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FOREWORD

It is with great delight I welcome you to volume 4 issue 2 of Federal Polytechnic – Journal of Pure and Applied Sciences (FEPI-JOPAS). It is a peer-reviewed open-access multi-disciplinary Journal of global recognition which is referenced and indexed in African Journal Online (AJOL). It is a highly commendable Journal that publishes excellent research contributions and exhibiting also special attention to experience papers coming from the many application areas of pure and applied Sciences. FEPI-JOPAS publishes full-length research work, short communications, critical reviews and other review articles.

The aim of FEPI-JOPAS is to provide intellectual bedrock for both indigenous and international scholars with quality research outputs to express and communicate their research findings to a broader populace. It serves as a valuable platform for the dissemination of information to 21st Century researchers, professionals, policymakers, manufacturers, production staff, R & D personnel as well as governmental and non-governmental agencies. It also aimed to provide a platform for academics and industry practitioners to share cases on the application of management concepts to complex real-world situations in pure and applied sciences and related fields.

This volume 4 issue 2 of FEPI-JOPAS is loaded with quantum and well-featured diversity of trending topics in applied and basic research. These hot and trending topics are: Sustainable Art and Design: Activating Sighting as the Phenomenon of Representational Drawing; Assessment of Heavy Metals in Processed Meat (Tinko) Sold within Igbesa Community; The Hypoglycemic Effect of *Musa Sapientum* in Alloxan Induced Diabetic Albino Wistar Rat; Rainwater Quality Evaluation for Agricultural Use: Case Study of a Portland cement Producing Area; Analytical Approach to Investigating the Influence of Blood Group and Blood Genotype on the Performance of Students of Federal Polytechnic, Ilaro; Dough Mixing Time: Impact on Dough Properties, Bread-Baking Quality and Consumer Acceptability; Chemical Composition of Harvested Rainwater Around a Cement Factory in Ibeshe, Yewa North, Ogun State.

Furthermore, other topics to be encountered in this issue that have added colour and beauty to this edition are: Physicochemical properties and sensory evaluation of milk candy ‘toffee’ (a

NIGERIA candy) enrich with coconut, tigernut and groundnut; Informal Settlements in Developing Countries: Issues, Challenges and Prospects; Comparison of Sensory Properties of Meals Produced from Cowpea and Pigeon Pea; Automated Lecture Timetable Generation Using Genetic Algorithm; Septic Tanks Contamination in Groundwater Quality around Elementary Schools in Ibadan, Oyo State Nigeria; and Waste Disposal Systems in Some Selected Abattoirs Located in Ilaro Metropolis. FEPI-JOPAS has been centered on discerning the changing needs of the academic world and is committed to advancing research around the world by publishing the latest research in various academic fields and ensuring that the resources are accessible in print, digital, and online formats.

In addition, I would like to thank many people who worked so hard to ensure that publishing this issue 2 of volume 4 is a reality. I would like to thank the Editorial Board for their guidance and the publishing team for the continued support and effort in streamlining the publication process. I am grateful to the reviewers who provided timely and constructive reviews for the papers assigned to them. The authors are solely responsible for the information, date and authenticity of data provided in their articles submitted for publication in the Federal Polytechnic Ilaro – Journal of Pure and Applied Sciences (FEPI-JOPAS).

I am looking forward to receiving your manuscripts for the subsequent publications. You can visit our website (<https://fepi-jopas.federalpolyilaro.edu.ng>) for more information, or contact us via e-mail us at fepi.jopas@federalpolyilaro.edu.ng

Thank you and best regards.



Prof. Olayinka Oyewale AJANI
(Editor-in-Chief)

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Review

Informal Settlements in Developing Countries: Issues, Challenges and Prospects

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Abstract

Professionals in the built environment as well as governments of most developing countries have had to challenge the problem of the proliferation of informal settlements in recent years. The inner core of informal settlements is mostly affected, while the peri-urban slums are inflicted with the absence of social services and infrastructure, uncontrolled development, and substandard housing sector. The rate and geometric proportion of population growth and explosion in urban cities have given rise to several informal settlements springing up in major urban centers in developing countries, especially in Africa. Most African cities are characterised by unequal development, owing to the growth of informal settlements. A greater percentage of the African population resides in urban centers, with the expectation that about 66% of the world's population will live in urban centers by the year 2050! The United Nations termed a megacity as a continuously urbanised area with a population of at least 10 million people, most major cities of Africa fall into this bracket. With this assertion, the development of informal settlements in these urban cities is a great expectation, as continuous rural-urban drift is a major factor. The aim of this study is to examine the different reasons for the creation or emergence of informal settlements in urban cities, especially in Africa with Lagos as a focal point, and to weigh efforts of successive governments to mitigate, manage and improve or renew informal settlements.

Keywords: informal settlement, urban growth, population, urban development, developing countries

INTRODUCTION

Most past studies on informal settlements in urban Africa have ignored the impact of such settlements on the poorly serviced land developed by the urban poor that has not been properly purchased through a formal system. Studies so far have focused on poverty and growth rates of informal settlements but with little or no emphasis on the impact of the observed trend of developments of the informal settlements on the economy of the local environment. Therefore, the research problem is to examine the extent to which the characteristics of informal settlements such as socio-economic attributes, conflicting land use, insecurity of tenure, housing conditions, and facilities/services, government policies, etc., determine the environmental economy in terms of land nature upon which there are service activities like solid waste disposal, method, waste collection method, payment of waste collection, environmental pollution, sanitary wastes method, traffic, diseases suffered etc. This is towards adopting

a strategic framework approach by developing a model to deal with the issues of informal settlements rather than the eviction approach. The proliferation of informal settlements is a serious challenge to urban managers (Barry and Ruther, 2001; UNECE, 2009) due to a lack of in-depth knowledge of the concept of formality in the African context and Nigeria in particular. This lack of knowledge is manifested in the eviction and demolition responses to informal settlement issues by the government. These responses, arguably are based on past studies that focused on poverty and the negative effects of the characteristics in relation to settlements developments, ignoring the positive impacts of such characteristics in relation to the environmental economy such as the land nature that could explain the resistance to the demolition action.

Such past studies have examined poverty and rapid rates of growth (Stren 1992) of the informal settlements, which Lawanson et al. (2012) attributed to socio-economic attributes, housing facilities and

basic infrastructures available but admitted that no pragmatic effort to slum improvement system. Furthermore, focusing on poverty alleviation of informal settlement dwellers, Olajide (2013) discovered that access to urban services comes at higher costs to the urban poor, relative to their income and hence suggested inclusive provision of livelihood assets in the environment within which they are located. Earlier, Olajide (2010) has shown that the incidence of this poverty is manifested in uncontrolled and conflicting land use, unplanned growth, illegal squatting, overcrowding, inadequate or lack of basic services and infrastructure, continuous rise in the incidence of informal land use, insecurity of tenure, poverty and worsening environmental conditions, marginality, exclusion, and vulnerability among others. Such findings made the government dismiss the sector as an anomaly, a source of disorder, and of a modern economy, thereby justifying the application of the eviction and demolition approaches

Therefore, it is clear that there is little or no emphasis on understanding of the persistent and characteristic nature of the informal settlements in the context of the economic assets of the environment in which they are located. Hence the need for a shift of emphasis on poverty or negative impressions in the way the concept of formality is seen by the Western urban planning theories and management. Arising from this argument, the research gap is to examine the extent to which the development characteristics of informal settlements are influenced by the economic resources, especially the land nature of the environment within which they are located, with a view of developing a policy framework for inclusive planning rather than the eviction and demolition approaches presently adopted by the government.

Sustainable Livelihood/Development

Globally, there is a general and renewed consensus that issues of poverty must be properly addressed if sustainable human settlements and millennium development goals are to be attained. However, poverty has remained a complex and contested phenomenon, but current literature on poverty has shown that poverty is multi-dimensional and any strategy or approach aiming at alleviation must be comprehensive enough to capture various dimensions of poverty. In line with this thinking, many approaches have been developed. One of such approach is Livelihood Approach. Conceptually, as

defined by Chambers and Conway (1991, 6) a livelihood comprises the capabilities, assets (stores, resources, claims, and access), and activities required for a means of living; a livelihood is sustainable and can cope with recovery from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and contributes net benefits to other livelihoods at the local and global levels and in the short and long term’.

According to Aluko (2017) in Sanderson (1999), the sustainability of individual or household livelihood is premised upon adequate access to income and other assets, which to meet basic needs and to build up capabilities to resist or recover from shocks and stresses. Based on the livelihood approach, several frameworks have been developed for livelihoods` analysis. Notable among these frameworks is the Sustainable Livelihood Framework (SLK) which has been promoted by various development agencies and organisations such as DFID, UNDP, CARE and Oxfam. Also, various researchers have adapted the framework for understanding and analyzing poverty in different contexts (Chambers and Conway, 1992; Ashley and Carney, 1999; Frankenberger and Drinkwater, 1999; Ellis, 2000). Poverty is associated with livelihood in five major constants of human, social, physical, and natural. Livelihoods, on the one hand, are vulnerable to trends, shocks, and seasonality and on the other hand, are mediated by institutions (Carney, 2003), however, its application remains popular among various development organisations earlier mentioned. It is not surprising because it was purposely developed for analyzing poverty and developing effective poverty alleviation strategies. Also, its strengths as a sustainable, people-centered, holistic and dynamic approach as well as its flexibility of adaptation have made it more popular than any other Livelihood Framework. Also, SLF can be used as an analytical tool or an overall development objective. In studying poverty, SLF provides a comprehensive platform for understanding the links between all factors that affect households ranging from how assets are secured, what they do with assets, what obstacles they come across while obtaining assets and who controls the assets on which livelihoods are based (Bebbington, 1999).

Literature Review

Successive governments’ inability to cope with the housing needs of the populace in urban centers is a major contributor to informal settlements. There are many health risks associated with living in these

settlements. There are evidences of poor water quality, coupled with exposure to a wide range of unhealthy conditions of living. Social vices are a common feature, with attendant stress induced by overcrowding, drug related problems, poor sanitation and the likes. Onyekachi (2014) argues that the environmental quality of an urban centre has a serious impact on the health condition of its residents. Naturally, the negative consequences of poor environmental quality affect every area of their lives including the livability and communal health at large.

The UN Habitat (2011) describe informal settlement as residential areas where a group of housing units has been constructed on land to which there is no legal claim by the occupants or land which has been illegally occupied; or unplanned settlements and

areas where housing is not in unison with existing planning or building regulations. In an informal settlement, houses are often constructed without formal design and construction standards, and more often than not, with shanty temporary materials. Social services like schools, churches, hospitals markets are occurrences.

The urban poor has an urgent need for shelter, hence all they crave for is somewhere to lay their head. There is high value of land in the core centres of the urban cities is another factor determining the decision to move to the edge of the cities for solution to the urgent need for housing.



Plate 1: People living on ‘floating’ houses in Lagos

Source: Authors’ field work, 2021



Plate 2: People living in shanty houses in Lagos

Source: Authors' field work, 2021

The UNDP has said it repeatedly that over 80% of Nigerians live below the poverty line; that is less than \$1.00 a day! This is an equivalent of N570.00 exchange rate in October, 2021. This is directly proportional to the conditions of living of the people vis a vis economic, health and social conditions.

POVERTY



Figure. 1: The Poverty Cycle

Source: Culled from Onyekachi, 2014.

The World Bank in 2020 argues that three countries (India – 24%, Nigeria – 12%, DR Congo – 7%) with the highest shares of the world's extremely poor are not projected to grow faster than their population,

meaning that extreme poverty will remain at the elevated 2020 levels through 2021. The projection came after the Washington-based development lender said the pandemic could drive between 70 and 100 million people into extreme poverty in 2020 as the

global economy faces its worst recession in 80 years. However, there can be a turnaround of this assertion with right policy formulations about informal settlements in the countries so mentioned.

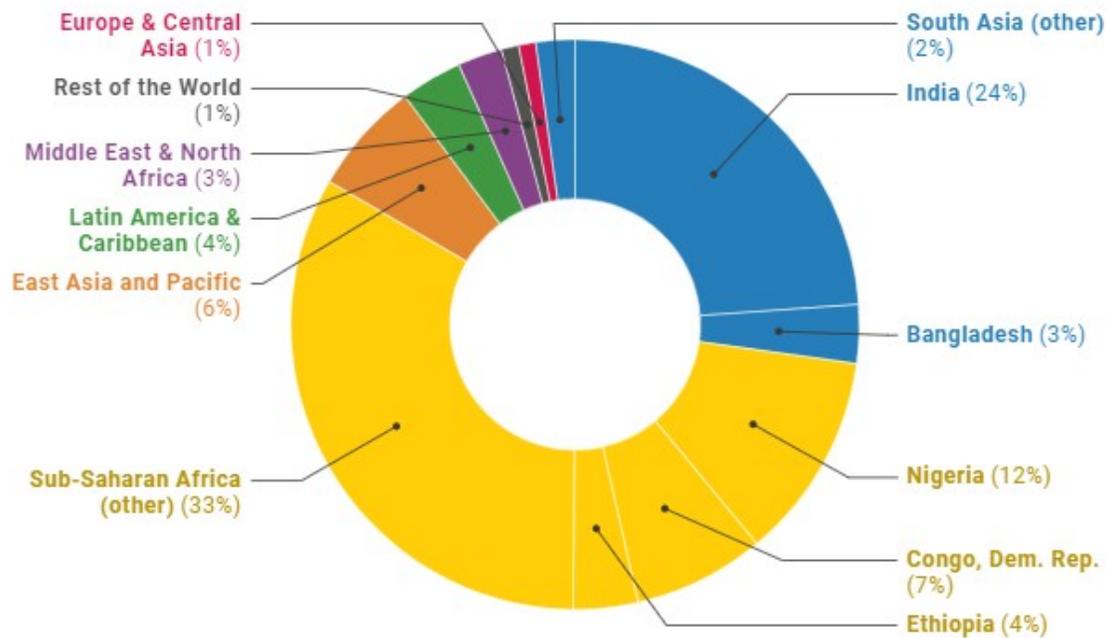


Figure 2: Poverty ratings of developing countries

Source: World Bank, 2020.

SWOT ANALYSIS

In order to understand and appreciate the issues relating to informal settlements, the better way is to carry out a SWOT analysis of these settlements.

Issues	Strengths	Weakness	Opportunities	Threats
Location	Prime/Strategic location, high land values	Contrast with surrounding, low class neighbourhoods, noise and other forms of pollution	On-site redevelopment, including all interested stakeholders	Growing socio-spatial segregation between the neighbourhood and its surrounding; unsafe area
Urban fabric	Consolidated urban fabric	Limited accessibility and narrow streets or roads, very bad waste disposal methods,	Improve accessibility with minor interventions, improve streets qualities and open spaces	Non-availability of spaces and land, dune garbage along streets and water front as a physical barrier
Ownership	Long term stability of ownership	Complexity of actors regarding	Cooperation between actors to	Deterioration of unsafe houses,

		property: land owners, renters	promote on-site redevelopment, sharing mutual benefits and costs	increasing rents
Open space/management	Strong relationship between residents in terms of security	Lack of responsibility for the overall neighbourhood, gender inequality	Cooperative management between all residents and involved stakeholders	No open spaces are available
Building conditions	Incremental process of construction: housing process adapted to changes in family structures	Weak ventilation and illumination, small plot sizes, unsafe structures and building materials	Concentration of unsafe buildings as a potential for bulk redevelopment	Unsafe buildings affecting interdependent structures
Infrastructure	Available	Low or unavailable quality of service (water, health, etc.), poor sewage system	Upgrade physical infrastructure using appropriate and sustainable technologies	Sewage system affecting public health and environment and contaminating the soil
Land use	Proximity and mixture of uses (productive, commercial and residential)	Polluting manufacturing activities mixed with residential uses	Grouping/clustering of economic activities	Informal eviction of residential uses due to pollution of productive activities
Economic activities	Specialisation of economic activities car repair, carpentry, and supply of daily goods	Environmental and social impact of polluting workshops, illegal status of manufacturing activities, high percentage of unemployment (especially the youth), low level of education	Invisible women workers as potential target groups	Dismantlement of the economic fabric due to external relocation of all polluting workshops, low capacity of adaptation to market demands

Table 1: SWOT analysis of informal settlements

Source: Culled from El Menshawy *et al*, 2011

Prospects of Upgrading Informal Settlements

Experts in the urban environment in 2001 estimated that 924 million people, about 32% of the world's population lived in slums, 43% in developing and 6% in developed nations. This is further projected to rise to 2 billion in 2031. In the light of this trend, Onyekachi (2014) posits that there is a growing global concern about slums, which a physical and spatial manifestation of urban poverty and intra city

inequality, though not all slum dwellers are poor. In facing the challenge of slums, urban development policies should more vigorously address the issues of livelihoods of slums dwellers and urban poverty, going beyond traditional approaches that concentrate on improvement of housing, infrastructure, and the physical environmental conditions. Up-scaling and replication of slums upgrading is among the most important of the strategies acclaimed by most researchers and scholars that have received greater emphasis in recent years, though it should be recognized that slum upgrading is only one solution among several others. For slum policies to be successful, the apathy and lack of political will of government needs to be, reversed. There is great

potential for enhancing the effectiveness of slum policies by fully involving the urban poor and those traditionally responsible for investment in housing development. This requires urban policies to be more inclusive. National approaches to slums and to informal settlements, to more positive policies such as self-help, and in-situ upgrading, right-based policies.

Just like many other megacities, Lagos is faced with the challenge and opportunity to house her citizens better and make decent amenities available to all as a matter of right. This has a direct impact on the national security and conscience. Strategies to deal with squatters should be given adequate consideration much more than the provision of housing and physical services. They need to consider among other things, questions of governance and political will, ownership and rights, social capital and access as well as planning, coordination, and partnerships between all the various partners in urban activities.

Stemming the Tide

Many strategies could be adopted for upgrading informal settlements, but the primary goals of these projects are to provide secure land tenure system in informal settlements and to improve basic infrastructure for water supply, sanitation, transport, and energy services which are critical for improving the lives of slum dwellers. Where feasible, community groups should be allowed and supported to play active roles in preparing and executing plans for slum upgrading. Onyekachi, (2014) posits that slum upgrading requires a stronger focus on networked technologies, such as piped water, and electricity grids. Investments in improved sanitation should receive high priority to improve the quality of and reduce the high burdens of oral-fecal diseases in informal settlements caused by widespread open defecation. The high density of informal settlements makes sanitation particularly precarious. Where space constraints are high, low-cost communal toilets blocks could be adopted. Effectively, hygiene education and awareness building programs are essential to create demand for sanitation and to ensure adequate use by all households.

Provision of Alternatives

Cities in most developing nations will continue to grow at a fast rate, and Lagos is not an exception. It

is very important to improve on planning and development strategies for to give room for alternatives to formation of slum in urban cities. Regulatory strategies for transportation, sewage disposal and adequate health care facilities at the edge of developing towns will go a long way to discourage formation of slums.

CONCLUSION

In a quest to achieve a better quality of life and economic powers, several millions of people in developing nations will always migrate into urban cities. Unfortunately, the major cities will always be the first to feel the heat. The reason is not farfetched. There is the perceived likelihood of low level informal job opportunities in big cities like Lagos, Abuja, Port Harcourt in the case of Nigeria, hence the rush into these cities compared with other state capitals. Simply put, this paper concludes that lack of adequate national policy and inefficiencies in urban planning and management of existing policies in different sectors of the economy and negligence of the rural and semi-urban centres by different governments is responsible for rural-urban migration, and the resultant feature is formation of slums in many developing nations.

RECOMMENDATIONS

In as much as upgrading informal settlement is about integrated approach to development aimed at addressing poverty, this paper recommends that governments of developing nations should endeavour to study and understand informal settlement communities in order to give room for participatory approach to upgrading. More importantly too, Tilaki et al (2011) opines that collective actions should be employed to improve infrastructure, services and administrative affairs in the rural areas. It further stated that cities should be developed based on regional planning and policies while there should also be adequate support to promote physical identity, urban services and public participation in the current informal settlements around the globe.

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