. Urban Traffic Control (UTC) and Electronic Toll Collection (ETC) are seen to represent the platform on which more sophisticated intelligent transport System (ITS) applications can be developed (Sayeg 2004).

According to Wu (2007) to achieve effective alternative route management, there has been a strong need to share information between highway and city traffic management. Alternative route management can be applicable among the three highway bridges (Third Mainland Bridge, Carter Bridge and Eko Bridge) that link Lagos Mainland with Island to alternate traffic especially during the highest traffic flow on these three highway bridges which is between 9.00am to 10.00am along Third Mainland Bridge; 7.00am to 8.00am along Carter Bridge and 8.00am to 9.00am along Eko Bridge. Intelligent Transport System (ITS) can be applicable in the area of Urban Traffic Control especially to control 264,311 vehicles that move in and out of Lagos Island from Mainland; and in other major part of Lagos metropolis which cannot be controlled by traffic wardens and simple traffic light devices.

Furthermore, Intelligent Transport System not only have address traditional traffic flow management requirements, but are increasingly also seen as a tool to both enable and enhance the security of critical infrastructures vital for the safety of society. However, with flexible visual integration tools and properly designed network the key is to be able process and manipulate the
information at the graphical level versus application integration level and be able to share that that contextually with others (Wu, 2007). Below is figure 3.1.1. showing the application of intelligent Transport System (ITS), Security System and Surveillance System on road transport management, using close circuit Television (CCTV) camera, sensors, Communication and positioning devices in conjunction with computer Network

**Figure 3.1.1 Application of Intelligent Transport System (ITS) security and Surveillance System in road Transport Management.**

The application of Intelligent Transport System (ITS) on surface road transport has numerous benefits which include access to real-time traffic information; improve traffic conditions, road safety, emergency response times and environmental conditions; increased travel safety; reduced congestion, travel time, the number and severity of accidents; effective road capacity; and long-term transport and incident management (Sayeg, 2004).

**CONCLUSION**

At this 21st century, road transport management cannot be efficient and effective without the use of Information and Complex Technology in Lagos Metropolis, because of its urban functions. It is time for the government and its agency in charge of road transport management to starting using cameras, sensors, communication and positioning devices through computer to manage road transport, so as to make mobility and accessibility to be easy in Lagos metropolis.

**REFERENCE**


<table>
<thead>
<tr>
<th>Typical ITS System</th>
<th>Security System</th>
<th>Surveillance System</th>
</tr>
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<tbody>
<tr>
<td>Highway</td>
<td>Camera</td>
<td>Camera</td>
</tr>
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<td>Signals</td>
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<td>Sensors</td>
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<tr>
<td>Incidents</td>
<td>Devices</td>
<td>Devices</td>
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<td>Lane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispatch</td>
<td></td>
<td></td>
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<tr>
<td>CCTV Reporting</td>
<td></td>
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<tr>
<td>Communicat Building</td>
<td></td>
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<tr>
<td>Access</td>
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<td>CCTV Dispatch</td>
<td></td>
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<tr>
<td>Reporting</td>
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<tr>
<td>Communication</td>
<td></td>
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<tr>
<td>Vehicle</td>
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<td>Duty</td>
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<td>CCTV Dispatch</td>
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<td></td>
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<tr>
<td>Communication</td>
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</table>

W.H. Allen.


Punch Newspaper (2006): Lagos is the fastest growing megacity in the World -UN report, Punch Newspaper June 19; p2.


CAUSES, EFFECTS AND STRATEGIES FOR REDUCING COST AND TIME OVERRUNS ON CONSTRUCTION PROJECTS: CONSTRUCTION PRACTITIONERS’ VIEWS

By

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ABSTRACT
The inability of the construction management system in meeting construction project objectives often times lead to failed projects either because they were poorly managed, late, over budget or abandoned. The study therefore, aim at identifying the causes, effects and strategies for reducing cost and time overruns from the construction practitioners’ perspective. Structured questionnaire was designed for data collection from the architects, quantity surveyors, structural/civil engineers, builders and contractors through a purposive sampling technique. Out of 53 questionnaires distributed 37 were returned and analyzed using descriptive statistics. The findings revealed that cost and time overruns occur very often on construction projects irrespective of size. The client was found to be the most responsible while its occurrence was noted to be more prevalent in government/public sector projects. Further findings identify the major causes of cost and time overruns as inadequate financial provision and project planning. While the most significant effects of these overruns was observed to be project abandonment and loss of profit to the contractor. Adequate planning at early stages of project execution and prompt payment of constructors’ work among others are viewed as very effective means of reducing cost and time overruns by the practitioners.

Key words: Construction practitioners, Cost Overrun, Time Overrun Views

Introduction
Construction projects are undertaken by client in order to realize concepted idea at the right cost, time and quality. Unfortunately, Nigerian construction industry is plaque with the inability to keep to time and cost targets in project delivery. Elinwa and Uba (2001) observed that in Nigeria, overruns are given as the most important factors for project abandonment or contractor failure. The current economic situation and its attendant high inflation rate further result into increased cost of construction which makes the client demand for more prudence in expenditure and management of construction cost and time. Many factors are responsible for cost and time overruns on construction project due to the ever increasing complexities that attends project execution process. The contributions of the client, consultants and the contractor can not be over emphasized. The professionals are responsible for the design, costing and supervision of the development process; they set the pace at which the project proceeds, and responsible for inspiring all concerned with the construction with the need for expedition. Delays on their part in the supply of information before the job starts or in giving decision on matters arising while the job is in progress are reflected all down the line.
Masterman (1992) noted that sound working relationships between the construction management team and client's representative team will help to achieve good construction time performance. While Dissanayaka and Kumaraswamy (1999) opines that owners, designers/consultants, contractors and subcontractors all contribute in a variety of ways to the success level that is, the achievement of the project objectives in respect of time, cost and quality targets. Past studies on this subject examined either cost overrun or time overrun while the present study seek to examine both cost and time overruns, their causes, effects and strategies for reducing their occurrence from the construction practitioners' perspective.

**Literature review**

During the life of a contract, there are often occurrences that causes time and cost overruns irrespective of how well conceived they might have been. Many of these occurrences justify an extension of contract time for the contractor such as; severe inclement weather, mistakes during construction, variation orders, non availability of labour and delays caused by subcontractors and suppliers among others. Delays in building projects is one of the major factors contributing to an increase in the original cost limit of the project, since in most cases the cost of materials, labour and plant might have risen astronomically within a short or long-term delay.

Elinwa and Joshua (2001) observed that to reduce delays in most projects; adequate planning at early stages of project execution should be carried out; sufficient lead time should be allowed for tender preparation; clear intention and understanding of the technical specifications in order to reduce bottlenecks; and adequate period for the contractor for the examination of the tender documents in order for him to decide on his methods of construction, and to price his tender should be allowed.

In order to reduce cost overrun, Fisk (1997) identified several ways in which designers and contractors could reduce cost or improve the value of a project which include: the application of a value engineering concept, which aims at careful analysis of each function and the elimination or modification of anything that adds to the project cost without adding to its functional capabilities, the provision of comprehensive and error free designs and specification to avoid misinterpretations by the contractor or delay due to missing details; careful investigation of costs, availability of materials, construction methods, procurement costs, planning and organizing, cost/benefit values and similar cost influencing items will lead to improvement in the overall cost of project.

Frequent changes in materials and designs tend to make the project larger than initially planned thereby increasing the cost. Thornberry (2002) recommended possible ways of mitigating scope creep which include: establishing firmly, the requirements and features of the project at the onset before getting started; preparing the project team to do its best by getting members to sign off on capabilities and responsibilities; staying diligent about keeping the project on the right path through contract clauses that disallowed significant changes when the project is underway; and effective human resource management through effective motivation and project tracking.

The negative effects of time and cost overruns on the key stakeholders, the construction
The construction practitioners play a very significant role in ensuring that construction project objectives are realized. Chua; Kog & Loh (1999) claimed that client seems to have more influence on budget performance, the contractor on schedule and quality performance while the designers work involves from inception to completion. Hassan (1995) noted that a construction project requires team spirit, team building and team effort by all parties to a contract for the successful completion of a project. Consequently, the foregoing suggests that all the stakeholders in project execution process have vital roles to play in minimizing time and cost overruns on construction project. The study therefore aims at surveying the views of these practitioners on the causes, effect and strategies for reducing time and cost overruns.

Objectives of the study

The study seeks to:

i. Identify the causes of cost and time overruns on construction projects.

ii. Identify the effects of cost and time overruns on the stakeholders, the construction industry and the society at large.

iii. Identify the strategies for reducing time and cost overruns on construction projects from the construction practitioners' views.

Research Method

Sampling Method for questionnaire survey

A structured, self-administered questionnaire was designed for seeking the views of the construction professionals on the causes, effects and strategies for reducing cost and time overruns on construction projects. The target respondents were drawn from the construction professionals working in consulting firms, construction companies and clients/developers' organizations. A purposive sampling technique was adopted for the distribution of 53 questionnaires to the selected sample while a total of 37 (70%) valid responses were returned and analyzed.

Construction of the questionnaire

The survey instrument consists of two parts. Part A contains questions about the respondent's personal profile. It further queries the respondent's experiential knowledge of cost and time overruns on project handled, in respect to its rate of occurrences, the most liable professional, nature of project with the highest cases and the size of project affected by cost and time overruns. Part B consists of summated rating questions in which the respondents were required to indicate their level of agreement or otherwise with statements relating to the possible causes of cost and time overruns on construction projects. They were also to indicate from their experiences, the level of significance of the identified effects of cost and time overruns on the stakeholders, the construction industry and the society. And finally, to indicate their views on the level of effectiveness of the identified strategies in reducing cost and time overruns on construction projects.

Methods of data analysis

The responses to the questionnaire were summarized in total and in disaggregated form by the type of respondent, that is, Architect,
Quantity Surveyors, Structural/Civil Engineers, Builders and contractors, for analysis and interpretation by the researcher. The statistical tools employed for data analysis includes the use of descriptive data analysis such as pie chart, Histogram, percentages and frequency distribution. While, mean item score were used to analyze responses obtained on a modified Likert scale instrument to generate relevant indices as a measure of respondent's opinion.

Results
Figure 1 shows the analysis of responses by the various respondents. The professional affiliation of the respondents as indicated reflect the spread of the industry participants who are in position to give informed opinion about the causes, effects and strategies for reducing cost and time overruns on construction project. Figure 2 shows the nature of practice/employment of the respondents. The majority of the respondents (18) are from the contracting companies followed by those in the consulting firms (11) while 8 of the respondents are from the clients/developers organization. Figure 3 shows the years of working experience of the respondents, in which 20 respondents have experience ranging between 0-15 years while 12 respondents have 16-20 years experience and the remaining 5 respondents have above 20 years experience. Figure 4 indicated the academic qualification of respondents. The B.Sc Degree holders and the HND holders are both 15 in number each while the M.Sc holders are 7 in numbers. Figure 5 shows the numbers of projects handled by the respondents. The majority of the respondents (26) have handled over 10 projects while three of the respondents have handled between 6-10 projects. The remaining respondents (8) have handled between 1-5 projects.
Figure 2: Nature of practice/employment of respondents

Figure 3: Respondents years of experience

Figure 4: Academic qualification(s) of respondents
The result in table 1 shows that about 81% of the respondent agreed that cost and time overruns occur often on construction projects while a minority (19%) is of contrary view. Table 2 indicates the most liable practitioners for cost and time overruns. In both cases, the majority of the respondents (average 55%) held the clients liable while about 34% (average) viewed the contractors as most responsible. A small minority (average 11%) believes the consultants are responsible for cost and time overruns.

Table 1: Rate of occurrence of cost and time overruns on construction projects

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very often</td>
<td>12</td>
</tr>
<tr>
<td>Often</td>
<td>18</td>
</tr>
<tr>
<td>Rarely</td>
<td>7</td>
</tr>
<tr>
<td>Never</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
</tr>
</tbody>
</table>

Table 2: The most liable practitioner for cost and time overruns

<table>
<thead>
<tr>
<th>Liable for cost overrun</th>
<th>Frequency</th>
<th>Clients</th>
<th>Contractors</th>
<th>Consultants Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>12</td>
<td>5 37</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>54.05</td>
<td>32.43</td>
<td>13.51 100</td>
</tr>
<tr>
<td>Liable for time overrun</td>
<td>Frequency</td>
<td>21</td>
<td>12</td>
<td>3 37</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>56.76</td>
<td>35.14</td>
<td>8.11 100</td>
</tr>
</tbody>
</table>

Figure 7 indicates project type with high rate of cost and time overruns. A large majority of the respondents (78%) opined that cost and time overruns are more prevalent on government/public sector projects than the others. In figure 8, about 62% of the respondents indicates that cost and time overruns occurs in projects irrespective of its sizes while 35% of the respondents indicates its occurrence in large sized projects while a small minority (3%) indicate small size projects.

Figure 7 indicates project type with high rate of cost and time overruns. A large majority of the respondents (78%) opined that cost and time overruns are more prevalent on government/public sector projects than the others. In figure 8, about 62% of the respondents indicates that cost and time overruns occurs in projects irrespective of its sizes while 35% of the respondents indicates its occurrence in large sized projects while a small minority (3%) indicate small size projects.

Figure 7: Type of projects with cost and time overruns
Irrespective of cost

Large projects

Small projects

Figure 8: Size of projects with cost and time overruns.

Table 3: Shows the respondents' opinions on 18 factors that are capable of causing cost and time overruns on construction projects. These factors are related to finance, Project planning, executive capacity, variation, incomplete design and delays among others.

<table>
<thead>
<tr>
<th>Causes</th>
<th>Mean item Score</th>
<th>Overall Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Inadequate financial provision</td>
<td>3.59</td>
<td>1</td>
</tr>
<tr>
<td>2  Inadequate project planning or faulty feasibility studies</td>
<td>3.43</td>
<td>2</td>
</tr>
<tr>
<td>3  Variation in the scope of works</td>
<td>3.06</td>
<td>3</td>
</tr>
<tr>
<td>4  Lack of coordination between contractor and design team</td>
<td>3.00</td>
<td>4</td>
</tr>
<tr>
<td>5  Changes in government policies</td>
<td>2.97</td>
<td>5</td>
</tr>
<tr>
<td>6  Incomplete design and inadequate supervision by the consultants</td>
<td>2.86</td>
<td>6</td>
</tr>
<tr>
<td>7  Delays caused by subcontractors and supplies</td>
<td>2.76</td>
<td>7.5</td>
</tr>
<tr>
<td>8  Adverse economic climate</td>
<td>2.76</td>
<td>7.5</td>
</tr>
<tr>
<td>9  Selection of inappropriate procurement method</td>
<td>2.73</td>
<td>9</td>
</tr>
<tr>
<td>10 Preparation and approval of variation order</td>
<td>2.70</td>
<td>10.5</td>
</tr>
<tr>
<td>11 Bankruptcy of the client</td>
<td>2.70</td>
<td>10.5</td>
</tr>
<tr>
<td>12 Non compliance with the conditions of contract</td>
<td>2.62</td>
<td>12</td>
</tr>
<tr>
<td>13 Mistakes during construction</td>
<td>2.48</td>
<td>13</td>
</tr>
<tr>
<td>14 Inability to procure relevant materials and equipment</td>
<td>2.46</td>
<td>14</td>
</tr>
<tr>
<td>15 Lack of executive capacity of the contractor</td>
<td>2.43</td>
<td>15.5</td>
</tr>
<tr>
<td>16 Inclement (severe) weather condition</td>
<td>2.43</td>
<td>15.5</td>
</tr>
<tr>
<td>17 Litigation</td>
<td>2.40</td>
<td>17</td>
</tr>
<tr>
<td>18 Inadequate supply of labour</td>
<td>2.10</td>
<td>18</td>
</tr>
</tbody>
</table>

Strongly disagree = 1; disagree = 2, agree = 3, strongly agree = 4
Table 4 outlined the respondents' views on the level of significance of the effects of cost and time overruns on the stakeholders, construction industry and the society at large.

<table>
<thead>
<tr>
<th>Effects</th>
<th>Mean Score</th>
<th>Overall Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>It could bring about project abandonment</td>
<td>3.59</td>
<td>1</td>
</tr>
<tr>
<td>It result to loss of profit to the contractor through penalties for non-completion and could jeopardize his chances of winning further job.</td>
<td>3.32</td>
<td>2.5</td>
</tr>
<tr>
<td>Increase in final cost of projects due to payment for idle and unproductive time arising out of contractor's claim and inflation.</td>
<td>3.32</td>
<td>2.5</td>
</tr>
<tr>
<td>Added costs over and above those initially agreed upon at the outset, resulting in less returns on investment to the client</td>
<td>3.30</td>
<td>4</td>
</tr>
<tr>
<td>Uncompleted projects constitute a liability</td>
<td>3.26</td>
<td>5</td>
</tr>
<tr>
<td>It could lead to drop in building activities and inability to secure project finance</td>
<td>3.10</td>
<td>6</td>
</tr>
<tr>
<td>Added costs are passed on as a higher rental/lease costs or prices to the end-users</td>
<td>2.97</td>
<td>7</td>
</tr>
<tr>
<td>Result in loss of confidence in the professionals tarnish their reputations due to their inability to deliver value for money to the client</td>
<td>2.92</td>
<td>8</td>
</tr>
<tr>
<td>Structural Defect</td>
<td>2.82</td>
<td>9</td>
</tr>
<tr>
<td>Increase in bankruptcy of firms and companies and incidence of bad debts</td>
<td>2.64</td>
<td>10</td>
</tr>
<tr>
<td>Wastage and under-utilization of manpower</td>
<td>2.62</td>
<td>11</td>
</tr>
<tr>
<td>Decrease in revenue occurring to government</td>
<td>2.26</td>
<td>12</td>
</tr>
<tr>
<td>Reduction in the standard of living</td>
<td>2.02</td>
<td>13</td>
</tr>
<tr>
<td>Reduction in employment opportunities</td>
<td>2.00</td>
<td>14</td>
</tr>
</tbody>
</table>

Not Significant = 1; Somehow significant = 2; significant =3; very significant = 4
Table 5 shows the construction practitioners’ views on the level of effectiveness of strategies for reducing cost and time overruns on construction projects.

Table 5: Strategies for reduction Cost and Time overruns

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Mean item Score</th>
<th>Overall Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Adequate planning at early stages of project execution</td>
<td>4.81</td>
<td>1</td>
</tr>
<tr>
<td>2 Prompt payment of constructors’ work duly executed and settlement of fees account of consultants</td>
<td>4.78</td>
<td>2</td>
</tr>
<tr>
<td>3 Sound working relationships between the construction management team and client’s representative team</td>
<td>4.62</td>
<td>3</td>
</tr>
<tr>
<td>4 Employment of contractor on the basis of experience, financial standing, capacity and expertise</td>
<td>4.54</td>
<td>4</td>
</tr>
<tr>
<td>5 Prompt response to genuine written instruction and execution of variation orders to avoid delays</td>
<td>4.43</td>
<td>5</td>
</tr>
<tr>
<td>6 Strict compliance with the programme of work</td>
<td>4.40</td>
<td>6</td>
</tr>
<tr>
<td>7 Motivation of experienced and qualified workforce to improve productivity and quality of workmanship</td>
<td>4.37</td>
<td>7</td>
</tr>
<tr>
<td>8 Efficient information retrieval and distribution systems to guard against communication gaps and associated delays</td>
<td>4.32</td>
<td>8</td>
</tr>
<tr>
<td>9 Provision of comprehensive and error free designs and specification to avoid misinterpretation by the contractor</td>
<td>4.27</td>
<td>9.5</td>
</tr>
<tr>
<td>10 Adequate site supervision to minimize poor quality workmanship and idle times</td>
<td>4.27</td>
<td>9.5</td>
</tr>
<tr>
<td>11 Sufficient lead time for tender preparation and submission of realistic cost estimate</td>
<td>4.21</td>
<td>11</td>
</tr>
<tr>
<td>12 Elimination or modification of anything that adds to the project cost without adding to its functional capabilities</td>
<td>4.08</td>
<td>12.5</td>
</tr>
<tr>
<td>13 Preparation of financial statement on a regular basis as a means of informing the client about the financial status of the project</td>
<td>4.08</td>
<td>12.5</td>
</tr>
<tr>
<td>14 Efficient material management to minimize on-site wastage</td>
<td>3.92</td>
<td>14</td>
</tr>
<tr>
<td>15 Design for the use of cost-saving equipment and methods</td>
<td>3.67</td>
<td>15</td>
</tr>
</tbody>
</table>

Not effective = 1; Effective a little = 2 Somewhat effective = 3 Moderately effective = 4 Very effective = 5
Discussion
The rate of occurrence of cost and time overruns as indicated by the respondents (81%) to be often, is an indicator that cost and time overruns are a norm and this confirms the prevalent high level of uncertainty associated with construction projects. Elinwa and Joshua (2001) in their earlier study also opined that the degree of occurrence of time overrun is between 80% and 90% most of the time. The majority of respondents (about 55%) found the client liable for cost and time overruns, followed closely by the contractor which about 34% of the respondents' believes is the cause of cost and time overruns. This result also, is in agreement with Elinwa and Joshua (2001) earlier study, which noted client and contractor's contributions to time overrun as 62% and 32% respectively. Further findings show that cost and time overruns is more prevalent on government/public sector projects. This result can not be controverted since the government stands as the major sponsor of construction projects in Nigeria. The study also reveals that cost and time overruns occur on projects irrespective of the size.

From table 3, the respondents' opinions on 18 factors capable of causing cost and time overruns are indicated. Among the causes identified, inadequate financial provision was ranked as the most probable cause, followed by inadequate project planning or faulty feasibility studies; variation in the scope of works, lack of coordination between contractor and design team; changes in government policies; incomplete design and inadequate supervision by the consultants among others. Similar conclusions have also been reached by previous studies. For example, Ritz (1994) noted that under-funded projects can create problems for the construction manager. On the effects of cost and time overruns, the result of study in table 4 ranked project abandonment as the most significant effect. This is followed closely by loss of profit to the contractor through penalties for non-completion; increase in final cost of projects and less returns on investment to the client among others. Theses results can be substantiated with earlier studies by Elinwa and Joshua (2001) and Mbachu & Nkado (2004).

Table 5 ranked the strategies for reducing cost and time overruns in the order of their effectiveness thus: adequate planning at early stages of project execution; prompt payment of constructors' work, sound working relationship between the construction management team and client's representative and the employment of contractor on the basis of experience, financial standing, capacity and expertise among others. These findings agree with findings from other researchers. Thornberry (2002) noted that by establishing firmly, the requirements and features of the project at the onset before getting started can reduce the incident of cost and time overruns. Hassan (1995) opined that a construction project requires team spirit, team building and team effort by all parties to a contract for the successful completion of a project. Jackson (1990) identified the need for a clear intention and understanding of the technical specifications in order to reduce bottlenecks in execution of projects. While Mee-Edoiye (2002) noted that through the adoption of well-articulated cost-effective motivational schemes for the workforce will increase productivity and consequently lead to completion of project within planned duration and cost.

Conclusion
The study noted that cost and time overruns on construction projects are a norm, which is supported by the prevalent high level of
uncertainties associated with construction projects. Other identified causes of cost and time overruns from the findings includes: inadequate financial provision, inadequate project planning, variation in the scope of works; lack of coordination between contractor and design team; changes in government policies, incomplete design and inadequate supervision by the consultants among others. The significant effects of cost and time overruns on the stakeholders, construction industry and the society at large calls for a holistic approach to project management in order to ensure more effective project implementation. The more significant effects of cost and time overruns from the study includes: project abandonment; loss of profit to the contractor and increase in final cost of projects to the client; high rental/lease costs or price to the end-users among others The need for very effective strategies to reduce this plague cannot be over emphasized. The practitioners' views from the findings includes: adequate planning at early stages of project execution; prompt payment of constructors’ work; sound working relationships between the construction management team and client's representative team; employment of contractor on the basis of experience, financial standing, capacity and expertise; prompt response to genuine written instruction among others will minimize the incident of cost and time overruns on construction projects.

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AMELIORATING URBAN ENVIRONMENTAL PROBLEMS FOR SUSTAINABLE DEVELOPMENT IN A FLEDGING STATE CAPITAL:
A CASE STUDY OF ADO-EKITI

By

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ABSTRACT
The rapid rate of urbanization in Nigeria especially in the second half of the 21st century have resulted in notable environmental problems especially in urban areas where population growth rate is astronomical and aggravated by the high rate of rural-urban drift. It is no gainsaying that Ado-Ekiti, the emergent capital of Ekiti State is currently experiencing urban environmental problems which are assuming dangerous dimensions. The perpetuation of this ugly trend portends danger to the urban fabric and the urbanites working and living in the city. This paper therefore intends to investigate the diverse environmental problems occasioned by rapid urbanization in Ado-Ekiti in order to provide feasible solutions toward ameliorating them. The research methodology involves data collection from primary sources by the use of questionnaires, traffic volume survey, and interviews and observations. Relevant data were also extracted from published and unpublished secondary sources. Research findings revealed that such urban environmental problems as increasing space demand for transportation routes; traffic congestion, accidents and conflicts, environmental pollution and degradation; and urban sprawl, among others have reached crisis levels in the rapidly expanding capital city. The paper suggests policies such as qualitative and quantitative improvement on urban housing stock, general improvement on traffic and circulation network, adoption of effective traffic management and control measures an the centralization of transport related services. Other improvement policy measures include the adoption of effective measure of pollution control abatement, improvement on telecommunication service network, revitalization of effective government control and stepping up traffic participation and enlightenment campaigns.

INTRODUCTION
By the turn of the 21st century, there has been growing interest among and social scientists in the study of urbanization process in developing countries of the world including Nigeria. The socio-economic factors responsible for rapid population growth in the cities of tropical Africa have been studied, especially the role of rural-urban migration leading to analysis of various economic problems associated with urban growth in developing countries such as urban poverty and unemployment have also been documented (Bascom (1959), Simms (1965), Epstein (1967), Caldwell (1969) and Onokerhoraye (1976). However, some gaps still exist on the analysis of the various environmental problems associated with the growth of urban centres in the development economies.

This paper is also intended to contribute towards the enlightenment of urban dwellers and developers on the source and consequences of urban environmental problems in the city. It also advocates the importance of cooperation with planning bodies and the significance of public participation in eradication these problems. It is hoped that the urbanites will appreciate the role of environmental planning and the
institutions involved in enhancing harmoniously organized urban spaces that are healthful, livable and aesthetically appealing.

CONCEPTUAL FRAMEWORK AND THEORETICAL UNDER PLANNING

Mitchell (1966) referred to urbanization as being the process of becoming urban by changing from agriculture to other pursuits common to cities with corresponding changing of behaviour patterns. Hence to urbanize means to render urban, or to remove the rural attributes on account of aggregation of large population in a place. The environment has also been defined as the surrounding external condition within which a man or any organization lives. It is the surroundings of a central object which could be anything as long as it is relevant to the surrounding (Olanrewaju, 2001). According to George (2006), the environment is described as the spatial surrounding of the home, the work place or public place, and to continuously maintain an environment is a goal of sustainable development.

It is evident that from 1970 to 1995, urbanization in Africa increased by 15.0 percent, second only to Latin America. This rapid rate brings about several problems for the urban centres such as the over-loading of existing facilities, traffic congestion, inadequate, housing, creation of slums and pollution in all its ratification (Olatubara, 2004). On the global level, the sheer level of urbanization is causing a lot of concern as many socio-psychological and environmental problems have continued to rear their heads. In fact, many contemporary ailments like hypertension and neurosis are results of man's divorce from his natural environment (Bourne, 1972).

The unprecedented growth in world population, the massive movement of people into cities and the rapid economic and technological development are the three major forces shaping the future of cities. If any of these get out of balance and control there are signs that they have the impact on man's urban habitat could be disastrous (Blair, 1974).

The development of the world is best noticed in cities which serve as driving forces in economic and social development. The World Bank estimates that in the developing world, as much as 180% of future economic growth will occur in towns and cities which are reaching unprecedented sizes (Adebayo, 2001). It is also predicted that by year 2007, half of the world's population will live in urban areas, a considerable increase from the 30% living in urban areas in 1950. While some 3.2 billion of the world's 6.5 billion live in cities today, it is expected that the number will increase to 5 billion, an estimated 61% of the global population by 2030 (UN Commission on Population and Development).

In Nigeria, there were 56 urban centres (i.e., places with population above 20,000) in 1953 with total urban population of 3.2 million. By 1963, the number had increased by over 228% with the emergence of 185 urban centers and an urban population of 10.75 million. The rate of formation of new urban centres and growth of existing ones has continued unabated (Olotuah, 2000).

The city has been likened to the human life cycle traceable from its inception through growth to maturity, old age and death. The first and second stages of city development are the growth stage and maturity stage respectively, while the third stage is the decay-decline stage. If nothing positive is done at the third stage, chaos becomes clearly
noticeable in the urban fabrics. This could degenerate to urban slum which connotes poor quality and substandard housing environment usually occupied by low-income families (Ojo-Fajuru, 2006). Urban pollution is an inevitable product of the city. The central areas of world cities generate huge waste and pollution products that put stress on human beings and municipal services alike (Blair, op cit). The motor car has often made most cities unbearable to live in. Apart from noise, it is responsible for the worst fraction of atmospheric pollution. It fills the streets with poisonous carbon monoxide and tetraethyl lead. Many main city thoroughfares have almost lethal concentration of gases during the hours of greatest human activity (Borne, op. cit.)

In Ado-Ekiti region, the ever-growing volume of motorized movement is inflicting damages on the environment. Moreover, poor traffic management, badly serviced vehicles and offensive driving/riding attitudes combine in traffic jams to damage air quality especially during sunny weather. Pollution is further heightened by the daily traffic congestion that characterize the region. Given the fact that there is no known programme for controlling automobile emission, pollution goes on unabated in the region (Ojo-Fajuru, 2001). The notion is palpably clear that urban transportation is generally responsible for between 70 to 80 per cent of the emission causing air pollution in major urban centres worldwide (World Bank, 1993).

The impact of urbanization is also felt in the generation of solid waste by the inhabitants. In some developing countries, the effects of solid waste have not only appeared a threat to human health, it has triggered some other environmental factors. Indiscriminate dumping of refuse into streams and open drains have resulted in flood disasters when such streams or rivers breached their banks as it has often occurred along River Ogunpa, Ibadan which often claims many lives and destroys properties (Olatunde, 2004). In Ado-Ekiti refuse litter major streets while obnoxious refuse heaps used for defecation dot the landscape. Refuse is also dumped inside the drains where they are burnt or left for rains to wash away. Larger volumes of refuse are dumped into the drains during rainfall (Ojo, 1983).

Another obvious impact of urbanization on urban centres is their physical expansion and implication. Several thousand hectares of land have been covered by the cities' super structure and paved roads, such that development are daily encroaching on surrounding rural lands. Whereby cities appears like cancer spreading out relentlessly and obliterating everything in their way (Olatubara, op. cit). In response to the great demand for houses resulting from increasing population, unplanned and substandard private housing districts continue to emerge in many Nigerian towns and cities, thus explaining why our urban centres are characterized by shanty dwellings and squatters settlements. The persistent spread of these substandard structures over a relatively large area in an untidy manner is termed urban sprawl (Basorun, 2004). The increasing use of automobile into Ado-Ekiti region, combined with other factors of urbanization, have scattered the capital city into the suburbs. This unplanned and uncoordinated development pave way for massive urban sprawl radiating up to 10 kilometers in all directions and interconnected by a web of transportation routes. The changes and development that occur eventually spill over the edge of the city limit into the suburbs, fill in the empty spaces and head towards the
country side (Ojo-Fajuru, 2001).

The Study Area
Ado-Ekiti is the cultural headquarters of Ekitiland. It lies on the longitude 5.27 East of the Greenwich Meridian and Latitude 7.31 North of the equator. Strategically located within the central parts of Ekiti State, it is about 48km from Akure, 200km from Ibadan, 366km from Ikeja, and 500km from Abuja, FCT.

In 1996 when Ekiti State was created, Ado-Ekiti assumed dual roles as headquarters of Ado-Ekiti Local Government and the capital city of Ekiti State. According to the Nigerian census of 1963, Ado-Ekiti had a population of 157,519 people, the largest in the old Ondo State. The National Population Commission figures show a significant increase to 208,414 people by the year 2001. Using the year 2001 figures as the base year population, and a 2.9% rate of population change per annum (according to the National Population Commission, Federal Office of Statistics, National Planning Commission and World Bank Release), the projected population for Ado-Ekiti for year 2006 and 2010 are 240,438 and 269,566 respectively.

METHODOLOGY
Data requirement for this study is partially derived from secondary sources like published and unpublished works, research reports and journals. Primary data were also collected by survey of socio-economic, physical and environmental aspects of Ado-Ekiti. A sample size of 500 was decided. Using the systematic sampling technique, ten (10) residential districts were selected namely Ureje, Ajilosun, Ijigbo, Ijebu, Ijebun, and the G.R.A. others are Dallimore, Opopogbooro, Okeila/Okeyinmi, Orereowu and Oke-Ado. Two (2) people were interviewed in each of the twenty-five (25) houses selected from each district, using the questionnaire and unstructured interview methods. Out of the expected 500 questionnaire, only 459 were finally accepted for collation and analysis, boiling down to a response rate of 91.0% which is relatively sufficient for a valid assessment of the case study. Preliminary observation was used to update land uses, transportation network facilities, and services. Traffic volume surveys were carried out on selected major transportation routes in the study area.

RESEARCH FINDINGS AND DISCUSSION
The study established that Ado-Ekiti is confronted with environmental problems arising from increasing population and motorized movement. This is against the backdrop of unplanned growth as the town grew from rural setting to become one of the country's major urban centres.

TRAFFIC CONGESTION ACCIDENTS AND CONFLICTS
Study reveals the effect of urbanization as evidenced in the rising car ownership, mini-bus usage, and okada rider's operation in Ado-Ekiti. This has resulted to daily traffic congestion and conflicts that cripple movement along major roads in the city. This trend lowers air quality, thereby constituting a significant source of environment pollution and streets (Ojo-Fajuru, 2005). The rates of accidents and conflicts have also increased dramatically. Despite that ownership and usage of automobile rose by as much as 70% over the years, yet streets, roadways, and safety measures have not increased commensurately.
Increasing Space Demand for Transportation Routes and Transport Related Services

Research findings show that traffic volume have increased on major routes in the city by 78% over 1983 figure. It is therefore expected that space demand for new roads and the expansion of existing ones is increasing. Obviously any proposal made for expanding existing roads will 'eat up' adjacent development while new roads will require extensive land allocation at the expense of other urban sectors. Typically the on-going dualisation project has resulted to the demolition of buildings and disruption of socio-economic activities along major streets in the city.

The study also reveals many transport related services springing up (albeit sporadically) to complement existing ones. Such include motor parks, bus stop, automobile/motorcycle repair workshops and vulcanisers at various location within the city and the suburbs. Spare parts business, automobile sales shops and petrol stations have increased tremendously. These put significant pressure on spatial allocation for other uses.

Environmental Pollution and Degradation

Field survey reveals the menace of environmental pollution arising from four major sources:

(a) Emission from automobiles constitute between 70-80% of air pollution in the city. Other sources such as power generating sets open air cooking, burning or putrefaction of refuse in drainage channel and refuse heaps account for the remaining 20-30%

(b) Water pollution resulting mainly from the indiscriminate dumping of refuse and defecation in drainage channels is significant with response rate of 44%

(c) More than half of noise pollution in the city emanate from traffic flow (53%). Also significant are the operation of machines and equipment like power generating sets and grinding machine (22%), the blaring of music from record stores and mobile cassette/compact disc vendors (10%), construction sites

(d) Environmental pollution arising from the littering of streets with refuse, and the unsightly appearance of germanous

Table 1: Source of Noise Pollution In Ado-Ekiti

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Flow</td>
<td>243</td>
<td>53</td>
</tr>
<tr>
<td>Machines and Equipment</td>
<td>101</td>
<td>22</td>
</tr>
<tr>
<td>Music Shops/Mobile Music Vendors</td>
<td>46</td>
<td>10</td>
</tr>
<tr>
<td>Construction Site</td>
<td>32</td>
<td>7</td>
</tr>
<tr>
<td>Household Appliances</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td>Others</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>459</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Field Survey, 2007

(7%), and even the humming of household appliances like air-conditioners, refrigerators, and deep freezers (5%). Other sources of noise like churches, mosques and social function account for the remaining 3% as shown in Table 1 above.

(7%)
refuse heaps has a response rate of 32%. Other variables are the indiscriminate location of signpost and billboards obstructing the streetscape (21%), the intrusion of compatible uses by non-conforming ones (10%), land pollution from the discharge of the effluents of mechanic workshops and industrial activities into the environment (15%), and the lack of greenery in the urban landscape (17%).

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Littering of street/refuse heaps</td>
<td>147</td>
<td>32</td>
</tr>
<tr>
<td>Indiscriminate location of signpost and billboard</td>
<td>96</td>
<td>21</td>
</tr>
<tr>
<td>Intrusion of non-conforming uses</td>
<td>46</td>
<td>10</td>
</tr>
<tr>
<td>Effluent discharge</td>
<td>69</td>
<td>15</td>
</tr>
<tr>
<td>Lack of greenery</td>
<td>78</td>
<td>17</td>
</tr>
<tr>
<td>Others</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>459</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Field Survey, 2007

**Inadequacy of Infrastructure and Services**

Survey reveals that infrastructural amenities and services in Ado-Ekiti have been overstretched consequent upon increased population and rapid urbanization. In all, 395 respondents constituting 86% of the sample size asserted that the narrow roads and bridges, outdated by present day realities hinder smooth traffic flow, and trigger congestion and accidents especially along Opopogbooro-Campus, Odo-Ado-Poly, and Irona-Ilawe Roads.

With the increasing number of vehicles as well as trips demand from the central business district, it is observed that the existing roads tend to carry excess traffic burden. It is also observed that roads are in severe states of disrepair as a result of which there is concentration of urban traffic on the main corridors, especially Ajilosun-Ijigbo-Okesha-Fajuyi Park-Opopogbooro axis. Indiscriminate on street parking and street trading activities make the situation worse especially in the CBD. According to the UN, more than half of the people in developing countries lack basic sanitation, a third do not have access to clean water, a quarter lack adequate housing, and a fifth do not have access to modern health services (UNCHS-Habitat, 2002). In similar manner, urban facilities have gone haywire in Ado-Ekiti. Most respondents (91%) complained of erratic power and water supply in the city, an indication that population explosion have outgrown available capacity of social services.

**Urban Sprawl**

Research findings reveal that the average occupancy ratio in the sampled residential districts (except in the GRA0 of the city range between 2.5-4 persons per room. This is considered to be on the high side when compared with the standard requirement of a maximum of 1.75-2 persons per habitable room in high density residential areas. Field study reveals the incidence of high rent on accommodation in the city whereby a room attracts rent of between N6000 and N12,000 per annum while the flat apartment ranges from N48,000 to as high as N200,000 per annum.
annum depending on the design, taste and location within the selected residential districts. This situation is compounded by estate agents and landlords who often demand the payment for at least 2 years house rent as well as an agreement fee and 10% agency fee. The high cost of rent coupled with inaccessibility to land loan lead to the formation and development of slums and squatter settlement. This phenomenon is glaring in the core area and the suburbs of the city with attendant negative effects on the people and the totality of the environment.

Ineffective Government Control
The public opinion constituting about 76% of respondents confirms that the essential machinery for executing physical planning and development are not properly coordinated in the city by successive governments. There is no clear cut governmental control on automobile usage, nor any organ or programme set up to control emission or regulate pollution and congestion. Even if there are laws and regulations to that effect, they have not yet been implemented. Since there is no stringent law restricting bad environmental practices, pollution and environmental degradation are assume dangerous dimensions in Ado-Ekiti.

Conclusion
Critical study of Ado-Ekiti reveals that it evolved from predominantly rural background and urbanized into an axis of important socio-economic, political, educational and administrative activities. The unprecedented increase in population and rapid urbanization brought about a myriad of environmental problems like traffic congestion, overstretched infrastructural facilities, in sanitary living condition, urban sprawl, pollution, degradation, and ineffective government control. These negative impacts lower environmental quality, standard of living and life expectancy in city.

Recommendations
General Improvement on the Quality and Quantity of Urban Housing Stock
Government should develop the will and compassion to make meaningful improvement on the quality and quantity of urban housing stock. This is expected to permanently resolve the urban housing crisis and sprawling in Ado-Ekiti.

General Improvement of Traffic and Circulation Network
The existing traffic and circulation network should be upgraded to cope with the increasing volume of traffic in the regional centre. Areas identified for immediate action are:

(a) Completion and routine maintenance of the on-going road dualisation project along major traffic corridors in the city
(b) Rehabilitation or construction of other township road network
(c) Provision of ring roads, bye-passes and alternative routes for through traffic
(d) Suitable location of bus-stops and lay-byes along major transportation

Adoption of Effective Traffic Management Control Measures
The present chaotic traffic situation in Ado-Ekiti will be greatly improved if the following traffic management measures are promptly adopted and vigorously pursued.

(a) Provision of well organized on-street and off-street parking, loading and off-loading facilities especially in the CBD
(b) Segregation of the various categories of traffic in the city
(c) Provision of road signs, markings and traffic lights on roadways and major traffic junctions
(d) Suitable location of bus-stops and lay-byes along major transportation
Revitalization of Effective Government Control

Effective government control is tantamount to the successful implementation of proposals and the enforcement of law and order. Master plans must be prepared and constantly reviewed to chart the course of development and curtail amorphous growth.

Public Participation and Enlightenment

The public should be continuously sensitized on the actualization of improvement proposals for a cleaner and better environment. They should be educated on the significance of clean air and air quality regulation. Programmes and actions like films, slides, radio and TV jingles, pamphlets, postal, journals, seminars and training workshops should be carried out from time to time to educate the people. The State Environmental Protection Agency in the Ministry Environment should brace up to innovative environmental awareness programmes which should be entrenched in the curricula at all levels of education.

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Technology, Yaba, Lagos between Tuesday 10th and Friday 13th October, 2006.


PROPERTY DEVELOPMENT FINANCE OF HOME OWNERSHIP:
AN EVALUATION OF FUTA THRIFT AND CREDIT COOPERATIVE SOCIETY

By

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ABSTRACT
Property development has been held down by a number of factors among which is inadequate funding. The sector is characterized by high cost of funding, mostly provided by banks; this coupled with short-term nature of the funds have proved to be unsupportive to the industry. For these reasons, private developers are saddled with the responsibility of looking for alternative ways of financing their development. Unfortunately, most of the financing vehicles that worked in the developed countries are difficult, if not impossible to apply to Nigeria situation. Hence, there is the need to look inwards. In this wise, this paper is designed to assess the contribution of FUTA Thrift and Credit Cooperative Society to the financing of owner-occupier residential property. The study reveals that majority of the staff members depends on thrift and cooperative society for either partial or full finance of their residential property. This has put a great pressure on the limited loan able funds. In this wise, the institution is urged to assist the FUTA Thrift and Credit Cooperative Society in other to access mortgage loan from National Housing Fund, which will be made available to members.

Introduction
The availability of proper and adequate housing development finance is pivotal to an effective and sustainable shelter provision. Lack of access to suitable form of credit has always been a major obstacle to the provision of shelter for the low-income groups, which constitute the vast majority of the urban households in developing countries. (UNCHS-Habitat, 1994). The housing sector plays a more critical role in a country’s welfare than is always recognized, as it directly affects not only the well being of the citizenry, but also the performance of other sectors of the economy (Sanusi, 2003). Housing development finance is pivotal to shelter provisions and is very important for a number of reasons. First, it is one of the three most important basic needs of mankind the others being food and clothing. Second, housing is a very important durable consumer item, which impacts positively on productivity, as decent housing significantly increases workers’ health and well being. Third, it is one of the indices for measuring the standard of living of people across societies. Consequently, greater
attention is needed in the recognition of the critical importance of financing in housing delivery system.

The focus on finance has been very prominent for obvious reasons. This is because housing provision requires huge capital outlet, which is often beyond the capacity of the medium income/low income groups. A major area of concern has been mortgage financing which has often been fingered as one of the most formidable constraints in the housing sector. It is also noted in Nigeria that most of the institutional sources of housing finance are often inaccessible to most Nigerian household especially low-income earners (Olufemi, 1993; Onibokun, 1985; Falegan, 1985; Olatoye, 2005). Experts' projection of the population having decent houses does not bring immediate succour as most see the situation as likely to worsen. Reason? The Nigerian Population, which is growing at three percent rate, is not match by the increase in home ownership creating a skew in the shelter provision gap Adegboyé, (2004). The government is aware of this situation and is working on some major reforms to turn things around. However, the Presidential Technical Board of Federal Mortgage Bank of Nigeria (FMBN), Professor Akin Mabogunje emphasized the desirability of strengthening the mortgage finance institution on Nigerian Television Authority (NTA) programme saying, “without mortgage finance, the average worker cannot for now come to own a house”.

The failure of the formal housing development finance institutions in Nigeria to adequately address the need of the vast majority in the area of home ownership led to the evolution and existence of an informal housing finance system of which thrift and credit is one (The World Bank, 1982). The pertinent questions to ask here is how does the low income and medium income earners cope with sourcing for finance for their home ownership? What are the strategies adopted? What are the requirements of these non-conventional methods of housing finance and what is the level of patronage? What are its effectiveness and limitations? It is against the forgoing that this paper tried to evaluate the contribution of FUTA Thrift and Credit Cooperative Society to home Ownership among the staff of the Federal University of Technology, Akure, Ondo State, Nigeria. The problem being highlighted above has been particularly identified with developing countries and the impact of the informal institutions for housing development finance cannot be properly quantified because they are largely uncoordinated, scattered and varied in scope and operational depth.

**Literature Review**

Prior to the colonial era, many methods of housing finance were adopted in Nigeria. Amongst these were village development scheme, social club contributions, loans from traditional moneylenders etc. All these methods were successful in the provision of finance for housing and its delivery in traditional setting. However, with the growing complexity in economic activities, the above-mentioned financing methods faded away and were then replaced with more modern forms of financing. Nubi (2000) classified the methods of housing finance in Nigeria into two sources. They are formal and informal sources.

The formal sector comprises of institutions operating within the statutory guidelines stated by the federal government. Among these is the Federal Mortgage Bank of Nigeria (FMBN), Commercial Banks, specialized Development Banks, Insurance Companies,
and until recently, the Pension/Provident Funds. The informal sector finance sources are personal or family savings, individual moneylenders, voluntary housing movement, and cooperative society. The saving culture and habit is very low among average Nigerian. Many who did lost their savings to distress and liquidated banks without adequate compensation are further discouraged from further saving.

Similarly, the gap between incomes and shelter cost in Nigeria is very wide. The low-income earners are completely eliminated from the housing market. This is attributed to the following: high cost of building materials, astronomical inflationary rate in the economy, excessive fees demanded for by the professionals involved in housing finance and excessive profit of contractors (Windapo, 2000 and Okupe, 2000). Ojeme, (2004) noted that financing the real estate investment has in recent time become more problematic as a result of the complex interaction of several factors. Among these are high interest rates charged on loans, stringent repayment requirements, and almost impossible pre-qualification conditions imposed by lenders. The bulkiness and illiquid nature of real estate investment is another problem that poses serious challenges in the traditional finance system and the uncertainty bedeviling the economy. In the housing sector, these problems are what culminate in high cost of housing delivery and lack of access to home ownership by a larger section of the population that are in most need.

Nigeria is yet to develop her housing finance system. She still operates at depository level and other traditional methods of housing finance because of the absence of appropriate legal framework for housing development finance through functional mortgage and capital market. The high level of poverty still inhibits saving and investment in housing sub sector. Due to lack of well developed mortgage market operation, an enabling environment for operation and lack of involvement of capital market financing of real estate development in Nigeria; it has been difficult for owner occupier to finance their residential property development without resulting to a source of pooling capital together through cooperative efforts. It is therefore imperative that alternative funding approaches be examined that can eliminate or at least mitigate the difficulties hitherto experienced in conventional housing finance. There is the need to understudy the mode of operation, as well, the contribution of the cooperative society to home ownership among the working class since it's an alternative option open to them.

**Study Area**

The establishment of the Federal University of Technology, Akure (Akure), Nigeria was announced in 1981 to give prominence to training in technology and applied science and to assist in ensuring rapid technological and industrial development of Nigeria. FUTA is located in Akure, the capital town of Ondo State, Nigeria. Ondo State lies between Latitude 5° 45“ and 8° 15” North and Longitudes 4° 30” and 6° East. The mission of FUTA is to promote technological advancement of Nigeria through emphasis on programmes that will engender the development of such products and services in which the nation possess great comparative advantage. The University is currently located on 630 hectares of land with additional land covering over 10,000 hectares located between Kilometres 10 and 17 on Akure-Owo Expressway. The undergraduate emolument as at 2005/2006 session is 6,923 and the postgraduate of the same session is 2,066. The
University has a total number of 1,629 staffs consisting of 415 Academic, 355 Administrative and Technical staffs and junior staff strength of 859. The University runs a school system, an integrated unit of a group of related disciplines with common academic interest in teaching and research. Currently, there are six of such schools and two new schools are being proposed to take off soon (visit www.futa.edu.ng for detail information).

The various trade unions in FUTA organized themselves into different Cooperative Societies to cater for the welfares of their members. However, this study is limited to the Federal University of Technology, Akure Academics Staff Multi-Purpose Cooperative Society, (FUTAASCOOPS). In order to be a member of FUTAASCOOPS you must be an academic staff of the university who showed interest in being a member. The aim of this society is to promote the economic interest of members by performing all or any of the following objectives:

(a) To promote the spirit of cooperative among academic staff members;
(b) To enhance the socio-economic well-being of members through investment in viable projects;
(c) To create a pool of fund for lending purposes to members;
(d) To provide opportunities for members for thrift savings;
(e) To arrange regularly for bulk purchase of essential commodities as and when necessary;
(f) To provide goods and services to members at reasonable cost and;
(g) To organize regular membership education.

In case of death or permanent disability, every member is allowed to nominate one person who can claim his/her interest. Membership can also be terminated either by death, withdrawal after 3 months notice in writing to the secretary, by expulsion from the society and cessation as an employee of FUTA.

**Material and Methods**

The subjects of this work are the borrowers (members of FUTAASCOOPS), and the Cooperative Officers. They also constitute the respondent groups for the study area. The sample comprised 200 individuals' borrowers randomly drawn from sample of 311 borrowers i.e. total number of applicants who have succeeded in obtaining loan for residential housing development purpose from FUTAASCOOPS. The sample size adopted was 64.31% of the sample frame and it is a manageable size. A total of 200 questionnaires were distributed in August, 2006. While 185 were duly completed and retrieved representing 92.50% response rate which was an impressive rate. The time frame adopted for data collection was between years 2003 to 2006; this period fell within a democratization experiment with governance in Nigeria. It was characterized with experimentation with various reforms in nearly all sectors of the economy by Obasanjo led administration. The preference of respondents to cooperative resource pooling for residential property development finance was the focus of measurement and questionnaire. The technique of analysis in this paper is proportion method. Proportion method is a statistical means of representing the significance of variable relative to all other variables under consideration. This statistical method represented the total score of the variable divided by the overall sum of scores of all variables being considered and it is usually expressed in percentage. Frequency analysis is also used.
**Results and Discussion**

From the cursory look at the comparative statistical data of financial performance of the FUTA Academic staff cooperative multipurpose society for three years as given below:

Table 1.0: Three years comparative statistical data of the cooperative

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership Saving</td>
<td>N20, 087,906.00</td>
<td>N33,132,495</td>
<td>N60,950,314</td>
</tr>
<tr>
<td>Membership Share</td>
<td>118,800.00</td>
<td>538,900.00</td>
<td>1,365,600</td>
</tr>
</tbody>
</table>

*Source: Audited Account of the 4th Annual General Meeting of this Cooperative Society.*

We observed from table 1.0 above that there was rising trend in membership saving of the cooperative society from just N20, 087,906.00 in 2003/2004 financial year. Similarly membership share rose form 118,800 to 1,365,600 within the same period. This showed an indication of an increased interest in thrift and saving culture among members. Also indicated was the workers interest in thrift and cooperative resources pooling as a sure means of financing home-ownership and development. The age distribution of member of the society is presented in table 2.0 below:

Table 2.0: Age distribution of member of the society

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 35 yrs</td>
<td>22</td>
<td>11.89</td>
</tr>
<tr>
<td>35 yrs - 50 yrs</td>
<td>81</td>
<td>43.78</td>
</tr>
<tr>
<td>51 yrs - 60 yrs</td>
<td>63</td>
<td>34.06</td>
</tr>
<tr>
<td>61 yrs and Above</td>
<td>19</td>
<td>10.27</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

*Source: Field Work, (2006)*

That majority of the members of this cooperative society (that is members whose age are below 35years and 50years is 55.69%) are still in the prime of their productive age. Only about 10.27% of the total survey represents members whose ages are above 61 years old.

The study also looks into the limit of loans granted to members as shown in table 3.0

Table 3.0: Amount of loans obtained

<table>
<thead>
<tr>
<th>Loan obtained</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than N300,000</td>
<td>25</td>
<td>13.51</td>
</tr>
<tr>
<td>N300,000 to N500,000</td>
<td>105</td>
<td>56.76</td>
</tr>
<tr>
<td>N600,000 to N1,000,000</td>
<td>35</td>
<td>18.92</td>
</tr>
<tr>
<td>N1,000,000 above</td>
<td>20</td>
<td>10.81</td>
</tr>
</tbody>
</table>
The tables 3.0 showed the analysis of the limit to which loans are granted to members. The analysis of this table further revealed that only about 10.81% of the surveyed members obtained loans that are more than N1,000,000 at a time. This amount is very small considered to the capital-intensive nature of property development. However, it is still the relatively accessible form of loans to members. The poor capital base of the cooperative society made it very difficult for members to obtain more loans at a given time. This is as a result of the fact that a member is only entitled to twice his saving as a loan limit. The guarantor whom must also be financial member of the cooperative is given the responsibility to monitor the proper utilization of loan for purpose for which it is granted.

Members overcome this problem by applying for loans up to the maximum of about five times before they are able to complete their residential development. The study also revealed that members also relied on other means of raising funds to supplement the loans obtains from cooperative society. The other exploited sources in addition to cooperative loans are personal savings, sales of shares and rarely do they get loans from financial institutions because of their inability to comply with the stringent conditions attached with these loans. The study also revealed the relative popularity of preference for obtaining cooperative loans. They reasons given for this study are as follows:

**Table 4.0: Reasons for choice of cooperative loan for Housing Development**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of processing of application</td>
<td>61</td>
<td>32.97</td>
</tr>
<tr>
<td>Low interest on loan</td>
<td>46*</td>
<td>24.86</td>
</tr>
<tr>
<td>Timeliness of granting the loan</td>
<td>45</td>
<td>24.33</td>
</tr>
<tr>
<td>Ease of repayment of loan from source</td>
<td>33*</td>
<td>17.84</td>
</tr>
<tr>
<td></td>
<td>185</td>
<td>100.00</td>
</tr>
</tbody>
</table>

*Source: Field Survey (2006)*

Members as very easy and devoid of any complicated process value the cooperative loan grant and its repayment structures. What is essential is that you are an academic staff of the institution, and you subscribed to its membership. The granting of loans to members unlike convectional financial institutions, there are no special collateral security neither is there any need for deposition of building plan, tax clearance or evidence of land purchase or procurement of certificate of occupancy on the said property before the loan is advanced. The interest rate changed is relatively low (less than 10%) as compared with convectional financial institution.

**Conclusion**

The cooperative society is a sure alternative source of funding residential property development by members. The small capital base of this society made it difficult for members to obtain the required loans to finance their property development at once. It was however, observed that members applied for the cooperative society loans for upward of four to five times before they are able to complete their house project. This financial source is still preferred by members to convectional financial institution loans that its procedure of procurement is very cumbersome and sometimes inaccessible for intended users of such loans. Due to the
limited scope of fund available to the FUTA staff cooperative multipurpose society, it is suggested that the society should facilitate a way of organizing its members to join the National Housing Fund.

The National Housing Fund is the financial component of the strategic initiative of the National Housing Policy to nationalize the intervention of government in the housing delivery process through a deliberate collaboration of the public sector with the private enterprises (Akinwale, 2000). The fund was established by Decree No. 3 of 1992 and entrusted the management of the National Housing Fund to the Primary Mortgage Institutions (PMIs) the Primary Mortgage Institutions would in turn grant mortgage loans on long-term basis to contributions of the fund. The interest rate on such loans as stipulated by Decree No. 3 of 1992 was pegged at 9%. However, in reality this rate varies according to the dictate of the economy. Other suggestions are that members should embrace simple, open house design and make use of locally fabricated building components to reduce the cost of construction of such buildings. The interest rate paid on loan, which at present is pegged at 8%, could still further be reduced to 5% and the cooperative society should work out how to raise more funds through equity investments and share investments on behalf of the society. Finally, members should be made to take more than twice his or her saving as a loan limit since the cooperative society used to declare surplus at the end of the financial year.

Reference
UNCHS (Habitat) (1994). Case studies in innovative housing finance institutions. UNCHS, Nairobi.


REAL ESTATE FINANCE THROUGH THE CAPITAL MARKET:
An Appraisal of UACN Property Development Company Plc Initiative

By

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ABSTRACT
Obtaining funds for real estate development have consistently become a nightmare in Nigeria due to certain factors including the absence of viable and well-organised real estate development finance system. The shortcomings of the existing sources of real estate finance are manifold but the most critical ones bother on the fact that the consolidated wealth of real estate developers is hardly enough in contrast to the nature of property development which is capital intensive or the debt funds from money markets that are unable to grant long-term credits due to the nature of their operation; Central Bank regulations to maintain stipulated liquidity ratio and meeting with cash withdrawals of their customers at short notice. In the light of the foregoing, this paper focused on the capital market as a veritable source of long term real estate finance in Nigeria since this market had, over the years, served as a veritable source of financing real property developments in some of the developed nations such as the United Kingdom, United States and Germany. In Nigeria, the UACN Property Development Company Plc (a subsidiary of UACN conglomerate) has taken a bold step against all odds at exploring the Nigeria capital market in raising the much needed funds for their real estate development activities and this has evidently paid off for the Company going by their current huge real estate investment portfolio. With the accomplishment of UACN Property Development Company Plc, the study came to the conclusion that capital market has now become a good alternative (other than banks) where long-term real estate development funds could be obtained and thus recommending it to the would-be real estate investors.

Keywords: Real estate finance, capital market.

BACKGROUND OF STUDY
The shortcomings of the existing sources of real estate finance are manifold and the most critical ones bother on the fact that the consolidated wealth of promoters and developers is hardly enough in contrast to the nature of property development which is capital intensive or the debt funds from money markets that are unable to grant long-time credits due to the nature of their operation; Central Bank regulations to maintain stipulated liquidity ratio, meeting with cash withdrawals of their customers at short notice and the worsening housing shortages in our rural and urban centers cum the deteriorating public infrastructures. These stated factors had initiated the idea of examining the capital market as a viable strategy and cardinal plank of restructuring the real estate financing system in Nigeria. The UACN Property Development Company Plc (UPDC) which was chosen as a case study has taken a bold
step against all odds at exploring the Nigeria capital market to raise the needed finance for her real estate investment portfolio. The exposition of her success as well as the challenges encountered by the company is thus meant to encourage the intending investors cum real estate developers to embracing the capital market funds as a better alternative.

**Aim and Objectives of Study**

This study appraised the possibility and the appropriateness of the Nigerian capital market as a veritable source of raising long term funds for real estate development using the UACN Property Development Company Plc (UPDC) as a case study. In achieving this aim, the following objectives were sought:

- To appraise UPDC real estate investment strategies cum their investment portfolio through the use of funds derived from the capital market and the challenges faced in the process.
- To offer suggestions that will encourage the patronage of the capital market in raising the much needed long term funds for real estate finance.

**LITERATURE REVIEW**

**An Overview of Real Estate Finance in Nigeria**

Lawanson (1998) defined “finance as the generally acclaimed power by which all relevant and necessary materials and human resources could be mobilized towards achieving the goal of development or project realization and actualization”. The first conscious effort made at real estate financing in Nigeria was in 1956 when the Commonwealth Development Corporation in conjunction with the Central Government and Eastern Regional Government formed the Nigerian Building Society (NBS) with a capital base of N2.25 million to provide mortgage loans. However, their mortgage operations did not achieve much because of limited financial resources and poor response of the public. During the same year, the colonial government introduced the African Staff-Housing Fund, which was meant to encourage African civil servants to own their own houses.

In 1972, the Federal Government bought the entire equity interest held by the Commonwealth Development Corporation in the Nigeria Building Society, and this led to change of name to Federal Mortgage Bank of Nigeria by Decree No. 7 of 1977 with the capital base of N20 million. At the formative stage of the Housing Policy in 1985, the issue of housing finance was critically examined by the Committee set up to produce a draft of the policy document. Their conviction was that without a well organized and efficient housing finance, it would be difficult to mobilize substantial finance resources for channeling funds into the housing sector. To rectify this abnormally, the Committee in its wisdom, recommended to the government that the panacea to a virile housing delivery system which is capable of being equally sustained by a virile housing financial system, is the creation of a two tier financial structure at the apex of which will be the Federal Mortgage Bank of Nigeria which will concentrate on wholesale lending and decentralized network of primary mortgage institutions which will concentrate on retail lending. The Federal Mortgage Bank of Nigeria (FMBN) is the apex and regulatory body in this financial sub-sector over the years until recently when this role was fully assumed by the Central Bank of Nigeria.

The above review of the real estate finance system before 1990 clearly revealed the under
developed nature of real estate finance institutions in Nigeria. Just as land plays a vital role in real estate construction, so is the availability of finance. However, the observation is that paucity of savings; limited mortgage institutions and level of poverty contribute to the financial constraints which often cripple the aspiration of most people of the developing world yearning for shelter. These factors are well too typical in Nigeria. According to Lawson (1998), the participation of private financial institution in the provision of real estate credit has been very minimal judging from the small percentage set aside by these institutions from their loanable funds. The prevalent reluctance of the commercial banks to infuse more capital into the real estate sector is because investment funds are naturally drawn to those opportunities which yield the highest returns against a given degree of risk. Therefore, there was an urgent need to overhaul the entire real estate finance machineries so as to improve their efficiency and to widen the coverage of their beneficiaries.

Strategies for Investing in Real Estate through the Capital Market

The Nigerian capital market is fast becoming very vibrant, dynamic and one that is characterised by an ample means of assimilating the multi-various productive sectors of the economy, that is, the ones interested in using the pool of resources the market have to offer. In achieving this objective, there are various possibilities cum approaches that can be harnessed for the real estate capital market investment. Some of these approaches are outlined below:

a) **The purchase of shares:** The capital market funding of real estate development can be achieved by the purchase of either ordinary or preference shares on the floor of the stock exchange prior to its certification of fitness for public issues by the Securities and Exchange Commission (SEC). The initial face value of the shares are fixed, thus allowing for individual; institutional or organisational purchase as regards desirability of units of stocks of shares which automatically entitles the purchase to part-ownership of the property company. The purchase of shares as illustrated above can be made in two ways vis-à-vis:

(1) **Corporate-image based:** This strategy involves the company seeking or raising shares for public purchase, engages the use of track records of general business in promoting good subscription. The bio-data of major directors as well as promoters are made public with the intent of convincing the prospective investors of the credibility of their aim. In relation to the case study i.e. the UACN Property Development Company Plc uses the image of the well-established UAC conglomerate to effect a good subscription of its first offers of shares to the public for purchase on October 6, 1997. The corresponding initial or face value of the company was dependent on the financial strength, activities, as well as operations of the parent company.

(ii) **Project success based:** This approach entails the utilization of the records of the past and existing successful projects undertaking by the firm in luring prospective investors into investing thus ensuring project finance via
pooling of public funds. Investors who purchased the shares then become part-owners of the project and not necessarily the company owner. An example of real estate development company with successful project records is the Wemabod Estate Ltd. This company has numerous developments spanning all-over south west of Nigeria notable among these are the Western House, Lapal House, Cocoa House in Ibadan and other numerous residential properties. Other related companies include the Stallion Properties, Ibile Properties and Ridgeway Properties among others.

b) **The acquisition of debenture and loan stock:** Debentures, which are long-term, credit paper on loan capital like stocks and loan bonds with a corresponding long lifespan to the nature of longevity of the property, is yet another strategy through which funds from the capital market could be tapped for real estate development. The arrangement is such that investors are entitled to an annual fixed interest on their investment while the payment of principal is at a future date.

c) **The property unit trusts:** The operation of a property unit trust involves the mobilisation of funds from different small-time investors called “unit holders” and diversification of such funds in different building projects, and by so doing, spread the risk and uncertainty of profitability cum viability problems over all the properties and projects involved in their investment portfolio. A trustee and a manager with the everyday responsibility of scheme management owe a fiduciary duty to the various unit investors. Some of the developed nations practiced this real estate finance strategy, for instance in Britain, there is the Authorised Property Unit Trust (APUTS).

THE CASE STUDY: UACN PROPERTY DEVELOPMENT COMPANY PLC

**The General Overview of UACN Property Development Company (UPDC) Investment Portfolio**

The UACN Property Development Company Plc was incorporated in Nigeria on 6th October 1997 as a public limited liability company. The initial authorized share capital of five hundred thousand naira (₦500,000) composing of 1,000,000 ordinary shares of 50 Kobo each, of which ₦125,000 made up of 250,000 ordinary shares was issued and fully paid-up. The arrangement was made with the parent company of UACN Property Development Company Plc, that is, the UACN conglomerate. The scheme involved the outright transfer of the investment properties previously owned by UACN conglomerate to UACN Property Development Company Plc. *Investment properties in relation to the above mentioned connotes all the properties that are not been utilized for its day-to-day operations and all assets, liabilities and undertaking relating to such properties.*

The scheme was arranged with the intent and purpose that the transfer of the bulk of the property portfolio to a dedicated subsidiary
would allow greater flexibility as well as freedom to arrange the property portfolio for maximum returns. More so, it is in line with the UACN conglomerate's long-term strategy of eventually evolving into a holding company with interest in several autonomous business units. In the process of the scheme, UACN property's authorized share capital was increased from five hundred million (500,000,000) made up of (1,000,000,000) one billion ordinary share of 50 Kobo each, to accommodate the issue of (999,750,000) Nine hundred and ninety nine million seven hundred and fifty ordinary shares of 50 Kobo each in UACN properties to UACN conglomerate. The issue were in consideration of the transfer to UACN property of UACN's (conglomerates) investment properties valued at four billion, eight hundred and thirty million, seven hundred and sixty three thousand, five hundred Naira (N4,830,763,500.00) as at 30th June, 1997 alongside with all the assets, liabilities and undertakings relating to such properties.

The shareholders of both the parent company (UACN) and the new subsidiary (Property Development Company) on 21st January, 1998 approved the scheme and hence the arrangement became operative on 16th February, 1998; that was when the Federal Republic of Nigeria's High Court sanctioned the scheme and the Company thus commenced operations on that date with target on the development, management and maintenance of residential (luxury apartments in choice locations for the medium and high income class) and commercial properties.

The Need for the Capital Market Approach
The primary aim cum need for the sourcing of finance from the capital market by UACN Property Development Company Plc (UPDC) derives vividly from the words of the Managing Director of the Company (Mr S. Mayaki) during one of the Company's Annual General Meetings, he said and I quote,

“Indications are that our country with a large and growing population, with rich natural resources, its citizens will continue to look for accommodation. Thus creating a publicly quoted company has conferred greater flexibility and freedom on the property outfit to manage its portfolio for maximum returns. Through this scheme, UACN Property Development Company Plc will have a better return on assets than hitherto and consequently enhanced returns on investments to shareholders. It is equally in line with the UAC's long-term strategy of eventually evolving into a holding company with several autonomous business units”.

Furthermore, he outlined the following as being the reasons for seeking public quotation:

(a) **To enhance ability to buy and sell shares**: Pool of funds with a relative cheap cost of fund is made available to the company, as new investors will have direct access to purchase the shares rather than rely on private negotiations, which involves difficult arrangement.

(b) **To increase capital base**: The UPDC Plc aim to raise capital by seeking quotation on the floor of the stock exchange. This becomes possible as a wide range of able and prospective private and institutional investors begin to buy and sell the shares of the company thereby creating fund for the use of the Company.
(c) **Growth through acquisition:** By seeking quotation UPDC Plc intends to enjoy a corresponding growth. It must be borne in mind that opportunities exist for quoted companies either at the second tier security market or the first tier security market, which the company belongs. Quoted companies can issue their shares in return for equity interest in other business. The resultant fact remains that the company is able to maintain a healthy cash flow position as they expand their business transactions.

(d) **Valued and corporate image:** The UPDC Plc equally sees the need for seeking quotation to derive from the corporate image which the parent company UAC Nigeria Plc already has. A public quoted company is seen as a serious, stable and disciplined one with a mark of maturity. This status adds respect to the Company and consequently, creditors, investors and the financial community view them with esteem.

(e) **Survival and Continuity:** By going public, the UPDC Plc is assured of survival and continuity even on the event of the founder's death. This is because the ownership of the publicly quoted companies rest in the hands of the shareholders.

(f) **Spread of ownership:** The ownership base of publicly quoted companies is spread as it made its entrance into the capital market. The subscription on “offer bulletin” under the purpose for the offer; “the purpose of the offer is to enable UACN sell 54% of its existing shareholding in UACN property to the general public. This sale is in line with UACN's long-term strategy of eventually evolving into a holding company with interest in several autonomous business units.

**The Utilisation of Shareholders' Funds and Strategic Portfolio Management in UPDC**

When the property division of the UAC conglomerate is about to go public, the Company's Management empowered a team of experts to chart a new course for UPDC. The major task of the team was to evolve a business strategy that will ensure the constant growth of the Company (UPDC) through strategic investment/divestment of the shareholders funds. The activities of the Team included the appraisal of the existing property portfolio of the company was analyzed and classified. Having done this, the following investment strategies were formulated:

- **Strategy 1:** Increase investments in the residential sub-sector and by implication, divest to the extent of the commercial properties with less than 5% returns, from the commercial sub-sector.
- **Strategy 2:** Limit new investments to Lagos, Port Harcourt and Abuja and significantly divest from other towns in line with the other strategies. The main reason behind this resolve is because the existing property classification analysis revealed that the investments in certain towns in the country had remarkable higher annual returns than those in other towns without an increase risk factor.
- **Strategy 3:** Sell all properties with annual returns of less than 5% except those with redevelopment potentials. To this end, the focus of the company's investment will be in the residential sub-sector (especially the luxury apartments and housing estate class).
- **Strategy 4:** “Build and Sell” more than “Build and Let”. Financial analysis showed that a “build and sell” approach
would earn much higher returns than a “build and let” approach and management risk greatly minimised.

- **Strategy 5**: Operate in the high net worth property market (luxury apartment, upper middle and middle income class housing estates and high profile commercial buildings. A risk return analysis of the various property (both commercial and residential) types revealed that the incidence of loss of earnings on account of default in payment of rent in the case of 'build and let' properties was more within the low-income bracket like low-cost housing schemes, shops, commercial buildings, tenement buildings etc.

- **Strategy 6**: Hold at least 70% investments in the residential sub-sector and not more than 30% in the commercial sub-sector since market survey and analysis showed that the residential sub-sector churns out a much higher return for any given risk level than the commercial sub-sector. Furthermore, sensitivity analysis reflecting the risk, return and weighting of the various possible investments greatly favoured this 70:30 investment in residential and commercial properties respectively.

- **Strategy 7**: Provide utilities facilities (such as water supply, electricity, road network, recreational and security services etc.) in all projects to ensure comfort and good quality of life to the end users of their products. Market survey and analysis revealed that properties fitted with these facilities earn three (3) times as much annual return as those without facilities and in addition, they have their capital appreciation in geometrical progression while those without facilities move in arithmetic progression.

- **Strategy 8**: Manage the facilities in all housing projects through on-site team in order to prevent these facilities from getting run-down; command good price in the market and to ensure continued capital appreciation.

To this end and in the realization of the Company's investment objectives, the following categories of properties were carefully invested in:

1. **Residential Properties**: The Residential Properties Unit of the Company (UPDC) is responsible for the development and management of homes for individuals and corporate clients in different market strata of the society. The Unit offers distinct products in the following four categories:
   a) **Luxury Apartments**: These are fully serviced apartments, duplexes and town houses located in exclusive areas which offer class, comfort, and conveniences that meet the needs of high net worth individual and multinational corporations. Some of the properties in this category include 4/8 MacDonald Road, 8, Thompson Avenue, 51/55, Glover Road, 5, Bourdillon Road, all in Ikoyi, Lagos. Similar developments are also proposed for exclusive areas of Abuja and Port-Harcourt.
   b) **Premium Homes**: These are fully serviced apartments, duplexes and detached houses located in pleasant planned residential estates. Premium Homes offer comfort and conveniences to meet the needs of...
senior management of multinational corporations, banks, civil servants and individuals who fall within the middle-income level. Some of the estates in this category include Cable Point Estate, UPDC Lekki Estate, Pinnock Beach Estate, all in Lekki, Lagos. Similar developments are in progress or proposed for locations in Abuja and Port Harcourt and other developing cities.

c) Classic Homes: This category includes bungalows, duplexes, terraces and detached house located in decent living environment with provision of basic facilities. They are mostly developed for the middle class. An example is Manor Gardens Estate, Lekki.

d) Residential Investment: This category include rented properties and serviced estates in Ikoyi and Lekki areas, ensuring that comfortable living environment is provided, complete with amenities such as security, back-up power supply, borehole and diverse recreational facilities including swimming pools and club houses.

(2) Business Properties: The products in this category included the following:

a) Business properties: These comprise of office spaces, shops and warehouses and are mainly located in central business districts of Lagos, Abuja, Port Harcourt, Kaduna and Kano

b) Rest Houses: These provide temporary accommodation for business travelers and holiday makers. Presently, UPDC has two rest houses located in Ibadan and Port Harcourt.

These classes of properties were chosen in relation to the nature of the country's economic and population growth with an apparent view that, unviable developments with no potential for redevelopment (no yields) will be disposed off and the capital sum realized will be re-invested into viable developments in prime locations in cities across the country. In addition, the company equally intended to focus on the acquisition and development of tracts of lands for sale or rental incomes with concentration all over the countries in prime and viable locations like Lagos, Abuja and Port-Harcourt among others.

The UPDC property investment portfolio (existing) was equally aimed to be supported with continuous redevelopment and high quality maintenance of buildings and related services. In addition, value enhancement cum earning capacity of the Company's properties is to be ensured by readjusting its property portfolio to yield maximum return. In summary, UACN Property Development Company Plc (UPDC) has focused operations on the development, management, and maintenance of residential and commercial properties.

The Achievement of UPDC over a Five Year Period (2002 – 2006)

It is worthy of note that the Company has taken many giant strides since commencing business in 1998. Some of the highlights are as follows:

- As at December 2006, the Company has over one billion (1,099,999,997) authorized shares fully subscribed to by 29,006 shareholders.
- The Shareholders' funds cum the net assets of the Company grown from about N6.3 billion in 1999 to about N21 billion at the close of business in December 2006.


- Profit after tax grew from N154,652,000 in 1999 to N962,935,000 by the close of business in December 2006.
- Earnings per share rose from N0.15 in 1999 to N0.88 in 2006.
- Dividend per share equally rose from N0.14 in 1998 to N0.35 in 2006 which is 15kobo less than the N0.50 share price (nominal value) of the Company!

See further details of UPDC’s achievements below:

### Five Year Financial Summary (2002 – 2006)

<table>
<thead>
<tr>
<th>Balance Sheets as at 31 December</th>
<th>2006 N’000</th>
<th>2005 N’000</th>
<th>2004 N’000</th>
<th>2003 N’000</th>
<th>2002 N’000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share capital</td>
<td>550,000</td>
<td>550,000</td>
<td>500,000</td>
<td>500,000</td>
<td>500,000</td>
</tr>
<tr>
<td>Share premium</td>
<td>4,252,648</td>
<td>4,252,648</td>
<td>4,320,148</td>
<td>4,320,148</td>
<td>4,320,148</td>
</tr>
<tr>
<td>Capital reserve</td>
<td>385,000</td>
<td>275,000</td>
<td>200,000</td>
<td>450,000</td>
<td>350,000</td>
</tr>
<tr>
<td>Proposed dividend</td>
<td>14,320,833</td>
<td>10,689,095</td>
<td>11,014,178</td>
<td>7,971,804</td>
<td>8,390,835</td>
</tr>
<tr>
<td>Revenue reserve</td>
<td>1,472,773</td>
<td>1,048,098</td>
<td>446,202</td>
<td>468,121</td>
<td>820,491</td>
</tr>
<tr>
<td>Shareholders' funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority Interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment of Funds</td>
<td>20,981,254</td>
<td>16,814,841</td>
<td>16,480,528</td>
<td>13,710,073</td>
<td>14,381,474</td>
</tr>
<tr>
<td>Fixed assets and Investment Properties</td>
<td>21,003,442</td>
<td>16,806,691</td>
<td>16,489,958</td>
<td>13,717,874</td>
<td>14,381,474</td>
</tr>
<tr>
<td>Long Term Investments</td>
<td>28,099,025</td>
<td>21,117,423</td>
<td>18,993,780</td>
<td>15,361,233</td>
<td>14,295,466</td>
</tr>
<tr>
<td>Current assets</td>
<td>3,879,789</td>
<td>2,372,500</td>
<td>1,672,500</td>
<td>1,400,000</td>
<td>1,259,586</td>
</tr>
<tr>
<td>Net Assets</td>
<td>8,018,071</td>
<td>3,664,971</td>
<td>4,806,788</td>
<td>1,910,583</td>
<td>748,741</td>
</tr>
<tr>
<td>Profit and Loss Accounts for the year ended 31st December</td>
<td>21,003,442</td>
<td>16,806,691</td>
<td>16,489,958</td>
<td>13,717,874</td>
<td>14,381,474</td>
</tr>
<tr>
<td>Turnover</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit before taxation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit after taxation</td>
<td>5,484,782</td>
<td>4,549,953</td>
<td>3,990,283</td>
<td>3,286,589</td>
<td>1,739,898</td>
</tr>
<tr>
<td>Minority Interest</td>
<td>1,368,898</td>
<td>1,003,069</td>
<td>665,2551</td>
<td>1,063,654</td>
<td>846,973</td>
</tr>
<tr>
<td>Profit after tax and minority interest</td>
<td>(406,503)</td>
<td>(168,810)</td>
<td>(207,173)</td>
<td>(145,504)</td>
<td>(106,698)</td>
</tr>
<tr>
<td>Proposed Dividend</td>
<td>3,712</td>
<td>8,650</td>
<td>(8,929)</td>
<td>(7,300)</td>
<td>-</td>
</tr>
<tr>
<td>Retained Profit</td>
<td>966,107</td>
<td>842,910</td>
<td>449,153</td>
<td>910,850</td>
<td>740,274</td>
</tr>
<tr>
<td>Earnings per share (kobo)</td>
<td>(385,000)</td>
<td>(275,000)</td>
<td>(200,000)</td>
<td>(450,000)</td>
<td>(350,000)</td>
</tr>
<tr>
<td>Dividend per share (kobo)</td>
<td>581,107</td>
<td>567,910</td>
<td>249,153</td>
<td>460,850</td>
<td>390,274</td>
</tr>
<tr>
<td>Net assets per share (Naira)</td>
<td>88</td>
<td>77</td>
<td>45</td>
<td>91</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>25</td>
<td>20</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>19.1</td>
<td>15.3</td>
<td>16.5</td>
<td>13.7</td>
<td>14.4</td>
</tr>
</tbody>
</table>