

Environmental Implications of Non-Compliance with Road Setbacks Standards in the Awka Capital Territory

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Abstract: *This study assessed the environmental implications of non-compliance with road setbacks standards in the Awka capital territory, with a view to providing a workable template and modified framework for solving the problems of non-compliance with road setbacks, so as to achieve sustainable urban environmental and socio-economic development for Anambra State. To achieve the stated aim, the study determined the environmental effects with four indicators of social, economic, physical, and health. From the findings, the associated environmental implications with their four indicators of social, physical, economic and health of non-compliance with road setbacks in ACT had been determined and they are significant through non-professionals and professionals. It is therefore noteworthy that the corruptions among planning authorities and failure of law enforcement agents are the brain behind the causes and environmental implications respectively on non-compliance with roads setbacks in the siting of structures in a given urban environment.*

Key Words: *Non-compliance, Road, Setbacks, implications, and Environment.*

1. INTRODUCTION:

In spite of the growing awareness of modern-day planning and number of planners, physical development in metropolises of less developed countries remains a display of chaos and disorder. This, as manifested in urban sprawl, poor access to dwellings, bad drainage, housing congestion, uncontrolled and increasing density of physical development, among many other problems, characterize the high-density areas of Awka Capital Territory. Although such measures of development control as the application of minimum lot sizes, standard on windows, doors, height of buildings, road widths, among others, have been introduced to control buildings and general appearance of cities (Olajuyin and Olayiwola, 1985), the problem of undesirable nature and pattern of development in high-density areas of ACT is still a serious one. In land use planning, a setback is the distance which a building or other structure is meant to leave from a street or road, a river or other stream, a shore or flood plain, or any other place which is deemed to need protection. Depending on the jurisdiction, other things like fences, landscaping, septic tanks, and various potential hazards or nuisances might be regulated. Setbacks are generally set in municipal ordinances or zoning regulators. Setbacks along state, provincial, or federal highways may also be set in the Laws of the State or province, or the Federal Government (Allen, 1995).

Transport infrastructural development remains a major tool for achieving the aspirations of the newly introduced economic principles of the Federal Government of Nigeria, the National Economic Empowerment and Development Strategy (NEEDS). However, the condition of Nigerian roads has not ceased to amaze discerning observers, while effect; the roads have been ranked among the worst in the world. A significant portion of post-independence studies on transport systems have been devoted to examination of successive Nigerian government's budgetary allocations and development in the transport sector in general (Iweze, 2011). Increasing level of traffic congestion is an inescapable result of strong economic activity and life in urban areas. Realistically, large metropolitan regions lack the resources, citizen support, and ultimately the space to provide for uncongested automobile travel. About half of congestion delay occurs in areas where demand has reached or exceeded capacity; the other half is due to incidents including weather, accidents, stalled vehicles and roadside distractions. The reason for the pattern may not be farfetched. The areas do not only provide abodes for the poor natives who hold tight to extended family properties, but also provide locations of relatively high accessibility for businesses, cottage industries and services. For these, developers- individuals, corporate bodies, and even government tend to develop or redevelop properties in the area to the fullest, with the ultimate aim of maximizing the use of space regardless of the whether or not such an action is in the interest of physical planning. Their actions are made more manifest in the process of conversion and redevelopment of properties to accommodate more businesses or less importantly more dwelling units. Thus, major settlements in Awka Capital Territory have not only had some form of urban sprawl and decay, their growth continues to be stunted basically because most structures erected in the city have not conformed with the stipulated setbacks from the roads.

1.1. Objectives:

The aim is achieved through the following objective

- i. To determine the environmental implications (social, physical, economic and health) of non-compliance with road setbacks in the Awka Capital Territory

1.2. Research Hypotheses:

The following hypotheses were postulated to guide this study:

H₀: The environmental implications/effects of non – compliance with road setbacks along the three road types in ACT are not significant

1.3 Research Method:

The study was conducted by mainly through the survey method and interview of Professionals and non-professionals in ACT, Awka in Nigeria. Secondary data were obtained through books, journals, and internet. Empirical works of other scholars were consulted. A simple size of 400 was obtained from the population of 778,061 at 5% error tolerance and 95% degree of freedom using Yamane's statistical formula 385(96.3%) of the questionnaires distributed were returned while 15(3.7%) of the questionnaires distributed were not returned. The questionnaire was designed in Likert scale format. The researchers conducted a pre-test on the questionnaire to ensure the validity of the instrument. Data were collected using relevant techniques (survey design, field measurements, ARC GIS 10.4 software, and Maps). One sample T - Test was used to test the hypothesis

2. LITERATURE REVIEW:

2.1. Environmental Implications of Non-compliance with Road Setbacks:

1. Inadequate and Deteriorated Road Networks and Walkways

In the findings of Michael (2014) who worked on traffic management in a rapidly growing city of Ado-Ekiti, Nigeria using Geo information techniques and field survey method, the bastardization of road infrastructures and established road setbacks is caused by poor road conditions and network evident in the predominance of cross junctions. From the GIS outputs, (results and generated maps) it is glaring that many structures fall within the distances of road setbacks in the study area. The map reveals that those buildings that fall within buffer zones of all existing roads in the study area of up to 100m should be demolished and relocated and this has substantial economic implications. This will give adequate consideration for aesthetics and safety. The study uses its findings to suggest effective traffic management strategies to address identified problems.

2. Loss of Lives and Properties

Weiner (2003) in his study of the global epidemic of illegal building and demolition and its implication for Jerusalem, using field survey method and critical review of works of earlier researchers, stated that the global situation of non-observance of established setbacks in erecting of structures gave room to the outburst of the exercise of demolition of illegal structures all over the world, which has great economic implications. The Citizens News Online (2015) on 18th June 2015, reported that the Abia State government has issued warning to Aba residents in a press release signed by the Chief Press Secretary to the Governor, Godwin Adindu, that the government will in seven days, commence demolition of illegal structures in the city to reclaim encroached road setbacks. The Government of Abia State was by this notice informing all property owners in the Aba metropolis and the general public that, in line with the government's commitment towards the rebuilding of the city of Aba, which necessitated the establishment of the Aba Urban Renewal Office, the agencies of Government will commence a demolition exercise of all structures, property, stalls and shops which encroach into the road, seven days from this announcement. The properties to be demolished include but not limited to buildings on service lanes, illegal shops, illegal fences and such other structures that constitute a blockade to the free flow of traffic and drainage. In the words of Adindu, "you cannot make omelet without breaking eggs. If we must have the Aba city of our dream, we must be ready to make the utmost sacrifice. Government therefore calls on all concerned to take appropriate measures before the arrival of the bulldozers". The announcement greeted the ears of the owners and occupants of these illegal structures with great shock as their responses online shows the pains in their hearts, while on the side of the government there is huge financial implication of the demolition exercise.

3. Economic Effects:

Will (1991) explained that a city had to pay a company thousands of dollars to tear down and haul away an illegally built second-story addition to a residence in United States of America. Olomola, (2003) Stated that inadequate provision of decent transport infrastructure and services provide a basis for explaining the incidence of poverty across various Nigerian communities in both urban and rural areas. It is clearly established that inadequate transport facilities and services, as well as the constraints imposed on the mobility and accessibility of people to facilities such as markets, hospitals and water sources have grave implications on deepening poverty levels. Thus, he recommended that there is need for urgent policy measures to address the prevailing travel and transport problems. According to him, the importance of transport infrastructure to a nation cannot be overemphasized as efficient transport infrastructure facilities act as catalysts for development. There is therefore cause for concern while considering the transport infrastructure base in Nigeria today which compares unfavorably with those of several African nations both in terms of quality and service

coverage. In particular, the rural areas, where the bulk of the population resides, are largely deprived of basic pieces of transport infrastructure.

In the same vein, Onyese (2011) in the Daily Times of 15th November 2011 reported that Abuja Environmental Protection Board (AFPB) had carried out demolition and evacuation exercise in Nyanya and its environs. The News (2013) reported that demolition of illegal structures by the state government in Sokoto would continue until the city is sanitized. Also Ogwuda (2013) in the Vanguard of 13th February 2013 reported that the Delta State governor ordered the demolition of illegal structures in Asaba especially those structures blocking natural waterways and drainage. Each of these reports kept hammering on the associated economic losses and other life threatening effects.

In Nigeria, many publications have also taken place on demolition of illegal structures. For instance, Odogwu (2013) in his article published in the Nations News Online of February 13, 2013 titled “Obi to Demolish Illegal Structures to Save Roads” reported that there was tension in Onitsha (Anambra State) when the state Governor ordered the recovery of roads and streets encroached upon by illegal structures in Nkpor. According to him properties worth millions were marked to be demolished, while affected people were moving from one government office to another looking for ways to avert the sledge hammer. Personal interviews with some of the victims of the demolition process showed that they were emotionally and mentally traumatized, while some had their businesses on the line. Others were faced with the problem of emergency relocation all of which are part of the dangers of not complying with established building construction setbacks. Ajayi, Ojo, Olukolajo and Oyetunji (2013) wrote on the impact of road expansion projects on the informal sector in Akure, Ondo State, Nigeria. In their report, they stated that economic impacts of road expansion and demolition of structures encroaching into road setbacks could include loss of businesses and customers, induced need for capital investment, and high opportunity cost losses. While by-pass roads can overcome some problems of conflict between road use and community welfare, they may create other problems. On the positive side, by-pass roads reduce the immediate impacts of traffic on the community, and local commercial activities sometimes flourish as a result. On the negative side, communities may fear a loss of business from the diversion of traffic, and some community activities may “migrate” to the new route, potentially changing existing land use patterns and possibly undermining the objective of greater control of access on the new route.

4. Unregulated Building Patterns:

Kadiri (2010) observed that such measures of development control as the application of minimum plot-sizes, standard of windows, doors, height of buildings, road widths, among others, have been introduced to control buildings and general appearance of cities in Nigeria. The problem of undesirable nature and pattern of development in high-density areas of our cities is still a serious one. According to him, the reason for the pattern may not be far-fetched as these areas not only provide abodes for the poor natives who hold tight to extended family properties, but also provide locations of relatively high accessibility for businesses, cottage industries and services. For these individual developers, corporate bodies, and even some government agencies tend to develop or re-develop properties in the area to the fullest, with the ultimate aim of maximizing the use of space regardless of whether or not such an action is in the interest of physical planning. These actions are made more manifest in the process of conversion and re-development of properties to accommodate more businesses or less importantly more dwelling units. The rapid urbanization witnessed by most urban areas in Nigeria, particularly the state capitals, has brought along with it an array of physical and economic development problems. The inability of previous governments to fully implement initiated programmes that will guide the growth of the various settlements and make them efficient, safe and effective have made matters worse.

5. Poor Sanitation and Environmental Degradation:

Simon (2007) studied urbanization and global environmental change and challenges. He found that urbanization has increased the level of lawlessness and environmental degradation. According to him, the urban heat island has become a growing concern and has been increasing over the years. The urban heat island is formed when industrial and urban areas are developed and heat becomes more abundant. In rural areas, a large part of the incoming solar energy is used to evaporate water from vegetation and soil. In cities, where less vegetation and exposed soil exists, a larger proportion of the sun’s energy is absorbed by urban structures and asphalt. Hence, during warm daylight hours, less evaporative cooling in cities allows surface temperature to rise higher than in rural areas. Additional city heat is given off by vehicles and factories, as well as by industrial and domestic heating and cooling units. This effect causes the city to become 2°C to 10°F (1°C to 6°C) warmer than surrounding landscapes. Impacts also include reducing soil moisture and intensification of carbon dioxide emissions. Ogeah (2013) in his study of the creation and demolition of illegal structures in Nigerian cities with Benin City as a case study and using the questionnaire survey method argued that due to the existence of illegal structures in Benin city, the environmental condition of most of the neighborhoods became very poor. This is due to the heaps of solid waste which emanate from the various commercial activities taking place in the neighbourhood. The streets were littered with waste from these activities and not much was being done by various landlords or government to properly dispose them. Benin City became an ugly city because of the half hazard distribution of these facilities. In buildings where some restructuring had taken place, setbacks of buildings were tampered with and

this has lowered the quality of these buildings in addition to encroachment of some of these structures unto government right of way. The city was fast becoming a stretch of shanty environment with only buildings with no open space to give life to the city, all as a result of non-observance of established setbacks for erecting structures in the city.

6. Uncontrolled Street Trading and Hawking

Raji and Wasiri (2008), found that increase in the numbers of vehicles without adequate infrastructure, has accentuated the problems of traffic congestion, traffic delay, parking problems, accident, and urban land use severance. This has led to the encroachment of commercial activities on the footpath and ultimately on the carriageway. According to them, the carriage way is most often encroached on by hawking activities and parking of vehicle. Kazeem (2015) reported that the Lagos State Government has vowed to combat the menace of Illegal Street trading and hawking in the state. In an interview with the Permanent Secretary, Ministry of the Environment, Mr. Oluwatoyin Onisarotu, he (Permanent Secretary) stated that

“It is disheartening to see how our major roads and highways like Apapa-Oshodi Expressway, Ikorodu road, Agege motor road, Victoria Island, Ikoyi-Obalende, Ojuelegba–Stadium, Surulere, Oyingbo, Carter Bridge, Idumota, Oshodi, Ketu, Mile 12, Third Mainland Bridge, Cele, Iyana-Ipaja, Agbado Oke-Odo, Airport Road, Ikeja amongst others have been converted to illegal markets with numerous illegal structures”.

Leading to the conversion of the road median, setbacks and walkways to avenues for trading activities and non-compliance with the provisions of the State Sanitation Laws and land use plan. Mr Onisarotu therefore warned traders engaging in this illegal act to desist as the state government would not compromise any act that may derail the effort of the government in achieving a cleaner environment in the state.

7. Chaotic and congested transport system:

Okpala (1987), in his review of regional planning and plans in Nigeria and other developing countries also stated that neglect of building codes has resulted to environmental degradation; which invariably is a threat to human health, creates traffic congestion with its attendant consequences and undermines the beauty and aesthetics of the town.

Wan, Lo, and Young (1994), stated that in China, the government’s planning department announced a policy to clear all illegal squatters from hill sides and rooftops, which made demonstrators block rush-hour traffic for an hour in protest of the government decision.

Okoko (2006), noted that a number of factors have been responsible for precarious situation of traffic congestion. They range from failure to provide adequate transport facilities, gross inadequacies of public transport, overcrowded buses, poor road infrastructure, non-observance of the provisions for road setbacks, environmental pollution and absence of integrated traffic management measures to combat congestion.

Ogeah (2013) in his study of the creation and demolition of illegal structures in Benin City using the questionnaire survey method, noted that the scenario in the city was so bad until the Osomole civilian government came into power in Edo State and decided to tackle the poor environmental conditions and traffic congestion of the urban centres in the state. Benin City as the state capital received the highest attention of this treatment. The first step taken by the state government was the demolition of the illegal structures, on the major roads in Benin City. Among the roads affected are Airport Road, Akpakpava, Ugbowo/New Lagos Road and Sapele Road. With the demolition of the illegal structures, the government was able to expand the roads; this has reduced the traffic congestion that was a common feature on these roads as well as opened up the roads which were previously congested with illegal structure. Though the government gave enough notice to the public before embarking on the demolition exercise, the public complained that the government was depriving them of their means of livelihood.

3. RESULTS AND DISCUSSION:

3.1. Test of Hypothesis

Environmental Implications of Non-Compliance with Road Setbacks in the Awka Capital Territory. This hypothesis was tested using One-Sample T-Test to check the significance of each of the responses of the Professionals and Non-Professionals on the Environmental Effects of non-compliance, at the end conclusion was made. The results were presented in Tables 3.1 and 3.2

Table 3.1: Tests for the significance of the Environmental Effects by Non-Professionals

S/No	Indicator	P-value	Decision
1	Social Effects	0.000	Social effects are significant
2	Physical Effects	0.000	Physical effects are significant
3	Economic Effects	0.000	Economic effects are significant
4	Health Effects	0.001	Health effects are significant

Source: Author’s statistical computation from field work (2018).

From Table 3.1, it is observed that all environmental effects by non- professionals are significant

Table 3.2: Tests for the significance of the Environmental Effects by Professionals

S/No	Indicator	P-value	Decision
1	Social Effects	0.000	Social effects are significant
2	Physical Effects	0.000	Physical effects are significant
3	Economic Effects	0.000	Economic effects are significant
4	Health Effects	0.000	Health effects are significant

Source: Author’s statistical computation from field work (2018).

From Table 3.2, it is observed that all environmental effects by professionals are significant

Statistical tool: One sample T - Test.

Reason for choice of tool: One level of observation was analyzed.

Decision Rule: Accept the null hypothesis if the p – value is greater than or equal to 0.05, otherwise, reject the null hypothesis.

Decision, Conclusion and Reason: From the table, it is observed that the p – values of the tests are all less than 0.05 for both the Non-Professionals and the Professionals. This implies that the Environmental effects of non-compliance to road setbacks in ACT are significant.

3.2 Discussions of Result:

From the findings, the associated environmental implications with their four indicators of social, physical, economic and health of non-compliance with road setbacks in ACT had been determined and they are significant through non-professionals and professionals. It is well understood that the environmental implications in ACT are; Increase in Crime rate, Uncontrolled and increase density of physical development, Disorderliness of physical development, Human Congestion, Manifestation of Urban sprawl, Slump formation increases, Loss of Cultural Heritage, Bad draining, Time Wastage, Housing congestion (Social Indicator), Pollution (Water, Air, Soil & Plants), Destruction of aesthetic beauty, Traffic congestion, Flooding, Soil erosion/gullyng, Uncontrolled street trading & Hawking, Vehicle parking problems, Increase in noise pollution, Increase in solid waste generation, Increase in synthetic Surface construction, Felling of trees/destruction of vegetation, Environmental disorderliness (Physical Indicator), Loss of goods and properties (theft), Over competition for business space, Loss of Revenue, Business setbacks, Demolition of Properties, Losing of business contacts and customers (Economic indicator), Road accident, Loss of life and Psychological Trauma, Suffocation (Health Indicators). This is in line with some works of will (1991), Weiner (2003), Olomola (2003), Kazeem (2015), from the result of the analysis, it was clear that clear environmental implications with their four indicators were highly significant in ACT

4. CONCLUSION:

The Built environment in Nigerian cities was on the available spaces on land not in the air, if those illegal structures are built indiscriminately on available spaces by the landowners and developers. Where were planning authorities and law enforcement agents then? Were they not the same people that allowed them abolition to encroach into the road setbacks and were they not the same that demolish those illegal structures in the same urban areas? It is therefore noteworthy that the corruptions among planning authorities and failure of law enforcement agents are the brain behind the causes and environmental implications respectively on non-compliance with roads setbacks in the siting of structures in a given urban environment. Greedy developers note very that “understanding ways of planning authorities and law enforcement agents is the beginning of your wisdom for today and tomorrow” what does it profit you (greedy developer) to enjoy your life and properties for a second and loose them for the whole day and tomorrow? Why cannot you comply fully with road setback regulations and enjoy with your future generations hence sustainable development. The benchmark for externalities and public goods is economic efficiency, if urban infrastructural development by fathers of today destroyed, due to non-compliance with road setbacks, the economies of today and tomorrow would be affected as well as future generations. Behold, the future generation as the third party would be suffering from what the developer and planning authorities/law enforcement agents caused.

5. RECOMMENDATIONS:

Since there are severe environmental effects in ACT, there is need for environmental education and awareness in the area, so as to educate the public on the importance implementing road setbacks. When people understand the reasons for urban planning, they will be far less likely to violate the legal construction standards and will likewise make objections known, when their neighbors, relatives, friends, even their enemies build illegally. For the environment to gain its quality and aesthetic beauty, all hands should be on deck. Also, there is need for post occupancy assessment which deals with the continuous periodic/systematic assessment of the level of compliance to road setbacks and environmental orderliness of sited structures in terms of aesthetics, drainage, accessibility, productivity and

sustainability. This can effectively be done by Estate Managers/Surveyors for sustainable urban environment and socio-economic development

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