The Place of Maps and Map Related Data in Control of Urban Slum in Nigeria

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Abstract: **The increase in the number of slum in our cities is quite worrisome, that ramshackle structures, sheds, canopies and shanties, especially along the shorelines, power line, marshy area and the like have turned to the abode of miscreants/street urchins, kidnappers, touts, street traders and hawkers who often vandalise public utilities and attack innocent citizen. As s result of this, the paper looks into the slum in Nigeria cities, the causes and types. It also, x-rayed the types of maps and map related data that can be used to control slum and made recommendations as to reduce the growth of slum if not eliminated.**

Keywords: **Slum, Maps, Urban, Data, Aerial Photographs, Satellite Image.**

1. INTRODUCTION

A Slum is residential area where the dwellings by reason of over-crowding, lack of ventilation, light and sanitary facilities, unhygienic conditions and other set of factors are detrimental to safety, health and morals. Also, slum is a situation where the houses and conditions of life are of a squalid and of wretched character and which hence has become a social liability to the community [1]. The Architects club of Chicago, (1932) [2] studied that a slum distract is an area or neighborhood where the buildings which are used predominantly, though not necessarily exclusive for habitation, may present difficulties and handicap to the attainment of sanitary, hygienic and moral standards.

Slums are physical characteristic of urbanism, in a growing town, worldwide. In other words, slum are streets of dirty crowded houses or part of a town where streets of houses built closely together are associated with problems of high pressure on transport, water supplies, sewage and refuse disposal grows and creates problems. In such areas, overcrowding, housing, electricity, traffic congestion, chemical affluent from factories produces air, water and noise pollution other problems are tensions created by such urban life leading to a far higher incidence of mental illness. Pollution particularly, fumes from motor vehicles also has some physical health hazard and environmental degradation effect.

A slum as defined by the United Nations Human Settlements Programme[17] is a run-down area of a city characterized by substandard housing, squalor, and lacking in tenure security. According to the United Nations, the percentage of urban dwellers living in slums decreased from 47 percent to 37 percent in the developing world between 1990 and 2005[16]. However, due to rising population, and the rise especially in urban populations, the number of slum dwellers is rising. One billion people worldwide live in slums and the figure is projected to grow to 2 billion by 2030[17].

Nigeria is ranked as one of the countries with high slum prevalence [15]. The proliferation of shanty dwellings, squatter settlements and slums in most of our cities in Nigeria and other less developed nations of the world is attributed to a chain of factors. Of course, such factors are closely associated with the low level of socio-economic and cultural lifestyles of the inhabitants. With a focus on Nigeria, this paper examines the phenomenon of slums and approaches to its management. A key component of the paper is how maps and map related data can contribute significantly to slum prevention and control via the professional and community services media.

Table 1: Some of the Slum Prevalence areas in Nigeria

S/No	Nigerian Cities	Slum Areas
1	Lagos	Ajegunle, Makoko, Agege, Bariga, Ilaje, Ijeshatedo/Itire, Iwaya, Amukoko, Badia, Orile-Iganmu
2	Kaano	Kurua, Asebe, Sabon-gari, Nasarawa
3	Ibadan	Beere, Ojo, Inalade, Mapo, Oke-Padi, Yemetu, Oniyanri, Agbokojo,Akobo-ojuirin, Bodija, Ojoo
4	Akure	Erekesan, Obanla, Isolo, Idiagba/Ijanikin
5	Kaduna	Angwar Kumin Gwari, Televisan, Nassarawa, Railway Down Quarter,Angwar Shanu
6	Jos	Bayan Rogo, Gangare, Katako, Angwar Rukuba
7	Enugu	Akwuke, Ugwuaji, Abakpa-Nike, Emene, Akagbeugwu
8	Port-Harcourt	Njemanze, Igbo-etche, Bundu Waterside, Mile 1, Eleme
9	Ado-Ekiti	Oke-Isa, Irona,Oke-Ila
10	Abuja	Dutsen Alhaji, Karimu, Gwagwa, Kabusa Kuchi Bena, Iyanyan-Labour Camp
11	Minna	Tudun Fulani, Kpakungu, Angwa Biri, Dutsen Kura
12	Makurdi	Wadata, Angwan Jukun, Idye, Logo
13	Zaria	Hagin Dogo, Part of Samaru
14	Calabar	Edim Otop

(Source: Adapted and modified from Bobadoye, 2013)

2. NATURE OF SLUM AREA

The general characteristics of these settlements include: unplanned settlements, overcrowding squalid condition of dwelling areas, inadequate basic infrastructural amenities and substandard housing.

2.1 Unplanned Settlement - More of the urban centers have no master plan for controlled development they fit into what Hans Blamenfeld [13] classified as "Grown" cities. The inevitable result of this has been disorganized congestion, decline dilapidation, blighted areas and then slums. Houses in these areas are often clustered together without adequate water, lighting, ventilation sanitation and waste disposal.

2.2 Overcrowding Settlement: - This resulting from overpopulation. The consequence of this is that there is more demand for houses which in most cases exceed supply. Also, amenities such as toilet facilities are stretched beyond it limit, people in such area defecate and urine in any available space thereby polluting the environment.

2.3 Inadequate Basic Infrastructural Amenities: - Most slum areas lack essential basic amenities such as pipe borne water, electricity and road network. Where they are provided, these facilities are insufficient or do not function due to neglect by relevant authorities and therefore, could not meet the requirements of the users, because most of the urban centers were not planned "grown" development; the roads are narrow and it is this narrow road that is been congested by vehicles, motorbike and wheel-barrows, especially in those areas that have transformed to business districts.

2.4 Substandard housing: - A dwelling place is where people in general fulfill their basic domestic and personal functions of family life [14]. Shelter which connotes housing has a fundamental purpose of protecting man, his activities and his possessions from the internal and external power that plaque man. A good housing, no doubt enhances the entire well being and aspiration of its occupants. Studies have shown that one's environment has a great impact or effect on ones personality, Slum environment with its filthy and shanty houses dampens the aspiration of its occupants, as it affects their physiological and social well being. An emerging phenomenon that is characteristic of urban centers is the conversion of residential building to shops because of their economic value and because these goods are needed for everyday living.

3. FACTORS THAT RESPONSIBLE FOR SUSTENANCE OF SLUM

There are many factors that responsible for sustenance of slum as asserted by scholars among them are: rural-urban migration, population growth, scarcity of lands, services and security of tenure, poor enforcement of sanitation laws, use of sub-standard building materials, inequality distribution of resources between urban and rural areas that leads to high poverty rate in the rural community, poor physical planning and lack of strict compliance to the government edicts, laws and decree, high cost of house rent among others [3], [5], [8], [15].

4. MAPS

Maps are graphic representation that facilitates a spatial understanding of things, concepts, conditions, processes or event in the human world [6]. Maps also facilitate the comparison of the presence, absence or the degree of intensity of particular variables in different regions of the world or of a country. According to Leatherdale [7], "maps may be needed to some extent for nearly aspect of government and as many private sectors activities including defence, maintenance of law and order, emergency service, administration and local government, land registration, economic and physical planning, and building regulation, environmental management and pollution control , transportation , utilities, agriculture, forestry and fisheries, exploration , and production of oil mineral, education, science and archaeology tourism and recreation industry and market research and commercial distribution". All these uses demand that maps must be kept legible, accurate, up-to-date and accessible [10].

4.1 General Function of Maps:

A map has nearly unrestricted potential utility among the uses are:

i. Maps serve as store of information: It is an efficient means of storing spatially anchored data and it is also a technical device permitting easy measurement of distance, direction and real measurements.

ii. Maps are used for hypothesis generation and testing: Map serves multipurpose functions, such as making possible inferences about the occurrence of unobserved data and aiding in the development and testing of spatial hypothesis.

iii. Maps serve as inventory of phenomena such as nation's resources: Such inventories usually point out that a map can be popular and scholarly tool which aids in perceiving and understanding geographical relationships.

iv. Map serve as universal means of communication: it can be regarded as a two-way traffic involving the map maker and the map user. Symbols are the language of maps [11].

v. Maps are used for planning in day-to -day problem and solving orientation activities.

vi. Maps server as educational aids and research tools for the interpretation of the relief of an area of land.

vii. Maps also serve as ornaments.

5. HOW MAPS AND MAP DATA CAN CONTRIBUTE TO SLUM PREVENTION AND CONTROL

From the above, the general purpose of maps has been highlighted. But the specific maps that are useful in the management and control of slum include:

5.1 Street Map – A street map is a map showing road, street and transport facilities in a district or entire city [10]. The role of this map to the growth and development of any town cannot be overemphasized, not because it shows what is where in a town alone but it also serves as base map for planning. Street map is important to people especially the tourist, salesmen, firemen, police, security agent, tax collectors, postal services, personnel and the like, to find their ways and plan their movement within the complex city environment.

The scale of such map usually ranging from 1:10,000 to 1:25,000 depending on the size of the city and how many sheets can be accommodated with limited size of paper and printing machine. This map is useful for demarcating census enumeration area (ESA) and planning census taking. They provide wide view than township map; they are good for numbering of houses for census enumeration (i.e. cross-checking purposes and postal services). They form the base for land use, classification, mapping and town planning purpose.

5.2 Cadastral Map - is a map that shows property boundaries, owners, streets, roads, location as well as pattern of distribution of houses, communication lines. This map is therefore, valuable tools in slum management.

5.3 Township Map: This is a conventional map that present virtually all the detail city fabric that are aerial visible in addition to relief by mean of contours. This map is large enough to show building including boy's quarter all roads; sidewalk, undeveloped plots of land and the scale could be as large as 1:500.

This differs from cadastral map that shows property owners and survey data on the face of the map. However if that is the map that is easily assessable to the city planner, such information can be added for the purpose of tax collection tenement

rates and other purposes. Township map is used for management and construction of engineering work such as drainage channel construction, laying of pipe for water supply and distribution and road construction within the city. Also, it is important for house-to-house survey, construction and population estimation. All these are information needed for slum management and control.

5.4 Topographical Map: Topographical maps are two dimensional representation of the earth surface which shows by the use of conventional symbols/signs, the spatial configuration of the earth surface (like valleys and hills), other natural features (tree, stream) and the physical changes brought upon the earth surface by man (houses, road, canal, cultivation). The general content and scale of topographical map do not allow much room for detailing information about the internal structure of urban centre but they are important in determining the size, shape and expansion of the city over time.

Topographical maps contain contours, river, settlement, flood, paths and other natural and man-made features these features serves as important landmark in slum management and control.

6.   MAP RELATED DATA

 Maps related data here refers to aerial photographs, satellite image, global positioning system coordinates, photo mosaic and photo maps. The aerial photographs and satellite image provide vital information about an area, they can provide information for urban planning in the absence of map, and they can act as maps.

6.1Photo Mosaic and Photo Maps – provides vital information needed in carrying out some urgent project. Though, this two differ from each other, photo maps is completely vertical and shows some map features such as contours lines, location, and area symbols. For urban centre/areas that have no well integrated surveying and mapping programme photo mosaic are of great importance because they are timely than maps since there is usually time lag between the procurement of the photographs and the production of maps, for example 1:10,000 of the urban can show greater details that can be shown on maps which has been generally generalized. All these maps and map related data can be implored when it comes to solving the problem of urban slum.

7.   CONCLUSION

From the above discussion, maps and map related data has been discussed to show that maps are inevitable tool for control and management of urban slum. To achieve this, there should be aggressive mapping of our urban cities by the 3-tiers of government (Federal, State, Local) as asserted by Balogun, [4].

In addition, Ajirotutu and Ufuah, [10]; Arinola [12], have worked on base map for some towns in Nigeria, but most of the local governments do not even have any map, even where available they are outdated. Therefore, there is need for awareness of various thematic maps for the use of city by city planner's worker and dweller which at present is too low. The city manager should, appreciate the use of maps for the planning and execution of their city projects.

Also, the commercializing of planning service must stop, a situation where planning is now seen by the state government mainly as a revenue generation source rather than social service is not ideal and will not help.

However, the reality of our daily life is full of pretence sycophancy and hypocrite behaviours and indiscipline that destroy us and our environment. If we are to move ahead, emphasis must be placed on the ground and these measures if adhere to would help us to reduce slum in our urban areas if not eliminated.

REFERENCES

[1]   Housing Official year book (1936) page 8.

[2]   The Architects club of Chicago (1932): Rehabilitation of Blighted Areas page 12.

[3]   Atere T. S (2001) Urban slum increase in Lagos. Daily independent mar day October 11, 2003 page 15.

[4]   Balogun, O.Y. (2008): Digital Map Literacy for Millennium Development. A Paper Presented at the Public Lecture at Adekunle Ajasin University Akungba Akoko. Ondo State, Nov. 13th 2008.

[5]   Simeon O. Oside (2004): strategies for Affordable housing delivery in Nigeria. 18th inaugural lecture of Ambrose Alli University Ekpoma. Floreat System Benin City page 17.

[6] Woodword (1992): Representative of the world in Abler, R. F Marcus, MG and Olson T.M (e d): Geography's inner worlds New Jersey: Rutgers University Press New Brun Swick.

[7] Leatherdele, J. (1992) "Prospect for Mapping and Spatial Information Management in Developing Counties" I.T.C Journal 1992-4.

[8] Kingsley O. Dimura (2005): A Slum: its Growth, Nature, Effect and Solution: Occasional publication. In Albert A. Segylola (ed). Journal of Department of Geography and Regional Planning Faculty of Environmental Studies, Ambrose Alli University Ekpoma.

[9] Ajirotutu J.O. (2010): Application of Geographic Information System in the Production of the Urban Map of Owo, Ondo State. An Unpublished MSc. Thesis, submitted to Department of Geography and Regional Planning, Faculty of Social Science. Ambrose Alli University, Ekpoma Edo State Nigeria.

[10] Ajirotutu J.O and Ufuah M.E (2013): Application of GIS in Street mapping for Sustainable Development in Owo, Owo Local Government Area, Ondo state, in Olomo R.O and Udoh J.C (ed). The Nigerian Journal of Cartography and GIS volume 8 No 1.

[11] Robinson A H, Morrison J.L, Muchreke, PC, Kimerling, A.F and Gunptill, S.C (1995): Elements of Cartography, New York, John Wiley and Sons 6th edn.

[12] Arinola l. l. (1999): Digital Cadastral survey and its Potential for Revenue Generation. A psaper presented at the 1999 Survey Coordination and Advisory Board on Survey Training Conference Akure, Ondo State Nigeria.

[13] Hans Blamenfeld (1971): The Modern Metropolis - Its Origin, Growth, Characteristic and Planning. The M.L.T, Press Cambridge Massachusetts.

[14] Odumudu, R.C. (1987): Shelter and Housing. An Approach to a Better Living. Journal of Institute of Architects Vol. 3 No 2, April –June, 1987.

[15] Sunday A. Bobadoye, Alexander A. Fakere; Slum Prevalence in Nigeria: What Role for Architects? *World Environment*, Vol. 3 No. 2, 2013, pp. 45-51. doi: 10.5923/j.env.20130302.02 . www.article.sapub.org/100923.j.env 20130302.02.html. Accessed on 23rd February,2017.

[16] United Nations, 2007. The Millennium Development Goals Report. p. 26

[17] Slum Dwellers to double by 2030 UN-HABITAT report, April 2007.

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