

THE IMPACT OF URBANIZATION ON PATTERN OF
PHYSICAL DEVELOPMENT IN EMERGING URBAN FRINGES
OF ADO-EKITI, NIGERIA

Article history

Received
15 April 2015
Received in revised form
29 September 2015
Accepted
12 November 2015

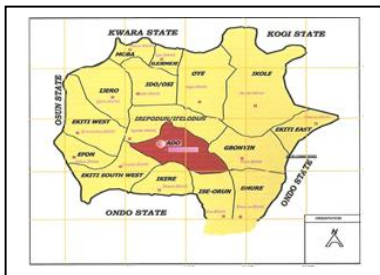
Taiwo David Olugbenga^{a*}, Kunle Ifesanya^b

^aFaculty of Built Environment, Universiti Teknologi Malaysia,
81310 UTM Johor Bahru, Johor, Malaysia

^bDepartment of Architectural Technology, School of Environmental
Studies, Federal Polytechnic Ado-Ekiti, Ekiti State, Nigeria

*Corresponding author
taidavison@yahoo.com

Graphical abstract



Abstract

Urban fringe development has become a global concern in the last decade, especially as cities continue to expand phenomenally, particularly in the Global South. Urban fringe development is a complex process that involves activities such as change in land, ownership patterns, land transfer processes, regulatory measures and enforcement. This paper examines the pattern of urban fringe development in Ado-Ekiti in South-Western part of Nigeria, focusing on the character of the population, housing types and conditions, availability and quality of infrastructure and the effects on quality of life. Primary and secondary data were obtained for the study. The study revealed that most of the fringe areas in Ado Ekiti lack adequate basic socio-economic amenities such as schools, health centres, recreational facilities, etc., as well as infrastructural facilities like adequate road network, electricity and water supply, drainage and sewage disposal, etc. Statistical data analysis also revealed that the income level of the population has significant effect on urban fringe development. Some of the recommendations for improving the situation include enlightenment of the citizenry the introduction of physical planning education to schools, proper planning, monitoring and enforcement of physical development activities in the fringe areas by government.

Keywords: Urbanisation, urban fringe, Ado-Ekiti, environment

© 2015 Penerbit UTM Press. All rights reserved

1.0 INTRODUCTION

Urbanization is the physical growth of urban areas as a result of rural migration and even sub-urban concentration into cities, particularly the largest ones. UN estimated the World's Population at 6.572 billion people out of which about 3.0 billion live in urban areas [1-2]. For the first time in history; this is referred to as the arrival of the "Urban Millennium" or the 'tipping points'. The major distinction between urban and rural settlements generally assumes that the livelihood of rural area is agriculture based whereas the urban area is manufacture and service based. Recent research, however, suggests that at certain parts of urban areas, usually the peripheries, there is simultaneous existence of two sectors – rural and urban - that are neither totally urban nor rural in

character. Studies reveal that the term 'urban fringe' was introduced by [3] to describe built up area just outside the corporate limit of the city. Later, the concept of the 'rural-urban fringe' was formulated by George Wehrwein in 1942 as the area of transition, between well recognized urban land uses and the areas devoted to agriculture. Over time, the characteristics of the fringe change from largely rural to urban. These fringe areas have variously been referred to as; rural-urban fringes, transition zones, peri-urban/sub-urban zones and areas of interfaces [4]. Most of the Global South experience spontaneous development pattern rather than planned growth. According to [5], the 'Global South' refers to the countries of the world, most of which are located in the Southern Hemisphere; including those countries with medium human development (88

countries with an HDI less than .8 and greater than .5) and low human development (32 countries with an HDI of less than .5). The most daunting problem associated with the urban fringe in most developing countries is the development of land informally, such that associated land development activities take place without conforming to statutory rules/regulations. According to [6], the rural-urban fringes are under threat from urban growth and expansion and often look disorderly, while physical planning and development in the area is usually inconsistent and uncontrolled. This study is of utmost relevance to global urbanization as [7] stated that most of the world's urban growth between 2014 and 2050 would take place in India, China and Nigeria. [8] earlier opined that urban fringe development in developing countries like India thrives because most of her urban core areas are already congested, making mass shift towards the periphery inevitable. They also classified a larger portion of India's fringe area settlements as pockets of poverty. Based on this, it is, therefore, expected that most of the projected "urban growth" for Nigeria will take place in the urban fringes. In Ado-Ekiti, in recent years, haphazard physical development, characterized by poor access routes, inadequate basic utility services, unsanitary and polluted environment, undesirable /incompatible use of land, deforestation/unnecessary loss of valuable agricultural land (that are being converted to housing areas), traffic congestion and housing shortages are some of the problems being experienced in the urban core. This phenomenon has, therefore, continually pushed more individuals and households from the urban core to the fringes of Ado-Ekiti city, thereby, altering the physical, social and economic characteristics of these urban fringes. This, therefore, confers a new form of importance and recognition on the urban fringes of Ado-Ekiti, further justifying the relevance of this study. This study, therefore, aims at understanding the peculiar pattern of physical development in the urban fringes of Ado-Ekiti and its implication on the quality of life of residents. The aim is expected to be achieved through the following specific objectives; identifying urban fringes settlements in the study area, identifying the factors responsible for fringe development in the study area, determining the population characteristics of the residents, examining the socio-economic challenges of fringe development in the study area and testing of relevant hypotheses.

1.1 The Study Area

Ado-Ekiti, the capital city and administrative centre of Ekiti state, Nigeria, lies on latitude $7^{\circ} 37' 16''$, North of the Equator and Longitude $5^{\circ} 13' 17''$, East of the Greenwich Meridian. The city has witnessed rapid

population growth and urbanization since it became the capital city of Ekiti State in 1996. It is located 344 kilometers North-East of Lagos; the most populous city in the country and the sixth most populous metropolitan area in the world, according to Oner in [9]. Ado-Ekiti covered an area of 2.5 square kilometer (sq. km) in 1956, but by 1996 it had grown to about 19.6 sq.km. Presently the city covers an area of 36.7 sq. km.

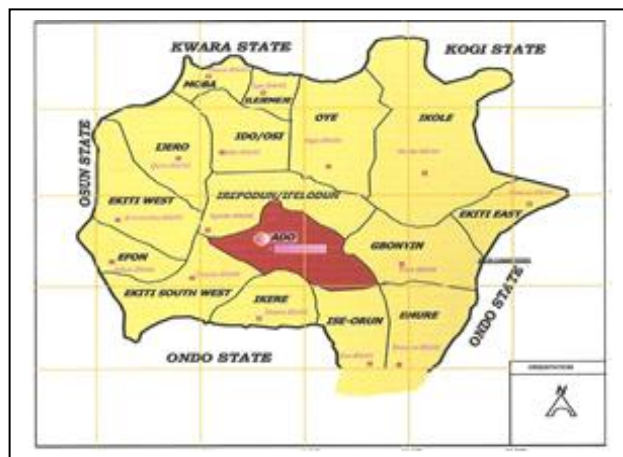


Figure 1 Map of Ekiti State Showing Ado-Ekiti Local Government Area [10]

2.0 EXPERIMENTAL

The data obtained for the study were sourced from both primary and secondary sources. For the primary data, a total of 180 questionnaires were randomly administered on the respondents in the study area, out of which 150 were retrieved and analyzed using the Statistical Package for the Social Sciences (SPSS). Secondary data were obtained from existing literature, online resources, journals and periodicals. The results obtained were presented using simple statistical methods like tables, charts, maps and pictures for easy illustration and understanding. The study (and research tools' administration) attempted to cover all the identified urban fringe areas of Ado-Ekiti, which include settlements at; Oke-Opa/Fagbohun, Paradise Estate, Awedele, Ajebandele, Omisanjana and Falegan in the southern axis of the city, and Basiri, Olorunda, Adehun, Ajiatidun, Adebayo and Iworoko road, in the northern axis. Questionnaires were administered on respondents in 16 communities in the study area spread across the ten wards of Ado-Ekiti Local Government Area, adopting the simple random sampling method. Table 1 shows the spread of the urban fringes of the study area of Ado Ekiti where questionnaires were administered for the purpose of this study

Table 1 Questionnaire administration (Authors' field survey, 2014)

S/N	Communities	No of questionnaire
1	Oke-Opa/ Fagbohun	15
2	Ajebandele Quarters	10
3	Adamolegun Street	10
4	Adigbagba Street	12
5	Omisajana/Ekute/ Oniyo	10
6	Ileri Street	12
7	Adehun Street	15
8	Afao Road /Iworoko Rd	10
9	Akinsola street	12
10	Olatunde /Ajitadidun	10
11	Tinuola/ Olorunda	15
12	Goshen Avenue	12
13	Olorunda/Owode	10
14	Bawa Estate/Alafia/ Surulere	10
15	Bank Road (Paradise Estate and Awedele)	12
16	Ogunniyi/Federal Housing	15
	TOTAL	180

3.0 RESULTS AND DISCUSSION

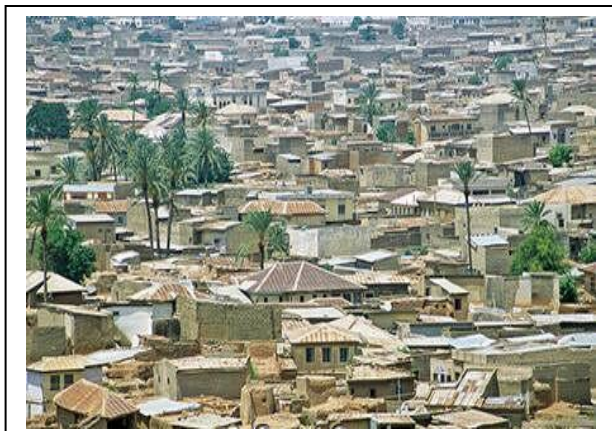


Figure 2 Typical urban fringe development of a Nigerian city showing haphazard development [11]



Figure 3 Proper planning and ample vegetation [11]

Quantitative and qualitative methods of data gathering were adopted for the study. Quantitative method was adopted in gathering sociological data on respondents and their perception of the infrastructural facilities and social amenities in their respective neighbourhoods, while the qualitative method was adopted in physically examining and evaluating the state/conditions of infrastructure and social amenities. The analysis of all the findings resulted in a multifaceted and comprehensive picture of the pattern of physical development on the urban fringes of Ado-Ekiti. Figure 2 shows a typical urban fringe settlement development in Nigeria, while Figure 3 shows a typical urban core development. In comparison to Figure 3, Figure 2 shows that the typical urban fringe areas exhibit poor physical planning and haphazard land layout. It also reveals the lack of proper road layout and low quality housing units. These are some of the classic features that distinguish urban core areas from the fringes.

3.1 Socio-Economic Profile

3.1.1 Gender/Sex of Respondents

The field survey carried out reveals that 65.3 per cent of the respondents were male, while 34.7 per cent were female. This shows that a larger percentage of those that responded to the questionnaires were male and also suggests that men are the dominant stakeholders in the fringe areas.

3.1.2 Income Level of Respondents

As shown in table 2 below, 63.3 per cent of the respondents earn N50,000 (\$300) per month or below, while many others earn less than the national minimum wage of N18,000 (\$106) per month. Many other respondents live below the poverty line of less than the equivalent of \$2.00 per day.

Table 2 Average monthly income of respondents (Authors' field survey, 2014)

Income Level Per Month (N/\$)	Frequency	Percent	Valid Percent
Less than N5,000 (\$30)	10	6.6	6.6
N5,500–N20,000 (\$33–\$118)	20	13.3	13.3
N20,500–N35,000 (\$120–\$206)	25	16.7	16.7
N35,500– N50,000 (\$209–\$294)	40	26.7	26.7
Above N50,000 (\$294)	55	36.7	36.7
Total	150	100.0	100.0

3.1.3 Educational Level/Status

Majority of the respondents are relatively educated, as over 60 percent are High (Secondary) School or higher education graduates. Concomitantly,

illiteracy level in the study area is also very high, as 26.7 percent of the respondents have had no form of formal education. This shows that the population characteristics of the study area are not homogeneous. The population of the urban fringes of Ado-Ekiti, therefore, cut across the various socio-economic spectra of the larger society.

3.1.4 Ownership Status of Respondents

From the field survey, it was discovered that 73.3 percent of the respondents are homeowners/landlords within the various communities, while tenants/renters accounted for 26.7 per cent of the population. This high rate of property acquisition in the urban fringes could be a consequence of the high cost of living in the urban core area. Furthermore, many former renters in the urban core area consider the cost of land ownership in the sub-urban area as affordable, so they move there to escape from the incessant arbitrary rent hikes and harassment from homeowners. . The urban fringe of Ado-Ekiti, therefore, provides viable alternative means of meeting the housing needs of many residents of the city.

3.1.5. Occupation of Respondents

It was observed that 53.3 percents of the respondents reas are civil servants, followed by 26.7 percent who are farmers who live in the community for easy access to their farms. Traders and private entrepreneurs constitute 16.7 percent of the respondents. The study also revealed that most of the male residents work in the core areas of the city, mostly as civil servants.

3.2 Land and Infrastructure Evaluation

3.2.1 Cost

66.7 percents of the respondents claim that they purchased their single plots of land for between two hundred and one thousand naira and two hundred and fifty thousand naira (N201,000 - N250,000), while others purchased the land for less. This implies that land is relatively cheaper in the fringe areas, in comparison to what obtains in most parts of the urban core, where the cost of same size of land is about three to ten times the cost in the former. This is a major factor for the physical expansion and demographic growth of the fringe communities.

Table 3 Cost of land in the study area (Authors' field survey, 2014)

Cost of Land/Plot in Naira	Frequency	Percent	Valid Percent
100,000-150,000 (\$600-\$900)	10	6.7	6.7
150,000–200,000 (\$900-\$1200)	20	13.3	13.3

201,000– 250,000 (\$1206-\$1500)	20	13.3	13.3
More than 250,000 (\$1500 and above)	100	66.7	66.7
Total	150	100.0	100.0

3.2.2 Residential Land Use

It was discovered that residential and agricultural uses constitute the major land use of the communities. From residents' perception, the study also showed that 66.7 percent of buildings in the urban fringe areas are in good conditions, while 20 percent and 13.3 percent are in poor and fair condition, respectively.

It was also observed that 66.7 percent of the respondents considered the access roads to be in poor condition, while 20 percent were of the opinion that the roads are in relatively fair condition and 13.3 percent of the respondents consider the road to be in good conditions. By implication, roads in the fringe areas are largely considered to be in poor conditions.

[12] traced the physical growth and expansion of the urban core area of Ado-Ekiti and the emergence of the urban fringes over time. According to him, the land use of Ado-Ekiti in the late 1970s was predominantly agricultural in scope, as the town was just a divisional headquarter of Ekiti Land at the time.

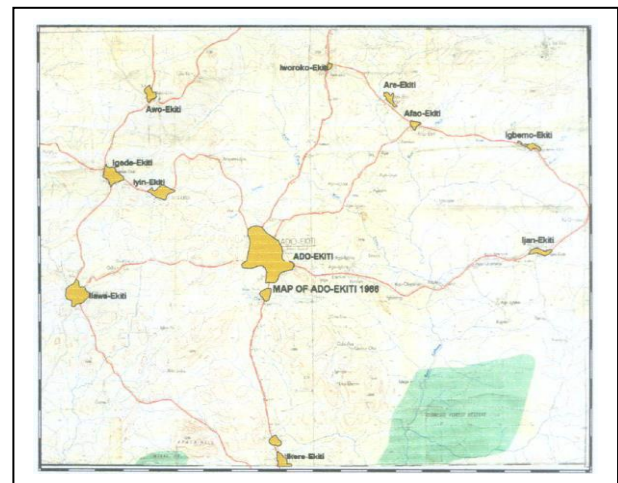


Figure 3 Ado-Ekiti in 1976 [12]

Figure 3 Above showed that the residential land coverage then was concentrated in that small portion of land

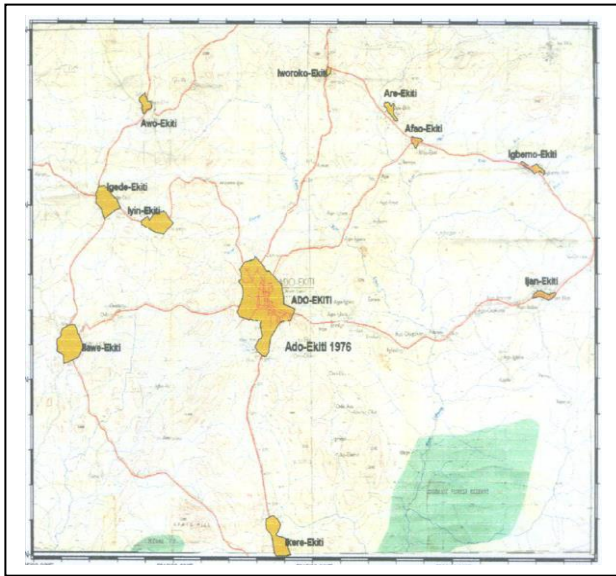


Figure 4 Ado-Ekiti in 1986 [12]

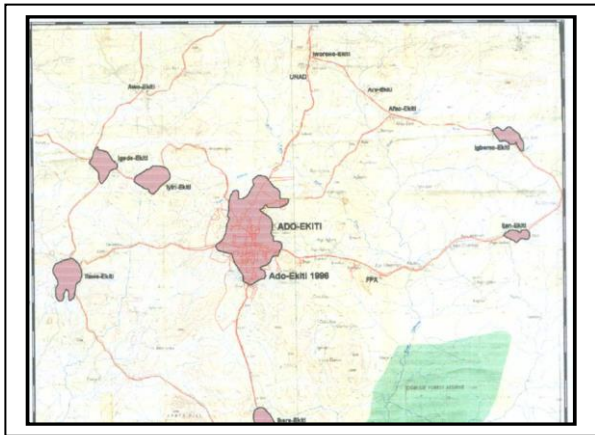


Figure 5 Ado-Ekiti in 1996 [12]

As stated earlier, Ado Ekiti assumed dual role upon the creation of Ekiti State in 1996. This, however, brought a lot of pressure and influx of people and government establishments from the old Ondo State from which Ekiti state was carved out. This also brought immense developmet into the town. Figures 4 and 5 show the rate of developmet of the town over a period of two decades

3.2.4 Energy/Power Supply

Energy/power supply to these communities are unreliable, inconsistent and grossly inadequate. Many of the communities receive state distributed electricity supply for between zero and maximum of ten hours per day. The federal government is the sole supplier of electricity to Ekiti State, therefore, the residents have no alternative for electricity supply, apart from private domestic camping power generators. This has serious effect on the socio-

economic life of the communities. 66.7 percent of the occupants of the fringe areas depend largely on energy supply from private domestic power generating sets, while 20 percent of the inhabitants depend on crude solar power generation and 13.3 percent depend on other means of generating electricity outside the state supply.

3.2.5 Drainage Facilities

Table 5 revealed that 53.3 percent of the respondents considered the drainage system to be in fair condition, 33.3 percent perceived the drainage system to be in good condition, while 13.3 percent view the drainage system in the neighbourhoods as being in poor state. By implication, the drainage system is in fair condition.

Table 5 Conditions of drainage facilities (Authors' field survey, 2014)

Drainages	Frequency	Percent	Valid Percent
Good	50	33.3	33.3
Fair	80	53.3	53.3
Poor	20	13.3	13.3
Total	150	100	100

The survey carried out reveals that 93.3 percent of the respondents are served via the open system while 6.7 percent are serviced via covered drain system. The pervasive use of the open drain system may cause diseases in the built up areas, if the drainages are not properly taken care of, as the implication of the pervasive use of open drainage system is the exposure of the population to grievous health risks, among which is malaria. Malaria is responsible for several deaths per annum in Nigeria and throughout Sub-Saharan Africa.

3.3 Hypotheses Testing

Two hypotheses were tested to determine certain relevant relations from the data obtained.

Hypothesis 1:

H₀: income level has no significant effect on urban fringe growth.

H₁ income level has significant effect on urban fringe growth.

Table 6 Income level and urban fringe development (Authors' field survey, 2014)

Level of income	Observed N	Expected N	Residual
Less than ₦5,000 (\$30)	10	30.0	-20.0
₦5,500-₦20,000 (\$33-\$118)	20	30.0	-10.0
₦20,500-₦35,000 (\$120-\$206)	25	30.0	-5.0
₦35,500-₦50,000 (\$209-\$294)	40	30.0	10.0
Above ₦50,000 (\$294)	55	30.0	25.0

The chi-square testing method was adopted. The test carried out, using SPSS, revealed that the calculated value is less than significant value (0.05). The analysis shows that the significant value is 0.000 which is less than 0.05; hence, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, the income level of Ado-Ekiti residents plays a significant role in the physical and demographic expansion of the urban fringes.

Hypothesis 2:

H0: There is no significant relationship between land use pattern and urban fringe expansion.

H1: There is significant relationship between land use pattern and urban fringe expansion.

Table 7 Land use pattern and urban fringe (Authors 'field survey, 2014)

Major land-use activities	Observed	Expected	Residual
Residential	120	30.0	90.0
Commercial	5	30.0	-25.0
Industrial	3	30.0	-27.0
Agricultural	12	30.0	-18.0
mixed use	20	30.0	-10.0
Total	150		

Table 8 Chi-square test of land use activities in the community (Authors 'field survey, 2014)

Hypothesis test	
Test Statistics	Major Land use activities in the community
Chi-Square	308.063 ^a
Df	4
Asymp. Sig.	.000
a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 32.0.	

Table 9 Chi-square test of level of income and urban development (Authors 'field survey, 2014)

Hypothesis test	
Test Statistics	level of income
Chi-Square	41.667 ^a
Df	4
Asymp. Sig.	.000
a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 30.0.	

The test was carried out using SPSS and the table of the output can be seen above. If the significant value calculated from the chi-square analysis is less than the significant level of the test, H₀ is to be rejected. From the above analysis, the calculated significant value is 0.000, while significant level is 0.005. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, there is significant relationship between land use pattern and urban fringe expansion. The data shows that majority

of the urban fringe residents settled there for residential abode. Housing is, therefore, the major land use in those areas.

4.0 SUMMARY OF FINDINGS

- i. The largest groups of occupants in the sampled communities are property/homeowners, as 65.3 percent of the respondents own their own houses.
- ii. Most of the residents of urban fringes areas are civil servants (regular workers), constituting 53.3 percent of the entire population
- iii. Most of the houses in the fringe areas do not conform to statutory planning standards.
- iv. Residents contribute immensely to the deterioration of physical environment, through unplanned and haphazard land development.
- v. The general assessment of the effectiveness of infrastructure and basic facilities available in the communities is poor.
- vi. The state of utilities, like energy/power supply is poor and residents are left to provide for themselves and their families.

5.0 CONCLUSION

In contemporary times, urbanization and economic activities has had profound effect on urbanization, urban fringe and urban green space. Some of the consequences of this include; destruction of the environment, paucity of adequate infrastructure and amenities, marginal land/urban fringe proliferation and urban poverty, amongst others. In the light of the aforementioned problems, sustainable development as a notion and a concept which brings about the inextricable linkages between economic development and physical growth is in jeopardy. Sustainable development emphasizes that economic development cannot be sustained in the face of environmental degradation.

Sustainable development contend that major global environmental threat such as the problems highlighted above can be addressed effectively by measures which place environmental concern at the centre of development policies. This study has shown that the pattern and nature of urban fringe development in Ado-Ekiti is unplanned and unsustainable. The phenomenon poses a threat to sustainable urban growth and decent urban life, causes environmental degradation and negative impact on the quality of life of the residents. The urgent intervention of the state and environmental development agencies is required to mitigate the situation.

6.0 RECOMMENDATIONS

The following sustainable measures are recommended as a means of achieving environmental sustainability in the urban fringes of Ado-Ekiti.

- a) There is need to inform and enlighten the citizenry on the importance of well-planned and clean environment, through the print and electronic mass media. Physical planning subjects/courses should be introduced in schools at the elementary stage to inculcate the values of sustainable environment development into the society from childhood.
- b) Residents should be encouraged to conserve the natural resource, especially forest resources and tourism attraction in the state. This could be promoted through special competitions and rewards from government and stakeholders.
- c) The government should place more emphasis on proper planning, execution, monitoring and enforcement of physical development in the fringes areas.
- d) Government should invest in infrastructure development and provision of necessary amenities and utilities in the urban fringe areas of Ado-Ekiti to improve the environment and enhance the quality of life of the residents. Public-Private-Partnership strategy can be adopted to achieve this goal.

References

- [1] Adedeji D. O and Eziyi I. 2010. Urban Environmental Problems in Nigeria: Implications for Sustainable Development. *Journal of Sustainable Development in Africa*. 12 (1): 124–145.
- [2] Taiwo D. O. and Olajide S. E. 2014. Liveable Cities: Challenges and Opportunities for Policy Makers in Nigeria. [Online]. From http://ijesit.com/Volume%203/Issue%203/1JESIT201403_01.pdf.
- [3] Hansen, A. and A. Oliver-Smith. (eds) Involuntary Migration and Resettlement: the Problems and Responses of Dislocated People. Boulder. Westview Press.
- [4] Simon, D. 2008. Urban Environments: Issues on the Peri-Urban Fringe. *Annual Review of Environment and Resources*. 33: 167-185.
- [5] United Nations Development Programme. 2005. *Human Development Report*. [Online]. From http://hdr.undp.org/sites/default/files/reports/266/hdr05_complete.pdf.
- [6] Kuypers S. 2010. *The Mental Map of the Urban Fringe: the Meaning of the Urban Fringe in Dutch Spatial Policy*. Master Thesis of the Department of Urban and Regional Planning. University of Utrecht, Netherlands.
- [7] United Nations, Department of Economic, Social Affairs, and Population Division. 2014. World Urbanization Prospects: The 2014 Revision. Highlights (ST/ESA/SER.A/352).
- [8] Shah, A and A. Kumar. 2011. Diversion of Land and Displacement in India: Review of Evidences and Issues. *CPRC-IIIPA working Paper No 40*.
- [9] Ifesanya K. 2012. The Role of Government Agencies in Urban Housing Delivery – Case Study of Lagos. Published doctoral dissertation submitted to the Institute for European Urban Studies of the Bauhaus University, Weimar, Germany.
- [10] Ministry of Physical Planning and Urban Development, Ado-Ekiti, 2011. Map of Ado-Ekiti, Ado-Ekiti, MPPUD.
- [11] Gary Cook Photography, 2014. Photos of Nigeria. From www.garycook.co.uk.
- [12] Oriye, O. 2013. Urban Expansion and Urban Land-use in Ado-Ekiti, Nigeria. *American Journal of Research Communication*. 1(2): 128-139.