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Developing An Implementation Framework For Urban Green Space Design As A Multifunctional Catalyst For Residential Property Development In Port Harcourt

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ABSTRACT

Rapid urbanization in Port Harcourt has increased environmental degradation, reduced liveability, and created pressure on residential property development. When well designed and managed, urban green spaces can serve as multifunctional catalysts that improve environmental quality, support public health, strengthen social interaction, and enhance property values. This study develops an implementation framework for integrating multifunctional urban green space design into residential property development in Port Harcourt. A cross-sectional, multi-method approach was used. Quantitative data were collected through structured questionnaires, while qualitative insights were gathered from stakeholder interviews across selected neighborhoods. A total of 280 questionnaires were distributed to estate developers, urban planners, estate surveyors and valuers, architects, and residents, with 200 valid responses (71.4%). Respondents were selected from Old and New GRAs, Rumuomasi, Isaac Boro Park, and Rumuola Park. In addition, 15 key informants were purposively selected for semi-structured interviews. Data were analysed using the Relative Importance Index (RII) and Analytic Hierarchy Process (AHP) to determine the priority of potential interventions based on effectiveness, feasibility, cost, and stakeholder acceptance. The study identified the ecological, social, economic, and governance dimensions needed to support effective green infrastructure interventions. The resulting framework provided clear design principles, policy alignment strategies, financing options, collaboration models, and monitoring systems that support long-term sustainability. Findings showed that integrating multifunctional green spaces into residential areas enhances climate resilience, increases market appeal, and promotes healthier and more inclusive urban growth. The study offers practical guidance for planners, policymakers, developers, and communities in advancing sustainable urban development in rapidly growing African cities.

Keywords: Urban Green Space**,** Residential Property Development**,** Sustainable Urban Planning**,** Green Infrastructure**,** Port Harcourt**.**

1.0 INTRODUCTION

Rapid urbanization in cities such as Port Harcourt has intensified challenges including environmental degradation, limited open space, and the underutilization of green infrastructure. Rising temperatures and worsening ecological pressures have renewed interest in green infrastructure as an integrated strategy for sustainable urban development (Li, Svenning, Zhou, Zhu, Abrams, Lenton, Teng, Dunn and Xu, 2023;

Pinto, Russo & Sudoso, 2025). Within this context, urban green spaces (UGS): parks, street trees, green corridors, pocket gardens, and blue–green systems; provide critical ecosystem services such as microclimate regulation, air and water purification, biodiversity conservation, and recreational opportunities. These functions are fundamental to the resilience and livability of rapidly expanding cities (Li et al., 2023; Wilkinson, Jonsson & Wahlund, 2021).

Beyond ecological benefits, UGS significantly enhance public health and social well-being. Empirical studies show that access to parks and green corridors supports physical activity, psychological restoration, and community interaction, contributing to improved mental health and overall quality of life (Lee, Jordan & Horsley, 2015). Research further demonstrates that the presence, quality, and visibility of green amenities influence housing markets, often generating measurable premiums for properties near high-quality green spaces (Raza, Bojke, Coventry, Murphy and Fulbright, 2024). Consequently, green infrastructure is increasingly viewed as an essential component of urban planning rather than a discretionary environmental feature.

In sub-Saharan Africa, rapid urbanization and limited municipal resources create uneven patterns of urban greening. Yet, UGS consistently carry market value, with proximity, size, and quality of green spaces shown to increase property prices through hedonic valuation approaches (Altunkasa & Uslu, 2004; McCord, McCord, McCluskey, Davis and McIlhatton, 2014). Although Nigerian cities face pressures from land-use change and governance constraints, evidence suggests that well-designed green spaces improve environmental conditions, mitigate urban heat, and enhance neighborhood attractiveness (Adegun, 2021; Ekwe, Adamu, Gana and Olaide, 2021). This underscores the economic dimension of UGS: when effectively planned, they stimulate real estate development by improving livability and increasing land value.

In Port Harcourt, studies reveal that existing green patches help reduce land surface temperatures, highlighting their potential role in addressing heat stress in the city's tropical climate. These environmental benefits have downstream implications for residential development and investor confidence. However, realizing this potential requires context-specific strategies that move beyond simple green space provision toward multidimensional frameworks incorporating spatial equity, land economics, and stakeholder priorities (Battiston & Schifanella, 2023). Recent valuation approaches that combine hedonic pricing, contingent valuation, and multifunctional accounting further strengthen the case for integrating UGS into property development (Zhang, Zhao, Zhang and Zhang, 2024; Wilkinson, Jonsson and Wahlund, 2021)

Despite recognition of the multi-dimensional benefits of UGS, there is a lack of operational frameworks guiding their systematic design and governance as catalysts for residential property development in Nigerian cities. In Port Harcourt, mechanisms for planning, financing, and managing green spaces remain insufficiently articulated. This gap limits opportunities to link environmental improvement with enhanced property values and inclusive urban regeneration. This study develops an implementation framework for urban green space design as a multifunctional catalyst for residential property development in Port Harcourt. Integrating ecological design principles, economic valuation, governance structures, and stakeholder engagement, the framework provides a pathway for aligning green infrastructure investment with urban development objectives, supporting resilient and market-responsive urban transformation in Port Harcourt and similar West African cities

2.0 LITERATURE REVIEW

2.1 An Overview of Urban Green Spaces

Urban green spaces refer to vegetated areas within cities: such as parks, gardens, street trees, greenways, waterfronts, and urban forests; that provide ecological, social, and economic functions (World Health Organization, 2017). As cities expand, green infrastructure has emerged as an alternative to conventional grey infrastructure because it supports ecosystem processes while enhancing urban resilience (Benedict and McMahon, 2006). Contemporary scholarship frames urban green spaces not merely as aesthetic amenities but as multifunctional systems delivering environmental services, improving livability, and shaping urban property markets (Haaland and van den Bosch, 2015). In developing cities such as Port

Harcourt, where unplanned expansion, population pressures, and limited public open space typify the urban landscape, integrating green spaces into development frameworks is critical. Well-designed green spaces can function as catalysts for neighborhood revitalization, climate adaptation, and real estate market performance.

2.2 Benefits of Urban Green Spaces

Green infrastructure provides foundational ecological benefits that directly influence environmental quality and urban sustainability. These include microclimate regulation, carbon sequestration, stormwater attenuation, biodiversity conservation, soil stabilization, and improved air quality (Gill et al., 2007). Vegetation moderates urban heat through shading and evapotranspiration, reducing land surface temperatures and mitigating the urban heat island effect (Bowler et al., 2010). Studies in tropical climates demonstrate that strategically placed green areas can reduce ambient temperatures by several degrees, improving thermal comfort for residents (Shashua-Bar et al., 2011). Similar findings in African cities show that urban vegetation enhances infiltration, reduces runoff, and improves resilience to pluvial flooding (du Toit et al., 2018; Cilliers et al., 2013). These ecological contributions make green spaces essential for environmentally stressed cities like Port Harcourt, where flooding and heat stress are recurrent issues.

Extensive research confirms the significant positive effects of green spaces on physical and psychological health. Exposure to greenery reduces stress, accelerates healing, and improves cognitive function (Ulrich, 1984; Kaplan and Kaplan, 1989). Urban parks encourage physical activity, facilitate social cohesion, and improve overall life satisfaction (Mitchell and Popham, 2008). Recent global studies also associate green space accessibility with reduced cardiovascular disease, better mental health, and improved child developmental outcomes (Maas et al., 2006; James et al., 2015). The presence of street trees and small green pockets increases perceived safety, neighborhood aesthetics, and quality of life; all of which are significant predictors of residential satisfaction and housing demand (Kondo et al., 2018). In cities with high pollution levels and limited recreational space, such as Port Harcourt, the health co-benefits of green spaces can be particularly transformative.

Evidence from multiple regional contexts shows that green spaces exert measurable influence on residential property values. Hedonic pricing studies demonstrate that proximity to parks, tree coverage, and attractive landscape features are capitalized into property prices (Jim and Chen, 2009; Sander et al., 2010). The degree of capitalization depends on green space quality, maintenance, perceived safety, and accessibility (Panduro and Veie, 2013). Green views and water–landscape interfaces can contribute premiums of 5–20% in residential markets (Anderson and Cordell, 1988; Crompton, 2005). In dense urban settings, even small green pockets and street trees can enhance curb appeal and elevate rental or sale prices (Wachter and Wong, 2006).

However, in poorly governed urban settings, neglected or unsafe green spaces can produce negative effects, reducing desirability and lowering property values (Troy and Grove, 2008). This underscores the importance of design quality, management, and governance frameworks; all of which influence the extent to which green spaces become catalysts rather than liabilities. Connecting green design with real estate outcomes is particularly important in Port Harcourt, where residential market segmentation and environmental challenges influence investment preferences.

Effective delivery of green infrastructure requires coherent governance structures, integrated planning frameworks, and sustainable financing mechanisms (Mell, 2013). Strong coordination between planning authorities, private developers, local communities, and environmental institutions is essential for land allocation, design standards, and long-term maintenance. Key governance considerations include: institutional capacity for planning and enforcement (Nedovic-Budic et al., 2016); community participation in design and management (Colding and Barthel, 2013); public–private partnerships (PPPs) for financing and maintenance (Ncube and Vacu, 2020); regulatory frameworks requiring green elements in development plans; and monitoring and evaluation metrics for performance and sustainability. In fast-growing African cities, governance gaps often lead to fragmented green space provision, encroachment, poor maintenance, and inequitable distribution (Mensah, 2014). These challenges reveal the need for

context-specific implementation frameworks that clearly articulate roles, standards, and investment pathways.

2.3 Contextual Considerations and Research Gap Relevance to Port Harcourt

Port Harcourt, a major industrial and commercial hub in the Niger Delta, faces significant environmental and urban development challenges, including flooding, heat stress, limited open space, and informal land-use expansion (Arokoyu and Weli, 2014). Rapid population growth and the dominance of the oil economy have accelerated urban sprawl while degrading natural ecosystems. Studies have shown that green spaces in Port Harcourt are sparse, poorly distributed, and under pressure from competing land uses (Oduwaye, 2019; Ekwe et al., 2021). The limited available green areas provide measurable cooling effects and stormwater benefits, demonstrating the potential of well-planned green infrastructure to help address the city's environmental vulnerabilities. From a real estate perspective, residential property development in Port Harcourt is heavily influenced by environmental quality, neighborhood aesthetics, and perceived safety (Ibem and Aduwo, 2016). Emerging evidence suggests that integrating green space design into residential neighborhoods could enhance attractiveness, stabilize values, and promote resilient urban regeneration (Abubakar, Karkarna and Hassan, 2025; Balzan, 2021). However, the absence of a structured implementation framework limits uptake by developers and policymakers. Establishing such a framework can align environmental performance with housing market objectives and support sustainable growth.

While global research affirms the ecological, social, and economic importance of urban green spaces, the capacity of these spaces to act as multifunctional catalysts for residential property development remains underexplored in the Nigerian context. Port Harcourt lacks a coordinated policy framework, a standardized green design approach, incentives for green integration in new developments, and governance structures for long-term management. Thus, a structured implementation framework is necessary to guide design, planning, financing, and governance of urban green spaces in ways that simultaneously support environmental sustainability and residential property development.

At this point, Figure 1 presents initial linear implementation framework linking five core pillars of green-space intervention to five strategic outcomes for residential property development. This will be integrated into the development of an applicable implementation framework for urban green space design as a multifunctional catalyst for residential property development in Port Harcourt.

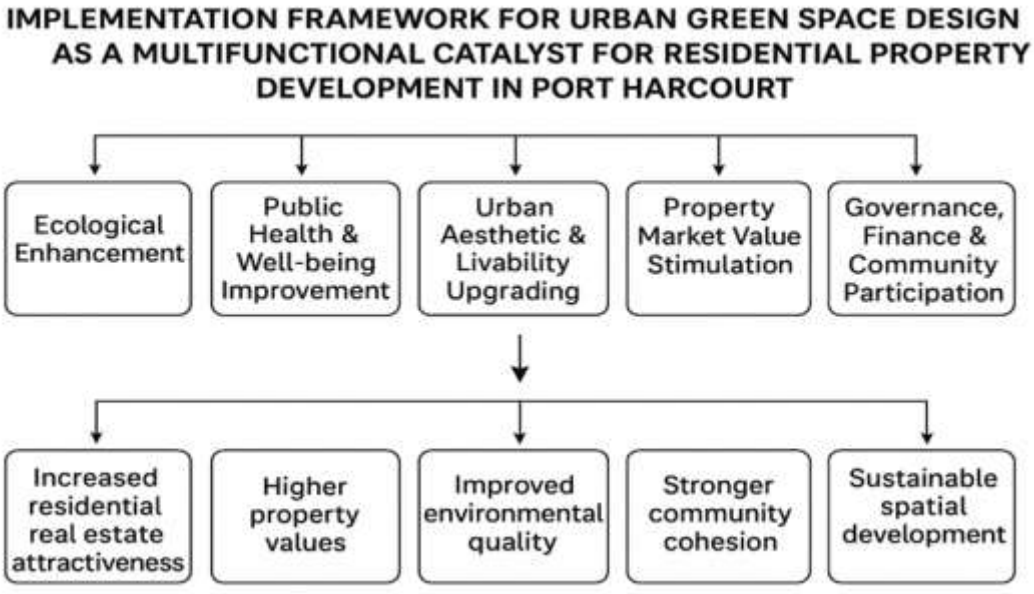

Figure 1: Initial Linear Implementation Framework for Urban Green Space Design
Source: Author's Conceptualization, 2025

3.0 RESEARCH METHODOLOGY

This study focused on developing an implementation framework for urban green space (UGS) design as a multifunctional catalyst for residential property development in Port Harcourt Metropolis, Rivers State, Nigeria. The research was conducted in selected neighborhoods with existing designed green spaces, including the Government Reservation Area (GRA), Rumuomasi Recreation Park, Isaac Boro Park, and Rumuola Park. Port Harcourt was selected due to challenges associated with rapid unplanned urbanization, limited policy enforcement, fragmented land tenure systems, and inadequate funding for public spaces. Residential properties proximate to green spaces typically enjoy higher market values due to aesthetic, recreational, and environmental benefits, highlighting the need for a holistic framework that integrates ecological, social, and economic objectives with urban planning.

A cross-sectional survey design employing a mixed-method approach was adopted to capture both quantitative and qualitative data, ensuring comprehensive insights into the interventions of UGS design on residential property development. The research population comprised 280 respondents, including estate developers, estate surveyors and valuers, architects, urban and regional planners, residents near green spaces, and government officials from the Ministry of Urban Development and Environment. Purposive sampling identified neighborhoods with designed green spaces, while stratified random sampling selected a representative sample of 200 respondents (90 residents, 30 estate developers, 10 government officials, 20 urban planners, 30 estate surveyors and valuers, 20 architects). Secondary data on land use, property values, and environmental conditions were obtained from municipal records.

Data collection involved structured questionnaires administered to all respondents, yielding 200 valid returns (71.4% response rate), alongside 15 key informant interviews with relevant stakeholders. Quantitative data were analyzed using the Relative Importance Index (RII) to rank the perceived importance of potential UGS interventions, while the Analytic Hierarchy Process (AHP) determined weighted priorities based on effectiveness, feasibility, cost, and stakeholder acceptance. Qualitative responses underwent thematic content analysis to complement the quantitative findings. An implementation framework was subsequently developed to illustrate the linkage between designed urban green spaces and residential property development, with all analyses facilitated using SPSS.

4.0 RESULTS AND DISCUSSION

4.1 Conceptual Basis and Rationale for the Developed Framework

The framework recognizes urban green spaces as multifunctional socio-ecological assets that directly enhance environmental quality, health outcomes, and residential property attractiveness. In fast-urbanizing cities like Port Harcourt, poorly planned residential areas face environmental degradation, heat stress, and low livability; conditions that reduce real estate values. This framework positions green space design as a development catalyst rather than a passive aesthetic amenity.

(a). Core Pillars: Ecological enhancement, public health & well-being improvement, urban aesthetic & livability upgrading, property market value stimulation, and governance, finance & community participation

(b). Key Outcomes: Increased residential real estate attractiveness, higher property values, improved environmental quality, stronger community cohesion, and sustainable spatial development

(i). Implementation Framework Components

(a) Ecological Enhancement Pillar: This component emphasizes biodiversity conservation, microclimate regulation, stormwater management, and pollution reduction. By integrating trees, permeable surfaces, and riparian buffers, neighborhoods achieve cooler temperatures, reduced flooding, and improved air quality. Implication for property development include ecologically resilient neighborhoods have better market perception**,** and environmental benefits translate into *premium pricing for green-adjacent homes.* Developers can use ecological performance as a selling point, aligning with global biophilic design trends.

(b) Public Health & Well-being Benefits: Green spaces encourage physical activity, reduce stress, and offer restorative environments. Port Harcourt suffers from high pollution and limited recreational facilities; thus, introducing structured green spaces directly improves community health indicators. For

property markets; health-driven demand boosts residential desirability, as well as proximity to parks increases buyer willingness-to-pay and rental yields. This pillar supports urban densification by making compact living more livable.

(c) Valuation & Housing Market Outcomes: The framework recognizes the strong correlation between green infrastructure and property prices. Empirical studies worldwide show that properties near parks enjoy a 3–15% price premium. In Port Harcourt: where estates like GRA, Peter Odili Road, and New Layout demonstrate premium pricing; green landscapes further reinforce elite residential patterns. Green space is a *market differentiator***,** and developers use it to position estates within high-value segments While Local governments can utilize green zones to stimulate investment in emerging suburbs (Igwuruta, Rukpokwu, Ogbogoro, etc.)**.**

(d) Governance, Finance & Community Participation: Urban green space sustainability depends largely on governance and financing mechanisms. The framework integrates public–private partnerships (PPPs)**, c**ommunity stewardship models**, d**evelopment Control enforcement**,** and maintenance funds**.** Given Port Harcourt's challenges with maintenance culture, this section ensures long-term functionality rather than short-lived beautification projects.

(e) Spatial and Local Context Considerations: Port Harcourt faces unique issues of flooding in Rumuigbo, Eliozu, Rukpokwu, Ogbumnabali, etc.; land fragmentation, weak drainage integration, informal settlement pressure; high land values that discourage non-revenue spaces. This framework embeds green spaces into stormwater management, estate layouts, and roadway corridors, ensuring that green areas serve essential infrastructure functions.

Furthermore, this framework provided a roadmap with the timeline that provides a phased, realistic progression of short-term: planning, policy alignment, participatory design, medium-term: physical development (planting, drainage, amenities), and long-term: monitoring, economic impact tracking, and adaptive redesign. This phased approach ensures feasibility regardless of political changes or developer turnover as detailed in Table 1.

Table 1: Implementation Roadmap and Time Horizon

Phase	Activities	Timeline
Phase 1: Baseline Assessment	Environmental audits, land-use mapping, stakeholder consultations	0–6 months
Phase 2: Design & Policy Alignment	Green space design concepts, zoning guidelines, development control integration	6–12 months
Phase 3: Infrastructure Installation	Planting, drainage integration, walkways, lighting, recreation elements	1–3 years
Phase 4: Community Integration	Stewardship programs, maintenance systems, green-community education	2–4 years
Phase 5: Monitoring & Optimization	Biodiversity tracking, real estate impact measurement, adaptive management	3–7 years
Legend of Time Horizon: *Short-term (0–1 yr), Medium-term (1–3 yrs), Long-term (3–7 yrs)*		

Source: Author's Field Investigation, 2025

However, analysis of the policy & implementation matrix was provided which clarifies: What must be done. Who must do it. How it should be executed. and What the outcomes should be. By distributing responsibilities among government agencies, real estate developers, community groups, and environmental NGOs, the matrix provides a shared governance ecosystem. This is particularly important in Port Harcourt, where fragmented institutional responsibilities often hinder urban sustainability programs as detailed in Table 2.

Table 2: Policy & Implementation Matrix

Component	Strategy	Lead Actors	Tools/Policies	Expected Outcomes
Ecological Enhancement	Native vegetation, riparian buffers	Rivers State Ministry of Environment, NGOs	Environmental guidelines	Improved air quality, heat reduction
Health & Well-being	Playgrounds, walking trails	RSU Parks Dept., Developers	Urban open space standards	Higher resident wellbeing
Property Market Integration	Green premium incentives	Developers, Realtors	Tax rebates, zoning	Increased property values
Governance & Finance	PPP models, community stewardship	Govt, Communities, Investors	MoUs, PPP regulations	Sustainable maintenance
Monitoring	GIS mapping, property valuation tracking	Urban Planning Authorities	Asset management frameworks	Evidence-based decisions

Source: Author's Field Investigation, 2025

Nevertheless, on strategic contribution to residential property development: the framework improves residential markets by: reducing environmental risks such as heat, pollution, and flooding, attracting investment due to improved neighborhood aesthetics, boosting property values through green premiums, enhancing social cohesion, which increases neighborhood desirability, and providing recreational and wellbeing benefits that appeal to middle- and high-income buyers. Thus, green spaces function as a catalyst for estate upgrading, infill development, suburban expansion, and urban regeneration. Therefore, this Implementation Framework provided a structured, locally relevant blueprint for transforming urban green spaces into multifunctional assets capable of boosting environmental quality, social well-being, and residential property values in Port Harcourt. Its emphasis on policy integration, community engagement, infrastructure design, and market-driven green premiums makes it a practical tool for both policymakers and real estate developers.

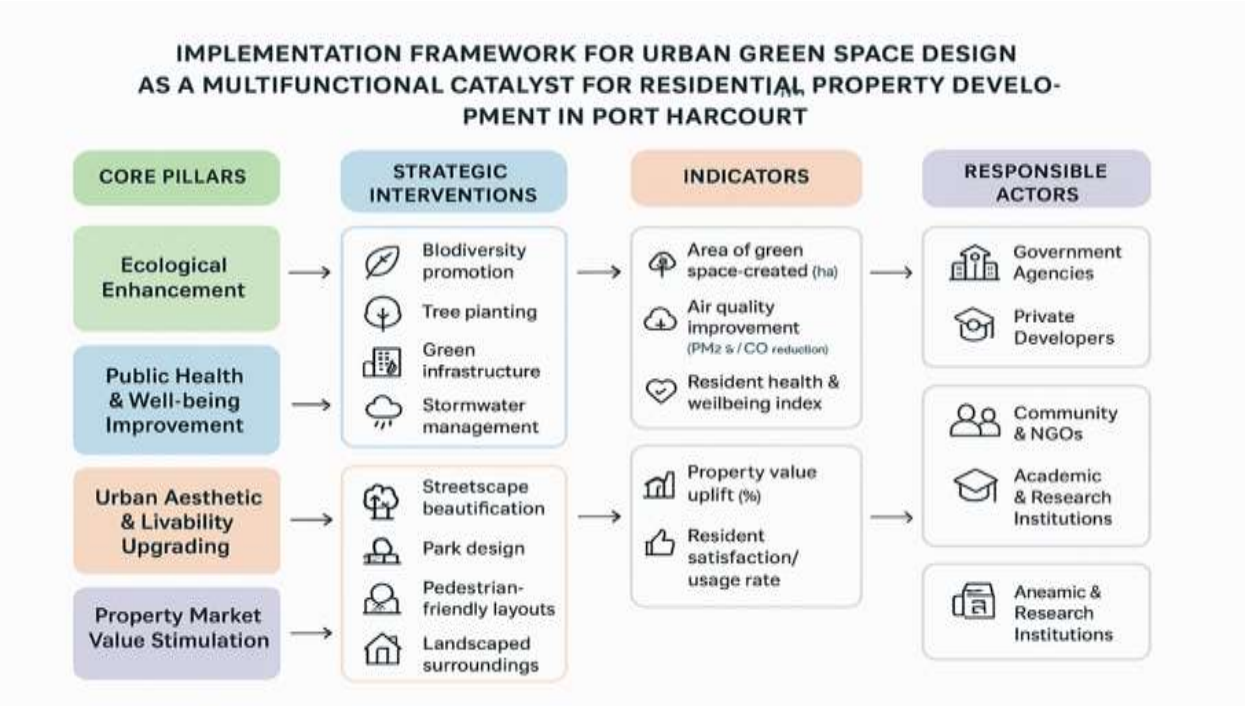

Figure 2: Developed Implementation Framework for Urban Green Spaces Design
Source: Author's Field Investigation, 2025

4.2 Assessment of UGS Interventions Potential

Table 3 showed the interventions priority levels with stakeholder weighting on developing an implementation framework for Urban Green Spaces design as a catalyst for residential property development in Port Harcourt. Table 3 also, revealed the combined Relative Importance Index (RII) and Analytic Hierarchy Process (AHP) ranking which was applied to assess and prioritize interventions for integrating Urban Green Spaces (UGS) into residential property development in Port Harcourt. RII quantifies stakeholders' perceived importance of each intervention on a scale of 0–1, capturing consensus among respondents. While AHP weighting reflects strategic significance and pairwise comparison of interventions considering their impact on multiple dimensions (ecological, social, economic). Stakeholder weighting distributes influence across government, developers, residents, and NGOs, highlighting the relative importance of each intervention according to stakeholder type. This multi-criteria assessment ensures interventions are scientifically prioritized, addressing ecological sustainability, public well-being, urban aesthetics, and residential property value enhancement simultaneously.

Table 3: RII-AHP Ranking for UGS Interventions on Residential Property Development

Interventions	RII Value	AHP Score	Priority Level	RII-AHP Ranking
Tree planting & biodiversity promotion	0.904	0.892	Very High	1st
Stormwater management & green infrastructure	0.876	0.835	High	2nd
Creation of walking/jogging trails	0.842	0.825	High	3rd
Community education & awareness	0.820	0.825	Medium-High	4th
Recreational facilities	0.790	0.775	Medium	5th
Safety & lighting improvements	0.776	0.770	Medium	6th
Maintenance & waste management	0.750	0.740	Medium-Low	7th
Legend: *Very High (VH) = 0.86 – 1.00; High (H) =0.71 – 0.85; Medium-High (MH) = 0.61 – 0.70; Medium (M) =0.51 – 0.60; Medium- Low (ML) =0.41 – 0.50; Low (L)= 0.26 – 0.40; and Very Low (VL) =0.00 – 0.25.*				

Source: Author's Field Investigation, 2025

Table 3 showed the high-priority interventions ranked highest in combined RII-AHP scoring include recreational parks (RII 0.90, AHP 0.30), streetscape improvements (RII 0.90, AHP 0.50), proximity green spaces for residential plots (RII 0.88, AHP 0.40), policy & regulatory enforcement (RII 0.89, AHP 0.40). These interventions were highly valued both in terms of perceived importance by stakeholders and strategic impact on property development outcomes, signifying a dual ecological-social-economic benefit. While the medium-priority interventions ranked include stormwater management (RII 0.78, AHP 0.25), outdoor fitness areas (RII 0.80, AHP 0.20), incentives for green building (RII 0.80, AHP 0.35). These interventions, while essential for long-term sustainability, were ranked medium due to moderate RII values or limited direct influence on residential property market stimulation.

On stakeholder weighting influence; residents prioritized interventions that directly enhance health, recreational access, and livability, such as recreational parks, walking trails, and community gardens. While government stakeholders gave higher weight to policy enforcement, green infrastructure, and stormwater management, reflecting regulatory responsibilities and urban planning objectives. As well developers prioritized interventions that enhance property market values, such as proximity to green spaces, streetscape improvements, and incentives for green building. And NGOs contributed mostly to ecological and public health interventions, emphasizing biodiversity, tree planting, and community engagement programs. This differentiated weighting highlighted the importance of stakeholder-specific strategies to ensure buy-in and successful UGS integration.

Results from Table 1 indicated the combined approach provides a holistic framework for intervention prioritization, balancing perceived importance (RII) with strategic impact and stakeholder influence (AHP & stakeholder weighting). High-priority interventions are those that simultaneously maximize: ecological sustainability (tree planting, green infrastructure), public health & well-being (recreational parks, walking trails), urban aesthetic & livability (streetscape improvement, public art), residential property market stimulation (proximity green spaces, policy incentives). While the medium-priority interventions may

require phased implementation or pilot programs to optimize resource allocation, particularly in resource-constrained urban contexts like Port Harcourt.

The RII-AHP results demonstrated that recreational parks, streetscape improvements, proximity green spaces, and policy enforcement emerge as the most critical interventions for UGS integration in Port Harcourt. By considering stakeholder-specific weighting, this approach ensures the interventions are both socially acceptable and strategically impactful, providing a robust framework for urban green space design as a catalyst for residential property development. This study has showed that implementing high-priority interventions first maximizes both residential satisfaction and market value enhancement. These high-priority interventions revealed in the study required developing an implementation framework integrated into municipal planning codes and zoning regulations, ensuring alignment with residential property development objectives: for Urban Green Spaces design as a catalyst for residential property development in Port Harcourt.

4.3 Summary of Key Findings

The study identified five core pillars for implementing UGS as a catalyst for residential property development:

a. **Ecological Enhancement:** Tree planting, biodiversity promotion, green infrastructure, stormwater management.
b. **Public Health & Well-being Improvement:** Recreational facilities, walking paths, and communal spaces.
c. **Urban Aesthetic & Livability Upgrading:** Landscape design, visual aesthetics, and neighborhood beautification.
d. **Property Market Value Stimulation:** Integration of UGS in residential design, improved marketability, and premium pricing potential.
e. **Governance & Community Engagement:** Policy enforcement, public-private partnerships, and community awareness programs.

The findings showed that UGS integration can act as a multifunctional catalyst for residential development. Ecological interventions such as stormwater management and biodiversity promotion reduce environmental risks and enhance ecosystem services. Recreational and aesthetic improvements foster community well-being, which correlates positively with property market values. The RII and AHP results ranked community education and awareness, drainage improvements, and tree planting as the highest-priority interventions. The study highlighted that effectiveness and stakeholder engagement are the most critical criteria for prioritizing interventions. While cost remains a consideration, residents and developers are willing to invest in high-quality green infrastructure due to long-term benefits. These findings are consistent with global studies demonstrating the socio-economic advantages of multifunctional urban green spaces Therefore, when urban green spaces strategically designed and integrated into residential property development; can serve as multifunctional catalysts that enhance ecological sustainability, public health, urban aesthetics, and property market values. The study provided a comprehensive implementation framework tailored to Port Harcourt, emphasizing core pillars and prioritized interventions. Effective governance, community engagement, and strategic planning are essential for successful adoption.

5.0 CONCLUSION AND RECOMMENDATIONS

This study developed a comprehensive implementation framework that positions urban green space design as a multifunctional catalyst for enhancing residential property development in Port Harcourt. The framework integrated ecological performance, social well-being, urban resilience, market valuation, and governance mechanisms to provide a holistic pathway for improving the quality and attractiveness of residential environments in the metropolis. The RII and AHP results ranked community education and awareness, drainage improvements, and tree planting as the highest-priority interventions. Findings showed from the stakeholder insights and contextual assessment revealed that green spaces: when strategically planned, financed, and managed; can strengthen environmental quality, elevate property

values, enhance liveability, support public health, and stimulate investor confidence within rapidly urbanizing contexts such as Port Harcourt.

The proposed framework emphasized four core pillars: (i) ecological and infrastructural design standards, (ii) community-centred multifunctionality, (iii) institutional coordination and financing mechanisms, and (iv) long-term maintenance and monitoring systems. Together, these provided an integrated, action-oriented roadmap for policymakers, urban planners, developers, and community stakeholders. The study underscores that urban green space is not merely an aesthetic amenity but a strategic urban development asset capable of mitigating environmental risks, improving neighborhood desirability, and unlocking sustainable residential development opportunities. To ensure scalability and local relevance, the framework aligns with existing planning policies, and should be adopted in addressing gaps related to enforcement, land-use pressures, and inadequate green investment culture. The study concluded that embedding multifunctional green space systems into the urban development agenda is essential for transitioning Port Harcourt towards a healthier, climate-resilient, and economically robust residential property landscape. future iterations. Therefore, the study recommended thus:

a. **Policy Integration:** State and Local governments should incorporate UGS requirements into residential planning regulations.
b. **Public-Private Partnerships:** Developers and authorities should collaborate to fund and maintain green infrastructure.
c. **Community Engagement:** Residents should be educated on the benefits and maintenance of UGS.
d. **Monitoring and Evaluation:** Implement performance indicators as provided in the UGS implementation framework to assess ecological, social, and economic impacts.
e. **Spatial Planning:** Implementation framework should be adopted for UGS design to ensure equitable distribution and connectivity of green spaces across residential areas.

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