# Physical Development and Challenges of Spontaneous Waterfronts in Port Harcourt Metropolis Nigeria

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***Abstract*: The development of spontaneous waterfronts has profound and positive effect on its local destination and neighbouring communities, as it brings physical, social and economic advancement. This research evaluates developmental sustainability and encounters of spontaneous waterfronts in Port Harcourt metropolis Nigeria. The objectives of this study are to determine the challenges of spontaneous waterfront communities, analyse and justify developmental stride for spontaneous waterfronts and assess how development of unplanned waterfront improve existing land uses and declines penury. The research method or approach adopted includes in-depth field work, environmental observation, questionnaire administration, interviews, collection and processing of the field data. Descriptive statistics was used to analyse all the data obtained for the study and the findings revealed that government, total clearance approach, loss of social justice, land ownership, heritage, /culture, poor environmental and social justice are the development challenges of spontaneous waterfront. The community members observed that 51% and 97% expected physical development of spontaneous waterfront through physical planning approaches as in contradiction to 5% experimented populace who pointed observations and expectant to that influence. Though, the considered implication value of 126. 45 revealed an advanced scientific value greater than the desk value of 3.84. The recommendation moored that government and built environment stakeholders must provide enabling environment to enhance development and sustainability of spontaneous waterfronts.**

***Keywords*: Physical, development, challenges, spontaneous, Amorphous and waterfronts**

## I. INTRODUCTION

Globally, the development of spontaneous waterfronts retains one of the prominent and physical development strategies required to transform the socio-economic ailment of vulnerable regions. The physical development of such environmental category may serves as a serious and scientific planning of various land uses and other facilities growing outside the direction of physical planning. However, the poor appearance and nature of spontaneous waterfronts in developing regions of the world remains a setback to the government interns of size and number of spatial arranged settlement, individual employment opportunities and entrepreneurship from agricultural, industrial, commercial, transportation and recreational economy (Researchers Survey 2022).

In Nigeria, the physical development of ample measurement of waterfronts environment exists in spontaneous structure and disconnects the hemisphere from both urban and peri-urban linkage. Such analytical challenges triggers poverty, unemployment, poor income, high population, unregulated household size, poor transportation network, realistic loss of economic expansion and presence of unhealthy environment. However, the necessary stride and physical development initiatives taken by government to curb spontaneous and informal condition of waterfronts athwart her scenery proved abortive and the dilemma unveil poor physical development orientation in developing nation to change the spontaneous scenario of waterfronts to realise more physical, social and economic benefits and formality (Researchers observation, 2022).

The additional and adequate studies that buttressed much and vigorously on representation and policy development in respect of spontaneous waterfronts conditions, challenges and proffers physical development pace have not been made available in Nigeria. It is against this experience or restricted access, the research empirically evaluate the need to identify the challenges and developmental prospect for spontaneous waterfront in Nigeria and undeniably Port Harcourt urban.

## II. DEVELOPMENT CHALLENGES OF THE WATERFRONT ENVIRONMENT/SETTLEMENT

The planning and implementation of land use plans that contains accessible transportation land uses and other spatial facilities that serves as life wire for the scientific spread of other physical development (residential, commercial, industrial, agricultural, institution and recreational land uses etc) around waterfront environs is crucial directly to the poor residing in the antediluvian borough. The group of persons are below formal income earning from planning ranking, perspective and found deficient in terms of nutrition and shelter provision. The income rates of these class of household is less stipulate standards of low group income as a matter of fact, the households are constantly at the boundary of survival as discovered by [4] that such households or group of persons are very sensitive to

indulgences and their financial status brought about by inability of government to development various land use policies that favoured the area. The expenditure survey of household designates that member of undeveloped waterfront communities' loss about 5 to 35% of their income to inadequate functional, working and aesthetic environment. From analysis, the kinds of physical development problems that demanded spatial planning policy and management reaction experienced by the poor include problems of unplanned transportation facilities, problem or cases of poor land value, industrial, social and economic development, and problem of connectivity scientific land use arrangement.

## III. INFLUENCING FACTORS OF WATERFRONT DEVELOPMENT AND DEFICIENT PUBLIC SERVICES

Spatial and scientific arrangement of various land uses motivates or attracts political, economic and social development positions. However, the steps or possibilities to achieve successful physical development in waterfront regions have been interrupted by many factors, the factors as related by [4] encompasses inadequate public facilities, infrastructural services and amenities, Pathetic framework and official assistance, informal land use activities, lack of physical planning, poor provision of necessary amenities, challenges of formative goal, difficulties of planning reaction and problem of poor and uncoordinated land uses. The deficiency or absence of public utilities in waterfronts environment and poor co-ordination among vital components and land use management scheme has equally made the settlement uninhabitable for various income class and investor, as well as persistent un-development.

## IV. THE TREND OF PHYSICAL DEVELOPMENT FOR WATERFRONTS ENVIRONS AND PRIMARY OCCUPATION

The spatial development of urban waterfront may achieve the ordering and improvement of various land uses such as agriculture, recreational/tourism, residential, transportation, commercial, industrial and other environmental development. Despite the chances of improving various land uses through technical planning and scientific spread of physical development, the development also discard urban informality. Accordingly, the development of urban waterfront must consider environmental greenery for aesthetics, surrounding and protecting the vicinity from air pollution and also the production of humidified air and standard temperature. However, the waterfronts as a crucial, spontaneous and accepted settlements is a focus of development, the environment exist with boundary neighbours, water bodies, land form, farming, fishing and active sand mining other and activities that can serve as physical development indices. The development guide or indices is similar to that of inland watercourse environment as connected [15] embraces primary economic activities such lumbering, farming, hunting, fishing, and active sand mining on manual basis constitute the means of livelihood.

## V. PREVIOUS/EMPERICAL WORK ON WATERFRONT DEVELOPMENT

The empirical analysis on physical development of amorphous waterfronts and analytical challenges have been initiated and undertaken by many researchers by researchers of different part of the world. According to [2] waterfront advancement contain both positive and negative consequences, as the reason behind the scenario is that improving waterside prettification and scenery increases environmental water pollution and flooding while making the best use of waterfront enhance more economic benefit of waterfront environ. Furthermore, the authors maintained that various problems overflowed whenever a nation plans to renovate the vacant spaces of waterfront or develop waterfront arena. [10] Revealed that users of the Nile waterfront are infrequently permissible to gain physical admittance to the waterfront, as Pictorial admittance was providing in some cases, with slight immunities.

The result also indicated that absence of longitudinal and adjacent social attachment to the waterway, poor incessant and suitable pedestrian tracks, and the totality of inadequate green areas and public services. In the Puget sound region of the United States, [7] ascertain major issues relevant for emerging project meant for peoples pointer frameworks towards revitalization of city waterfront initiative and targeted the acknowledgement of contextual situations involving potential land uses and predictable operators, ascertain the level of expansion or supervision of suitable signs for that phase, initiate and use data bases at a comparable scale to the size of the project. The exploration detailed that industrial waterfronts located in urban areas globally are witnessing reviving and redevelopment into land uses that reproduce a post-industrial economic idea of variegated urban uses associate with a varied economy and widespread array of substructure.

[13] Identified the social impacts of urban waterfront revival using four dissimilar measurements of social status, access and activities, urban waterfront planning properties and personality. The investigation buttressed on social measurement of the water bodies such as sea, lake or river to expose the qualities, resources and identity to the community and inferred that matters of such type must serve as a parameter for investigating the characteristics of three afresh dissimilar waterfront developed in Helsinki region. [10] Confirmed about procedural decision-making for the validation of the local spatial development framework for waterfronts across unplanned areas involves participating approach. The article aimed at attaining sustainability, and maximizing all about economic valorisation emanating from the revival of unplanned water frontage regions, together with socio-economic demand of a neighbourhood while the outcome realize collective objectives for stakeholders of dissimilar social strata. The work dead-ended by saying that representative plans retain momentous insinuations concerning questions of spatial justice, integrated conservative road substructure with urban regeneration.

[12] Observed that the location design, environment population, and service facilities had pointedly positive effect and traffic accessibility denotes a negative sign on the vivacity. The findings gave an indication that proved appropriate to physical planning and redesign of urban harbours. It concluded that waterfront located in cities serves as essential entrances that show the duplicate and features of the city, and evaluates their vivacity remains precedence for various studies in the years to come. [1] narrated how waterfronts natural sited in urban centres of St. Louis demonstrated good environment for municipal-based public time gone scheme, that delivers critical evaluation of addresses past event in the framework of comprehensive urban renovation approaches and identification of some challenges stumble upon in developing additional socially complete ancient descriptions. In specific, previous swot shed lighter on the experiment of harmonizing core community-development areas together with the quests for traditional tourism. The researches on the contest of case study recommend for huge prospect of ordinary communal stories to link the inhabitants of varied municipal areas perceived more evocatively to the urban landscape. [1] Demonstrated how urban waterfront revitalisation in a different port city and other urban areas located on water known to be common in almost all the developing nations. Yet, developing nations felt the impact by looking for the renewal of significant cities in post-colonial background, involving Islamic revival, urban upkeep and tourism development. The dimension prepared a variability of strategic subjects and difficulties, progressively deliberated based on extensive literature, and requested for comparison among compared study areas. The studies efforts was limited to Zanzibar's Stone Town waterfront inside a theoretical idea and initially based at European and North American participation and influenced by increasing rate globally.

[14] Considered the revitalized significant urban waterfronts as possible original environments appealing creative tourists. The specific objectives the study recognised include: investigate the impact of urban waterfront dwellers forced eviction on housing development in the two mega cities in Nigeria, Lagos and Port Harcourt. The second objective is to examine the impact urban waterfront dwellers forced eviction has on security of life and properties of the evicted victims. Finally, is discussed the impact of these evictions on the social support system in the two Nigerian cities. By doing so, the article reviewed the connection between waterfronts and urban functions of port-cities several years ago, before revolving to the evaluation of momentous waterfronts' revitalization as creative milieus to multitude original industries while the analysis confronted paste energized lakefronts may performance as original settings, built on port-cities' genius loci as multicultural area of lay to rest cultural declaration, delivery a second option for the urban cultural tourism serving as a rotation helm for the renewal of the urban environ. [9] said various ways indicates fruitful in bracing major urban zones and contested waterfront improvements. They unveil many facet of physical planning conflicts deterring the re-planning and redevelopment of waterfronts globally: (a) land ownership, (b) heritage and culture, (c) social and environmental justice, and (d) environment and resilience. The view identified that the rising worries over social justice and environmental resilience whenever waterfront revitalizations is planned remains a challenge factor for cities in time to come.

[3] Concentrated more on refurbishing the native water quality, improving environmental management, and upgrading standard of living for waterway inhabitants. The serious exploration show that the scheme that cut across the three urban waterfronts ought to assist in various ways and may donate to the metropolises' bearable growth. But watercourses might not be reinstated to untouched situations; as the incremental enhancements seem to be a essential facilitator for bearable city progress. [6] Assess and classified the functions of experimental scheme and parade zones along the Huangpu River. These settlements and areas remain imaginary when it comes to controlling of the city renewal especially the previous post agricultural waterfronts and to hurry inventive growth in Shanghai and the environs of Yangtze Delta Region. The critical analysis concluded that Shanghai in china sometimes function as a centre that present and attempt to experiment innovative concepts.

## VI. METHODS AND PROCEDURE

The integration of secondary and primary sources of data constitutes the procedure and methodology of the research. The primary sources of data necessary for the study was nothing but a questionnaire purposely organised to elicit reactions from the waterfronts inhabitants and to cover subject matters such as the biometric data of the respondent, factors militating against waterfront redevelopment, and way forward for the realization of waterfront that compete with the global community. The secondary source of information that assisted this research gained importance from earlier works on the need to demolish and resettle waterfront communities from unpublished and published resources. The published resources called second hand data were imitative of several references such as books, research work, conference/seminar and working paper, government records and reports etc.

The sampling stratified the waterfronts based on identified communities after which six communities were nominated for the investigation. An aggregate of 450 replicas of questionnaires were distributed to the waterfront in six selected communities of dissimilar locations (Elechi beach, Bundu, Borikiri, Emenike, Marine Base and Nembe waterside) 435, representing 89 percent were completed and returned for analysis in Port Harcourt urban. Nembe waterside community got the highest number of questionnaire with 139 in lieu of (35. %), Borikiri, got 125 questionnaire representing (30. %), bundu 75 (13%), Elechi beach 38(10%), Emenike 31 (8%) and Marine Base 25 (5%) of the sample size. see table 1).

Table 1: The Sampled Waterfront Communities and Projected Population in Port Harcourt

| S/N | Waterfront | Projected Population | Household Population | Size | % |
|---|---|---|---|---|---|
| 1 | Nembe waterside | 134,172 | 18,421 | 139 | 35 |
| 2 | Borikiri | 74,000 | 12,334 | 125 | 30 |
| 3 | Bundu | 30,00 | 6,653 | 75 | 13 |
| 4 | Elechi beach | 16,126 | 1742, | 38 | 10 |
| 5 | Emenike | 24,553 | 4,517 | 31 | 08 |
| 6 | Marine Base | 22, 456 | 3,207, | 25 | 05 |
| TOTAL | 301, 307 | 46, 874 | 435 | 100 | |

## VII. RESULT AND DISCUSSION

### *Development Challenges of Spontaneous Waterfronts in Port City of Nigeria*

The result of the survey shows that the host communities identified government at various levels as the major accountable issue militating against the development of spontaneous waterfronts with 29.5 % blaming value on government. Majority of the waterfronts resident insisted that all the responsibilities for development of waterfronts rest within the ambient of the government. Moreover, 14.5% of the respondents were of the opinion that the factors responsible for non-development of spontaneous waterfronts resulted from total clearance approaches commonly adopted for spontaneous waterfronts development. This presupposed that the total clearance approach is always adopted by government whenever the development of spontaneous waterfronts is taking place. In other words, the government is not bothered about temporary settlements of the population affected before the commencement of total clearance. Accordingly, 12.5 % of the spontaneous waterfronts population confirmed that the loss of social justice stood as general factor expected to be address before demolition and development of spontaneous waterfronts. Other famous problem are land ownership, heritage, /culture, social and environmental justice, damage environmental resilience, hurt housing, defeat of occupation, loss of natural green area, and water pollution increase etc. Furthermore, the entire findings clarified that government is expected to do more on the development of spontaneous waterfronts environment. Therefore, total involvement of stakeholders' participation in built environment is necessary in addressing spontaneous waterfronts development issues globally.

Table2: Spontaneous Waterfront Development Challenges in Port City Nigeria

| S/N | Waterfront development Challenges | Frequency | Percentage | RNK |
|---|---|---|---|---|
| 1 | government inattention | 28 | 7.5 | 5 |
| 2 | Heritage,/culture | 15 | 3.5 | 9 |
| 3 | Social justice | 21 | 6.5 | 6 |
| 4 | Loss of environmental resilience | 12 | 1.5 | 11 |
| 5 | Loss of housing | 37 | 9.5 | 4 |
| 6 | Loss of occupation | 18 | 4.5 | 8 |
| 7 | Total clearance nature of waterfront revival | 49 | 14.5 | 2 |
| 8 | environmental justice | 41 | 12.5 | 3 |
| 9 | Loss of natural green area | 21 | 6.5 | 6 |
| 10 | Land ownership | 92 | 29.5 | 1 |
| 11 | Increases water pollution | 14 | 3.5 | 9 |
| TOTAL | | 348 | 100 | RNK |

Source: Authors Field survey 2022

### *Analysis of Development Sustainability and Spontaneous Waterfronts Settlement*

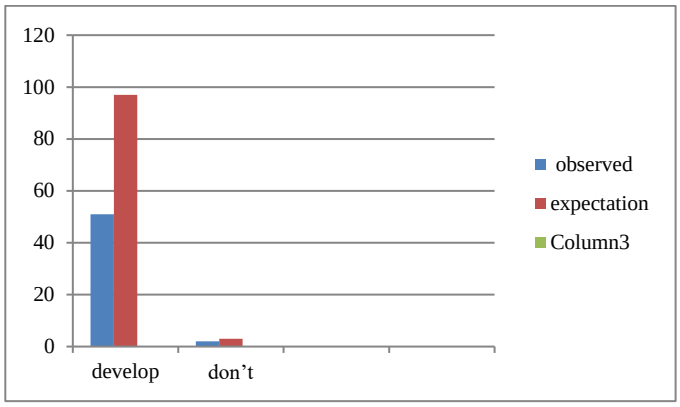
The breakdown or resolution of the analysis detained on table 3 summarised that 51% of the spontaneous waterfronts settlers strongly observed, proved and attested that development of waterfronts through technical planning must enhanced sustainability, spatial arrangement of land uses and control especially in developing countries and Port Harcourt urban and suburb of Nigeria. In addition, the examination maintained that the settlement observed 51% and 97% expected physical development of urban waterfront through physical planning approach as in contradiction to 5% populace who pointed observations and expectant to that influence. Though, the considered implication value of 126. 45 revealed an advanced scientific value greater than the desk value of 3.84 verified at 1 or sole degree of freedom. The applied analysis narrated that development of urban waterfronts must trigger the upgrading of various aspect of the city and reduces the presence of slum, blight and squatter's settlement that characterised the littering and dumping of waste in unauthorised sites, residing in uncompleted buildings, obstruction of roads, incompatible and excess development of lands and noncompliance with development control orders and publications. Furthermore, the analytical observation and expectation positively influence nearby hemisphere in terms of physical, economic and social development especially the economic growth and property values of opposite and adjacent communities, villages and streets and cities serving as boundary neighbours.

Table 3: Population Expectation and Analysis for waterfront development

| Population | Observed | Expected | Df | Sig | $X^2$-cal | $X^2$- t cal | Rejected |
|---|---|---|---|---|---|---|---|
| Develop | 135(51%) | 300(97%) | 1 | 0.05 | 126.44 | 3.84 | Ho |
| Don't | 05 (02%) | 7 (03%) | | | | | |

Source: researchers survey 2022

Figure 1: Bar chart showing Respondents Observation and Expectation Analysis




Source: researchers survey 2022

## VIII. CONCLUSION

This study has shown that development challenges of spontaneous waterfronts have many disadvantages and as well truncated the socio- economic development of the local destination and their neighbouring settlements. Based on the research findings, it is concluded that spontaneous waterfronts are developed to aid socio-economic development and the major developmental challenges of these waterfronts are blamed on government, land ownership, heritage,/culture, social and environmental justices, loss of environmental resilience, loss of occupation, total clearance nature of waterfront revival, loss of all life supporting activities, loss of natural green area, land ownership and increases water pollution.

## IX. RECOMMENDATION

The development challenges of spontaneous waterfronts in Port Harcourt will decline through government and built environment advocates. Thus, government and built environment stakeholders or advocates must work in synergy to identify and resolve the physical challenges and of spontaneous waterfront to induce socio-economic growth in the host settlements. Therefore, the government and built environment stakeholders must provide an enabling environment to enhance development and sustainability of spontaneous waterfronts.

Considering the research findings, it is obvious that development of waterfronts will create positive socio-economic impact on neighbouring communities. The government should extend development to these areas to serve as a spring board for environmental sustainability. There is need for the government to further plan the various land use activities in direction to advance the environmental quality and inhabitable waterfronts settlements. The advancement of various waterfronts and linkage to other communities is suggested to enhance the development and create job opportunities to the residents and improve their socio economic condition. Last of all, government should come up with policy implementation strategy that would protect the environment. The policy should be harnessed in such a way that it will ensure the sustainability of the spontaneous waterfronts. These recommendations may facilitate scientific spread of physical development in spontaneous waterfronts and maximize developmental disparities and rural- urban migration common in waterfront.

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