Malaysia Architectural Journal

Journal homepage:
https://majournal.my/index.php/maj
e-ISSN : 2716-6139

Metamorphosis 2050: Beyond Density, Crafting an Antifragile Future for African Cities

Cédrix Sthève Tsambang Fokou[1], Christolle Tsambang[2], Jean Christophe Ndongo[3]

[1]Architect, Senior advisor in charge and chairman of the national commission in charge of sustainable architecture and habitats of the National Order of Architects and CEO of Chorus Architecture, Cameroon
[2]Architect, chairman of the national technology and innovation commission of the national order of architects, Cameroon
[3]President of the Cameroon National Order Council (PCO), Cameroon

ARTICLE INFO

Article history:
Received
Received in revised form
Accepted
Available online

Keywords:
anti-fragility, urban redensification, holonic design, adaptation, anti-fragile ecosystems

ABSTRACT

Using Taleb's anti-fragility as a catalyst, our vision seeks to redefine urban re densification through disruptive concepts, reconnecting the triptych of man, habitat, and nature. Our goal is to transform the African landscape by 2050 with unique models of resilience, sustainability, and prosperity.

At the core of this process is architecture, art of critique and synthesis, served by pluridisciplinarity. Our approach integrates local expertise, endogenous artifacts, fractals, and ICT, employing gamification in a holonic design process to stimulate impact.

In 2003, the World Bank reported that over 60% of Africa's population lived in insecure, informal housing, exposed to various risks. Climate change and inefficient urban infrastructure have further exacerbated this situation. In 2019, the World Bank revealed that the construction sector contributes 10% to global carbon emissions. This perspective yet fails to explain the « success" of the Global South against the Coronavirus, contrasting with the challenges faced by Western cities despite stringent measures.

This paradox prompts a reevaluation of growth, adopting a more optimistic perspective on demographics and statistical analysis. For instance, the daily migration of 40,000 people to urban areas (World Bank 2017) annually equates to the surface area development of 48 cities the size of Yaoundé. Cameroon's urbanization rate increased by 3.1% per year between 2000 and 2020, projecting 155% by 2050. These figures are indicative of the entire continent, with estimated need of 700,000,000 housing units before 2050.

This transcends mere adaptation; it necessitates the exploitation of socio-economic resilience, often marginalized by traditional planning concepts. Leveraging smart tools to measure complex patterns and build one or more anti-fragile ecosystems, fostering

bilateral collaboration for enhanced opportunities. The objective is to resist and progress before, during, and aftershocks, shifting from a problem-based approach to one rooted in endogenous solutions.
.

1. INTRODUCTION

Africa is currently experiencing one of the fastest rates of urbanization in the world, a phenomenon that presents both significant opportunities and profound challenges. As cities expand, resource constraints, infrastructural demands, and the strain on collective urban imagination become increasingly pressing. Traditional models of urban densification may no longer suffice in addressing the unique complexities of African cities. In this context, the concept of antifragility, introduced by Nassim Nicholas Taleb, offers a new paradigm for rethinking urban development.

Antifragility goes beyond resilience or robustness, it refers to systems that not only survive shocks and disruptions but actually thrive and improve when exposed to volatility, randomness, and stressors. This article explores how the principles of antifragility can be applied to the African urban context, proposing a transformative approach to city planning and development. By embracing uncertainty and integrating adaptive, flexible urban strategies, African cities can evolve into spaces that are not only sustainable but also capable of continuous improvement through the challenges they face.

We will examine the Mokolo Green "Scarf" City project as a case study to demonstrate how antifragility can be operationalized in practice. This project, grounded in local wisdom and inspired by Matakam fractals, represents a fusion of tradition and modernity. Through collaborative design processes, it showcases how African cities can incorporate antifragile principles to create urban environments that are adaptable, innovative, and deeply rooted in cultural heritage. By aligning with the growing global discourse on resilient cities, the project illustrates how antifragility can pave the way for a more sustainable and adaptive urban future in Africa.

2. METHODOLOGY

This study adopts a multifaceted approach to understand and implement the principles of antifragility in African urban planning, focusing on waste management, cultural heritage preservation, and community engagement.

This study adopts a multifaceted approach to understand and implement the principles of antifragility in African urban planning, focusing on waste management, cultural heritage preservation, and community engagement. To ensure a robust analysis, three primary models—the 7-S Framework, Capability Maturity Model (CMM), and Change Management Model—are employed. These models, widely used in organizational and developmental studies, have been adapted to the urban planning context of Africa, addressing the unique sociocultural, environmental, and infrastructural challenges of the region.

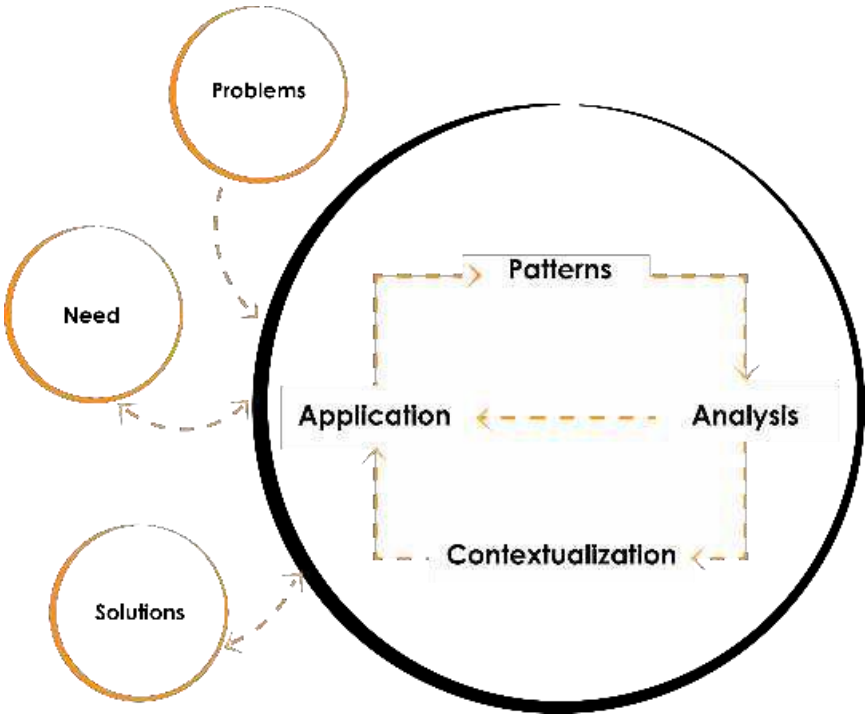

Fig. 1. Methodology use

2.1. 7-S Framework

The **7-S Framework**, developed by McKinsey & Company, serves as a lens to examine the various components that drive urban development and identify where antifragility principles can be integrated. This framework considers seven key elements—strategy, structure, systems, style, staff, skills, and shared values divided into **"hard"** and **"soft"** components. This study adapts the framework to assess the interplay between governance, resource management, and community resilience in African cities.

Strategy: Urban strategy refers to long-term planning objectives aimed at promoting sustainability, adaptability, and resilience in city development. In this context, the strategic element involves setting antifragile goals that allow cities to evolve and improve when faced with disruptions, such as environmental challenges, economic shifts, or rapid population growth. Strategies also include setting up urban policies that promote circular economies, green infrastructure, and adaptive zoning laws.

Structure: This refers to the formal governance structures in place, including city administrations, urban management hierarchies, and the relationship between governmental bodies and local communities. By examining urban structure, this study identifies how governance models can be reshaped to decentralize decision-making, incorporate community input, and allow cities to self-organize during crises, aligning with antifragile principles.

Systems: Systems encompass the operational processes used to manage urban functions, such as waste management, transportation, housing, and resource distribution. This study focuses on how these systems can be optimized to absorb shocks and reorganize in response to changes. For instance, adaptive waste management systems that turn urban waste into renewable energy sources can help cities thrive in resource-scarce conditions.

Style: Leadership and cultural norms play a crucial role in urban development. "Style" within the framework looks at the prevailing leadership culture among urban stakeholders, from city planners to

local community leaders. The study evaluates how leadership styles can be transformed to embrace innovation, flexibility, and collaboration, fostering environments where antifragility principles are naturally embedded in decision-making processes.

Staff: Human capital, or the workforce involved in urban planning, is a critical component in determining the success of urban policies. This study explores how to enhance the skills and capacities of urban planners, architects, and engineers in adopting antifragile mindsets. Additionally, the role of community members in grassroots urban development efforts is examined, highlighting how cities can leverage local knowledge and labor to build more resilient and adaptable infrastructures.

Skills: This element refers to the collective capabilities of urban planning teams and the local workforce. Antifragile cities require skilled personnel capable of adapting to new technologies, sustainable building techniques, and community-driven planning. This research suggests training programs and education initiatives that can raise skill levels, ensuring that both technical and social competencies are in place to support urban development aligned with antifragile principles.

Shared Values: The core beliefs that guide urban planning and community engagement are critical to the success of antifragile development. This study investigates how cities can foster a culture of resilience, collaboration, and adaptability by promoting values that prioritize long-term sustainability over short-term gains. By embedding shared values such as environmental stewardship and social cohesion into urban policies, cities can ensure that their inhabitants are not just passive recipients of development but active contributors to it.

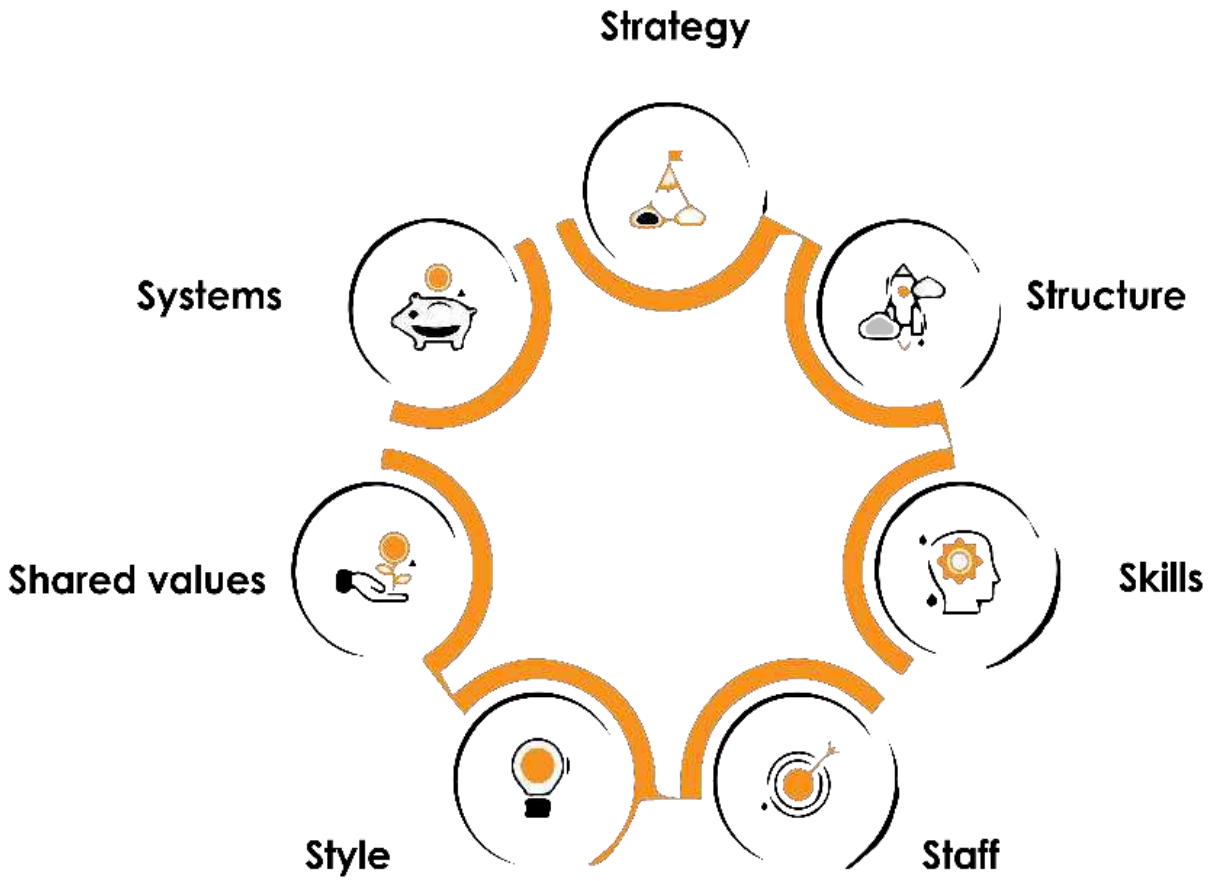

Fig. 2. What's 7-S Framework?

2.2 Capability Maturity Model (CMM)

The **Capability Maturity Model (CMM)**, initially designed for process improvement in software development, is adapted here to assess the developmental maturity of African cities in several key domains: waste management, community engagement, and cultural heritage preservation. The model evaluates cities at five levels of maturity, helping to determine where cities stand and what steps can be taken to move them towards optimized antifragile systems.

- **Level 1 (Initial)** : Cities at this level have ad hoc processes with minimal formalized structures in place for urban management. Waste management, for instance, is often chaotic and unsystematic, relying on outdated methods that are vulnerable to failure in times of crisis.
- **Level 2 (Repeatable)** : At this stage, cities have begun to establish basic processes, but these are still reactive. For example, cities might implement temporary solutions to waste overflow during heavy rainfall seasons but lack a long-term strategy for dealing with waste-related shocks.
- **Level 3 (Defined)** : Cities at this maturity level have standardized processes that are consistently applied across different urban sectors. In terms of community engagement, for example, public participation in urban planning is formalized through regular consultations and feedback loops, ensuring that local knowledge contributes to urban development efforts.
- **Level 4 (Managed)** : Cities with managed processes actively measure and monitor their urban systems, such as tracking waste management efficiency and sustainability metrics. Cities at this level are beginning to implement antifragile practices by continuously learning from disruptions and adjusting their urban stratégies accordingly.
- **Level 5 (Optimized)** : At this final stage, cities are proactive, continuously improving their systems through innovation and adaptation. Waste management systems at this level might involve advanced recycling techniques or energy recovery processes that turn urban waste into a valuable resource. Cities that achieve this level of maturity are truly antifragile, thriving on volatility and stressors.

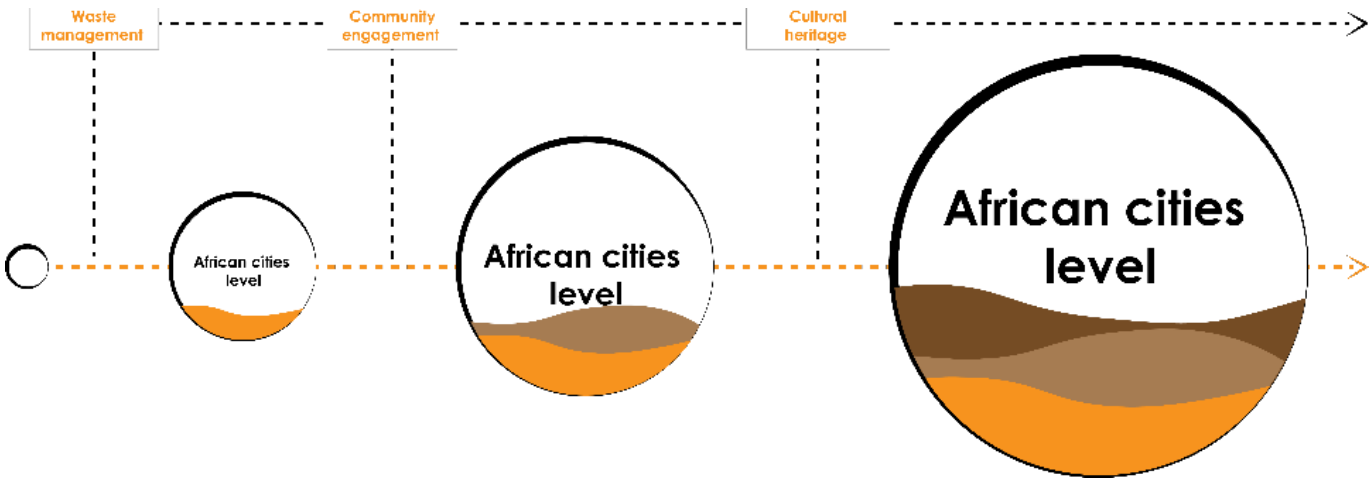

Fig. 3. Illustrating African cities level

2.3 Change Management Model

To ensure the successful adoption of antifragile principles, a **Change Management Model** is applied, focusing on managing resistance, facilitating stakeholder buy-in, and embedding antifragile practices into urban policies. Various models, including Kotter's 8-Step Model, ADKAR Model, and Lewin's Change Model, are considered for their adaptability to urban development.

- **Kotter's 8-Step Model** emphasizes the importance of establishing a sense of urgency among stakeholders, forming strong coalitions, and consolidating changes into the cultural fabric of cities. This model is particularly useful for guiding large-scale urban transformations, ensuring that all parties involved understand the importance of adopting antifragile principles.
- **ADKAR Model** offers a more granular approach, focusing on individual awareness, desire, and ability to adopt new practices. This model ensures that urban planners and community members are both knowledgeable and empowered to make antifragile strategies a reality.
- **Lewin's Change Model** provides a framework for unfreezing current practices, transitioning to antifragile methods, and refreezing these new practices into permanent urban policies. This step-by-step process allows for gradual and sustainable change, minimizing disruption while maximizing long-term benefits.

By applying these models, the study designs compréhensive change management strategies that guide urban stakeholders in transitioning towards more resilient, adaptable, and antifragile cities.

Fig. 4. Antifragility illustration

We proceeded as follows

2.1 Data Collection and Review

Conduct an in-depth analysis of the context, case studies, and expert opinions on urban development in Africa, using advanced data analysis tools to identify relevant trends and insights.

Fig. 5. A city's data collection illustration

2.2 Integration of Antifragility Principles

Incorporate classical architectural principles and sustainable practices, with particular attention to flexibility and adaptability. Develop a conceptual framework to integrate antifragility principles into African urban planning, identifying best practices and lessons learned from similar contexts around the world.

Fig. 6. Antifragile sustainable architecture

Table 1: architectural principles and sustainable practices

ARCHITECTURAL PRINCIPLES	SUSTAINABLE PRACTICES
Utility: Financing can be focused on the design of multifunctional, flexible spaces that adapt to the changing needs of occupants over time. This can include grants for the renovation rather than demolition of existing buildings, as well as incentive loans for the adaptive repurposing of buildings.	Environment: Funding can be allocated to sustainable construction projects that incorporate recycled materials, construction waste reduction and resource recovery. Grants for renewable energy technologies and energy efficiency may also be available.
Solidity: Investing in sustainable materials and long-life construction techniques is fundamental. Funding can support research into recycled materials and low environmental impact construction methods.	Social: Funding can support projects focusing on affordable housing, the creation of sustainable community spaces and the training of local workers for jobs related to sustainable construction. Neighborhood renewal initiatives can also be funded.

Beauty: Funding can encourage the use of aesthetic and sustainable building materials, as well as the reuse of architectural elements in new projects. Subsidies for public art created from recycled materials can also be introduced.	**Economy:** The circular economy can be encouraged by funding the renovation of existing buildings rather than the construction of new structures, thus promoting the reuse of resources. Tax incentives for investment in sustainable development projects can also be introduced.
AI and Smart tools: The adoption of smart technologies can be funded by promoting the reuse, upgrade and maintenance of existing equipment rather than frequent replacement. Tax incentives can be offered to encourage the use of smart systems that optimize energy and resource consumption.	**Culture:** Funding can support the preservation of cultural heritage by encouraging the renovation and adaptive reuse of historic buildings. Grants for integrating public art into urban design may also be available.

In light of the foregoing analysis, let us endeavour to establish additional connections that comprehensively elucidate our argument within the context of integrating the principles of antifragility.

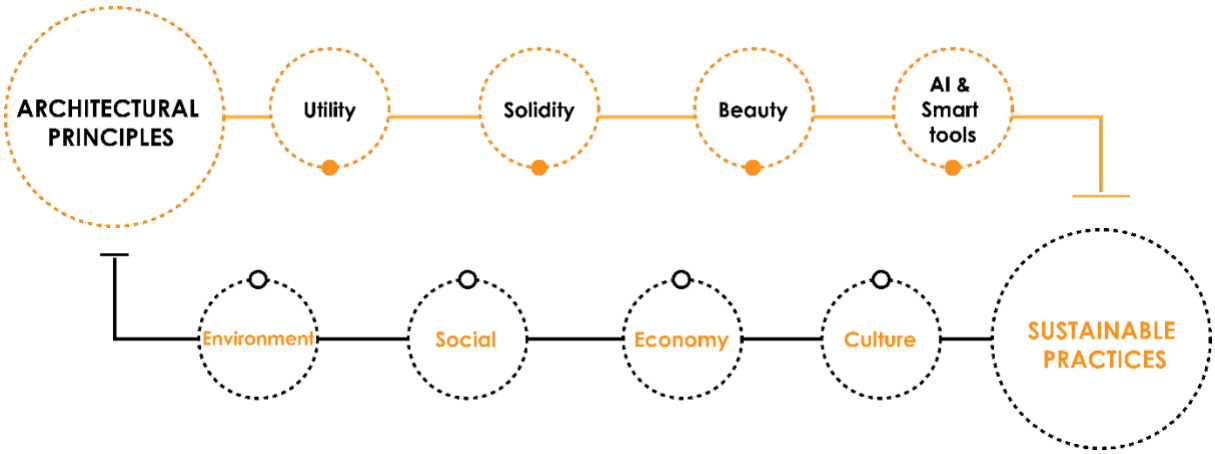

Fig. 7. Architectural principles

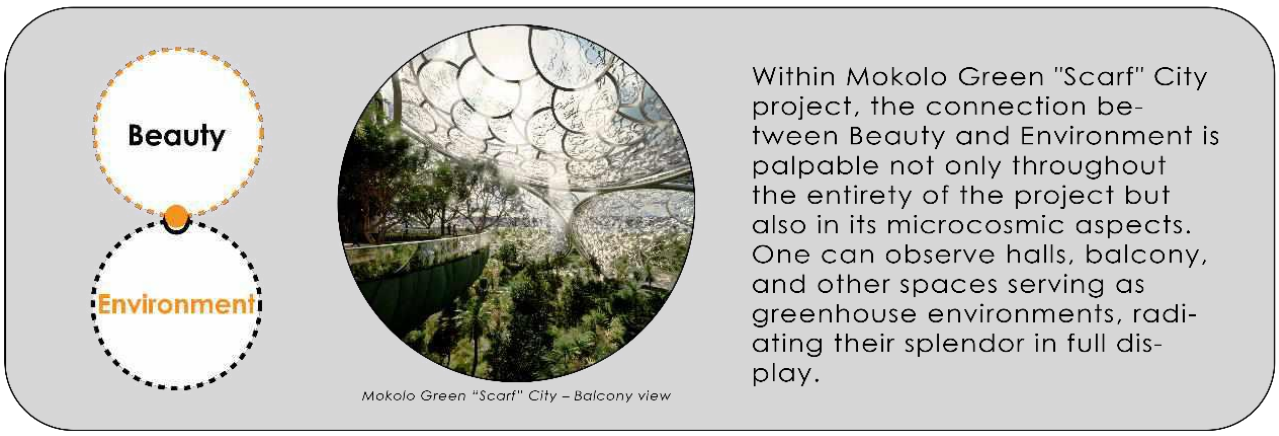

Fig. 8. Mokolo green scarf city balcony view

Fig. 9. Mokolo green scarf city – platform axonometry

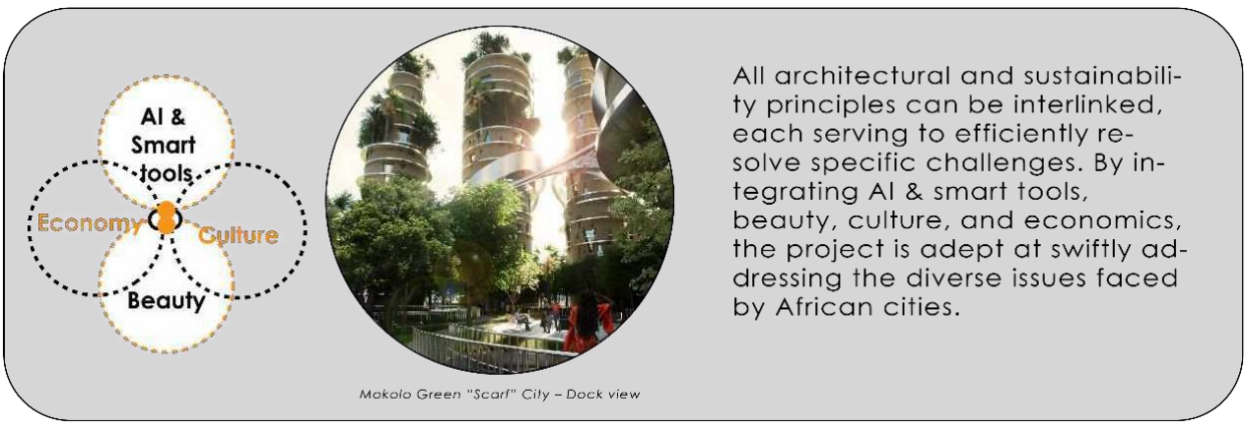

Fig. 10. Mokolo green scarf city- Dock view

Considering all these potential connections, it is crucial to emphasize that to address the population density projected for 2050, all African megacities must adhere to the various criteria of architectural principles and sustainable development. This is essential to provide their populations with a resilient and antifragile environment.

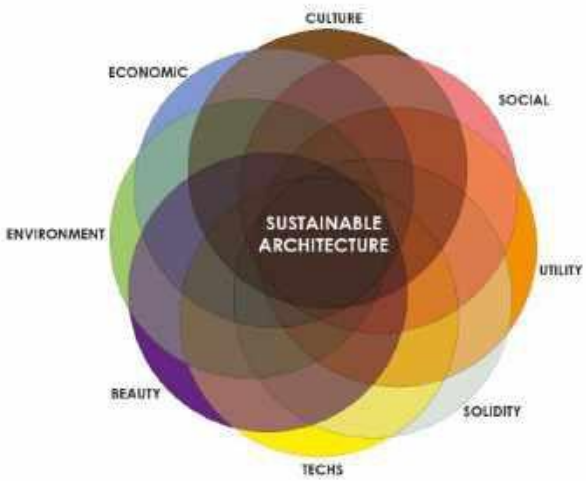

Fig. 11. Our Sustainable architecture illustration

3.1 Exploration of New Technologies:

Evaluate emerging technologies such as artificial intelligence and data-driven solutions to optimize urban planning, conducting feasibility studies and cost-benefit analyses to select the most appropriate technologies. "A digital Twin is a set of virtual information constructs that mimics the structure context, and behavior of an individual/unique physical asset, is dynamically updated with data from it physical twin throughout its lifecycle, and informs decisions that realize value"

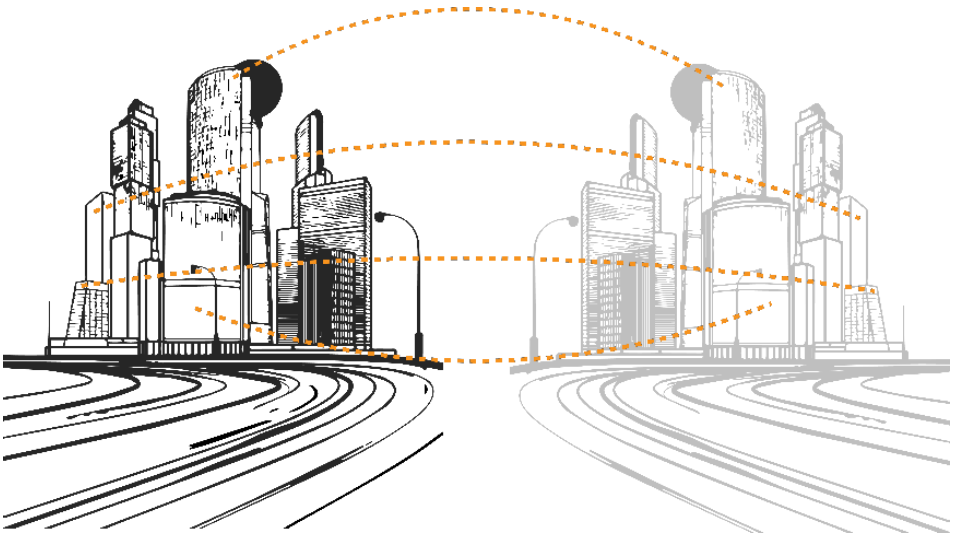

Fig. 12. Digital Twin

4. Community Engagement:

Involve local communities from the early stages of the project through participatory meetings and co-creation workshops. Develop a comprehensive stakeholder engagement strategy, using effective facilitation and communication techniques to encourage active participation of local communities throughout the planning process.

Fig. 13. Illustrating community participation in the evolution of its city

5. Waste Management Strategies

Develop strategies to reduce, reuse, and recycle construction materials to minimize the ecological footprint of urban projects. Design integrated waste management strategies, collaborating with domain experts and local stakeholders to design solutions tailored to the specific needs of African cities and their communities.

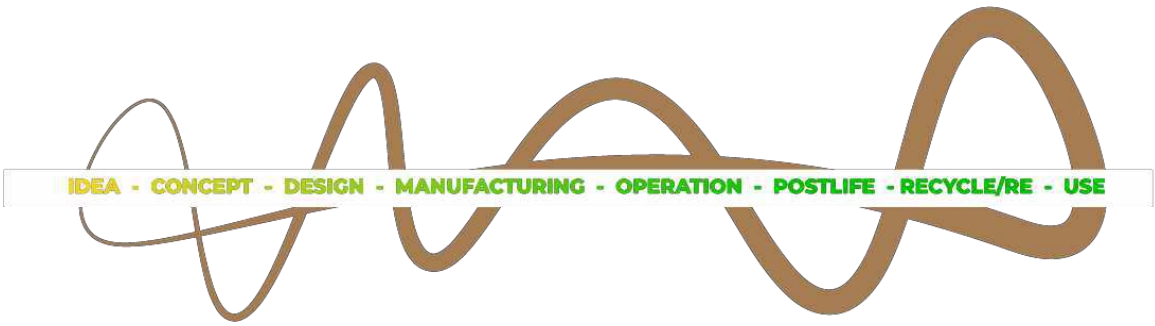

Fig. 14. Chorus architecture green process

6.Cultural Heritage Preservation

Develop cultural heritage preservation programs that value diversity and inclusivity, relying on participatory approaches and partnerships with local organizations and cultural heritage experts.

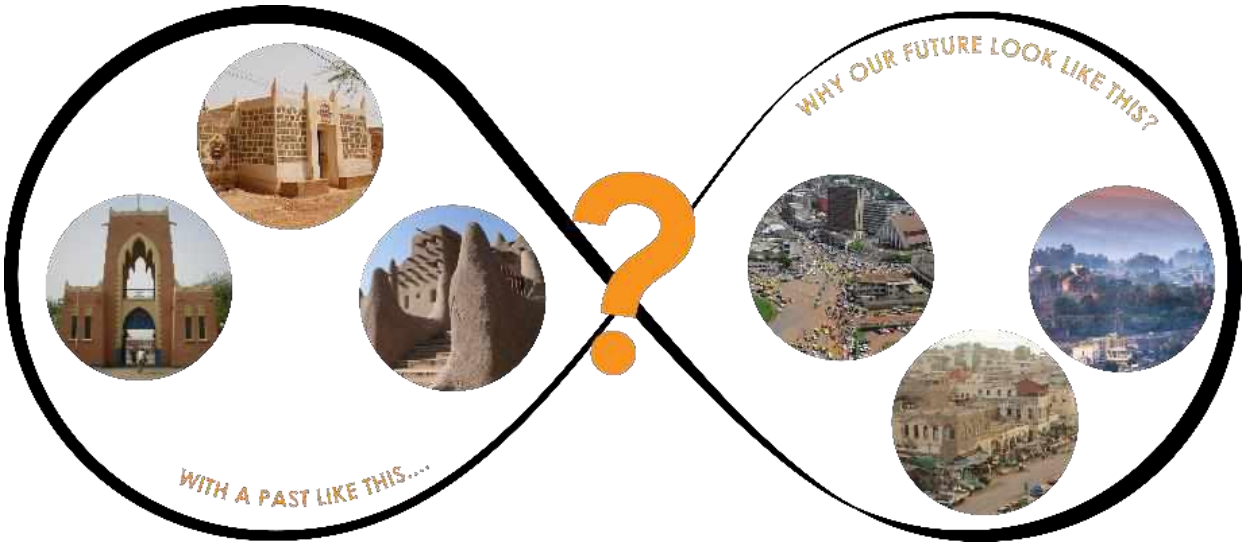

Fig. 15. Illustrating the issue of african heritage

7. Capacity Building and Education

Design and implement capacity building and education programs to raise awareness among residents about the importance of sustainable development and community participation, using interactive methods and educational materials tailored to different audiences.

8. Iterative and Adaptive Approach

Adopt an iterative approach to urban planning, implementing regular monitoring and evaluation mechanisms to assess progress, gather stakeholder feedback, and adjust strategies accordingly.

The Mokolo Green "Scarf" City project represents a collaborative effort involving approximately 20 local associations and a multidisciplinary team of experts. The design process was guided by two key principles: innovation inspired by fractals and community participation. Drawing inspiration from traditional Matakam architecture and indigenous knowledge systems, the project aimed to reimagine urban space as a dynamic ecosystem capable of adapting and thriving in the face of change. Sustainable practices, such as renewable energy sources, efficient waste management systems, and green spaces, were integrated into the city's design to enhance its resilience and self-sufficiency.

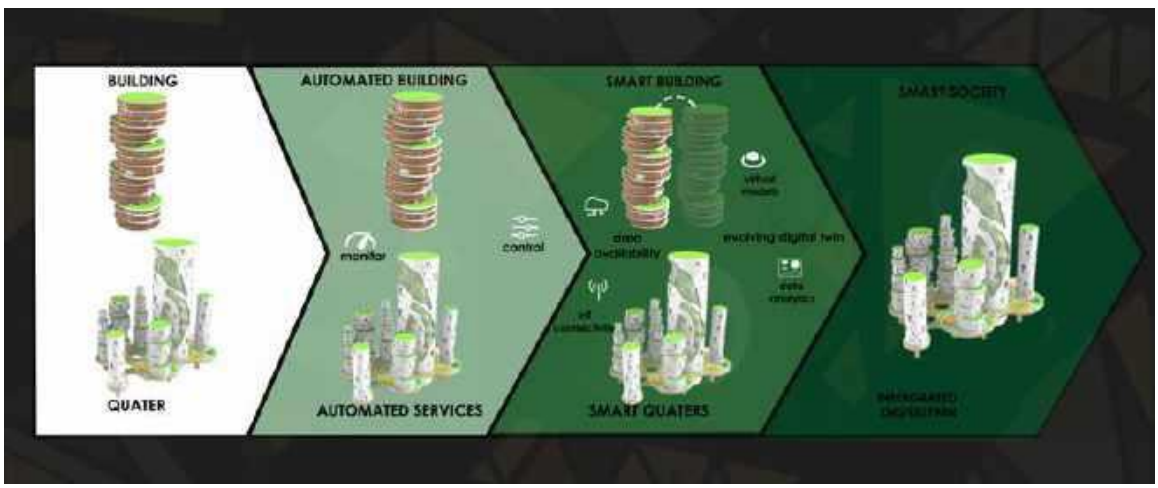

Fig. 16. Mokolo Green “Scarf” City – Data use

3.Results and Discussions

By utilizing the following analytical and methodological frameworks, we can provide an in-depth and rigorous analysis of the challenges and opportunities of urban development in Africa, as well as practical recommendations for successfully integrating antifragility principles into urban initiatives.

7-S Framework : To assess the impact of antifragile initiatives on various dimensions of urban development, such as urban structure, transportation systems, environmental policies, etc.

The analysis of the current city of Mokolo reveals that roads occupy 8.48% of the land, built-up areas cover 37.73%, green spaces constitute 1%, and non-built-up space accounts for 53.73%. In response to antifragility initiatives, the Mokolo Green "Scarf" City project adopts a different land use pattern: built-up areas occupy 2.17%, green spaces cover 37.75% of the area, roads and circulation areas represent 10.55%, and water occupies 1%. This new land use distribution marks a step towards antifragility for major African megacities.

4S Framework (Smart, Sustainable, Sensible, Service-oriented): To evaluate the sustainability and relevance of proposed solutions in terms of urban development in the African context.

We can observe the three main access and exit routes of the current city of Mokolo, along with its sparse flora, built-up and non-built-up areas, providing us with a general overview of the city.

Fig. 18. Mokolo Green “Scarf” City general analysis

Horizons Framework : To present a long-term strategic vision of urban development in Africa, highlighting the benefits of adopting antifragility from a long-term perspective.

Fig.19. Mokolo Green “Scarf” City - Digital twin

3.1. Antifragile Approach to Urban Development

The integration of antifragility principles fosters the creation of dynamic and adaptable cities by blending classical aesthetics with sustainable practices, such as green transportation and urban agriculture. This approach enhances urban resilience in the face of environmental and social challenges. By adopting a cognitive vision that incorporates artificial intelligence, innovative solutions are developed to optimize the sustainability of urban projects. Additionally, participatory methods ensure that urban projects align with the needs and aspirations of local communities, thereby increasing their legitimacy and effectiveness. The diagram above illustrates the traffic flow between the three main zones of both the current city of Mokolo and the Mokolo Green "Scarf" City, highlighting how antifragile initiatives contribute to improved connectivity and urban resilience.

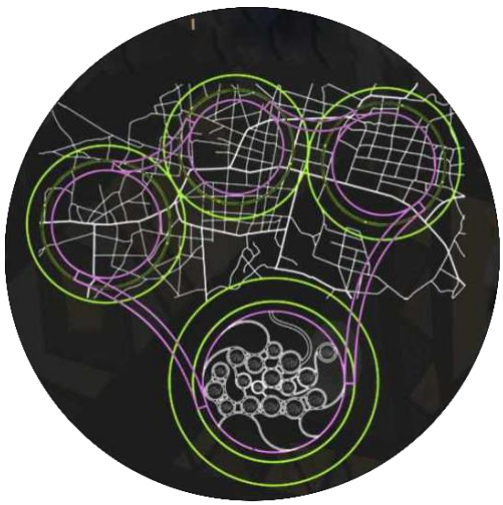

Fig.20. Mokolo Green “Scarf” City - Road traffic connections

3.2. Post-Waste Approach: Circular Resource Management

The harmonization of form and function in a post-waste era emphasizes the shift toward a post-waste economy, where minimizing waste and maximizing material reuse are central to enhancing the sustainability of urban projects. This transition is supported by cognitive vision through the exploration of innovative recycling technologies, which offer solutions to reduce construction waste and preserve natural resources. Additionally, participatory methods play a critical role in fostering community awareness and engagement, encouraging residents to actively participate in recycling and reuse initiatives, thereby promoting sustainable practices within local communities.

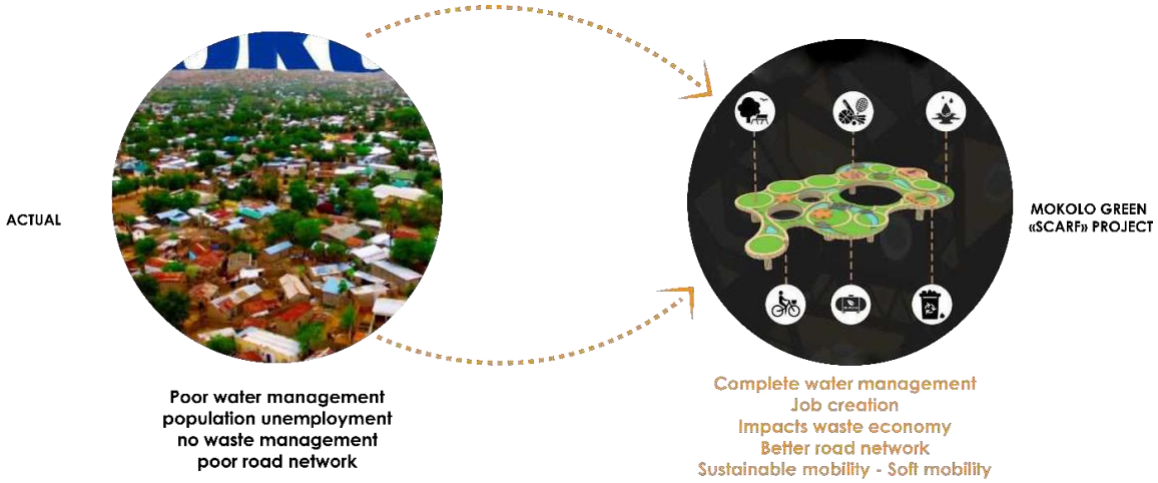

Fig. 21. Mokolo Green “Scarf” City - Platform landscaping

3.3. Cultural Heritage and Renaissance of Indigenous Intelligence

Community engagement is essential in ensuring that cultural preservation efforts are deeply rooted in the values and aspirations of local communities, thereby fostering a strong sense of pride and identity. In the Mokolo Green "Scarf" City project, this principle has been actualized through the application of fractal-inspired design, resulting in a transformative urban landscape that embodies fluidity, adaptability, and cultural depth. The design extends the existing urban fabric in a way that feels organic, creating a seamless connection between the past, present, and future, while accommodating both current needs and future growth. This organic extension has fostered a sense of continuity and belonging among residents, making them feel more connected to their city's evolution.

Crucial to this transformation has been the active involvement of local associations, whose expertise and cultural perspectives have been integral to shaping the project. Through this participatory approach, the city's identity has been co-created with the people who inhabit it, ensuring that urban development is reflective of the community's diverse needs and aspirations. This collaborative process has not only empowered communities but has also embedded cultural richness into the very fabric of the city's design, making it a living, breathing representation of the people's heritage and future vision.

In parallel, the integration of sustainable features has further bolstered the city's resilience. The use of renewable energy sources like solar panels and wind turbines has ensured a steady supply of clean, reliable energy, significantly reducing dependency on fossil fuels. This shift has not only helped address environmental concerns but also supports the city's long-term sustainability goals. Efficient waste management systems have transformed the way waste is perceived, turning it from a burden into a valuable resource. By promoting a circular economy, where materials are continuously reused, the city has minimized environmental pollution and created a more sustainable approach to urban living.

Green spaces and water conservation initiatives are additional pillars of this resilience strategy. By preserving and expanding green areas, the city has improved its residents' quality of life while contributing to ecological sustainability. Water conservation measures, essential in a world of increasing resource constraints, ensure that the city remains adaptable to both current and future environmental challenges. Overall, the integration of community-driven design, cultural preservation, and sustainable development strategies has created a harmonious balance between humans, habitat, and nature, positioning the Mokolo Green "Scarf" City as a model for future urban planning in Africa and beyond.

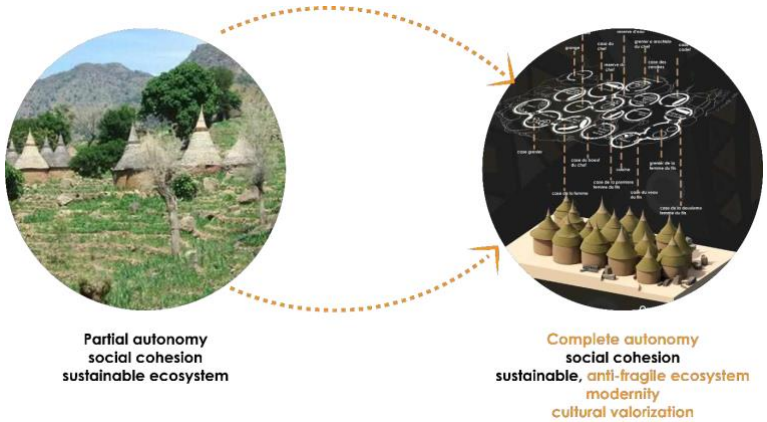

Fig. 22. Mokolo traditional model organization

4. Conclusion

The presents study an innovative approach to urban development in Africa, emphasizing the application of antifragility to address the challenges faced by rapidly growing cities. Drawing from established literature on resilience theory, systems thinking, and urban sustainability, the research extends the concept of antifragility beyond its traditional applications in economics and organizational systems, applying it to urban environments. This approach offers a transformative model for African cities, enabling them to not only withstand but also benefit from volatility, unpredictability, and external shocks.

Building on Taleb's antifragility framework, the research shifts the focus from merely resilient urban systems—those capable of absorbing and resisting shocks—to urban environments that grow stronger through stress and disruption. The integration of antifragile principles into urban planning allows African cities to harmonize form, function, and cultural identity, fostering environments that are not only sustainable but also adaptive to the dynamic challenges of rapid urbanization, climate change, and socio-economic inequality.

By adopting advanced technologies such as smart infrastructure and data-driven planning tools, cities can better adapt to both environmental and social challenges. Participatory design methods, widely supported in existing research, provide an inclusive approach that engages local communities in the development process, ensuring that urban solutions align with the specific needs of their populations. Circular resource management practices, which promote resource efficiency and waste reduction, further enhance the sustainability of urban systems, as emphasized in numerous studies on urban resilience.

Incorporating cultural heritage and traditional knowledge into urban design is another key component explored in the study. African cities, with their rich cultural landscapes, offer unique opportunities to promote social inclusivity and strengthen the social fabric. By preserving cultural identity within the framework of urban development, cities can foster stronger community ties and a greater sense of belonging among inhabitants, a concept well-supported in urban planning literature.

Despite the promising findings, certain limitations must be acknowledged. The research focused on a limited number of case studies, and while insightful, these may not fully capture the diverse challenges faced by African cities across the continent. Additionally, further exploration is needed to assess the long-term viability and scalability of antifragile urban strategies. Future research should broaden the geographical focus to encompass a wider range of cities and investigate the implementation of antifragile policies in diverse urban contexts.

The implications of this research are significant for architects, urban planners, and policymakers. The study challenges conventional urban planning paradigms, advocating for the integration of antifragility to create dynamic, adaptable urban systems. By balancing innovation with cultural preservation and sustainability with adaptability, African cities have the potential to become global leaders in urban development.

In conclusion, the adoption of antifragile principles offers a new pathway for African cities to navigate the complex challenges of the 21st century. This research highlights the potential for cities to not only survive but thrive in the face of uncertainty, paving the way for a resilient and prosperous urban future. The study provides a foundational framework for future research to expand upon, offering new insights and strategies for urban transformation across the continent.

Acknowledgement

This research was not funded by a grant

References

Books:
[1] Taleb, N. N. (2012). Antifragile: Things That Gain from Disorder. Random House.
[2] Holliday, J. (2019). Urban Analytics. Routledge.
[3] Colantonio, A., & Dixon, T. (Eds.). (2010). Urban Regeneration & Social Sustainability: Best Practice from European Cities. Wiley-Blackwell.
[5] Pelling, M. (2011). Adaptation to Climate Change: From Resilience to Transformation. Routledge.
[6] Lall, S. V., Henderson, J. V., & Venables, A. J. (2017). Africa's Cities: Opening Doors to the World. World Bank Publications.
Journal Articles:
[7] Acuto, M. (2017). Revisiting urban resilience. Environment and Urbanization, 29(2), 361–382. https://doi.org/10.1177/0956247817711830
[8] Lee, S., Jung, H., & Kim, H. (2018). Integration of cultural heritage preservation in urban regeneration: Case study of historic neighborhoods in Seoul, Korea. Sustainability, 10(11), 1–18. https://doi.org/10.3390/su10113875
[9] Glaeser, E. L. (2005). Urban colossus: Why is New York America's largest city? Journal of Economic Perspectives, 19(1), 193–212. https://doi.org/10.1257/0895330053147940
[10] Watson, V. (2014). African urban fantasies: Dreams or nightmares? Environment and Urbanization, 26(1), 215-231. https://doi.org/10.1177/0956247813513705
[11] Smit, W., Pieterse, E., & Parnell, S. (2017). Toward urban sustainability in Africa: Governance, planning, and practice. Sustainable Cities and Society, 32, 1-8. https://doi.org/10.1016/j.scs.2017.04.003
[12] Satterthwaite, D. (2017). Urbanization in low and middle-income nations: Past trends and future implications. International Journal of Urban and Regional Research, 41(4), 587-599. https://doi.org/10.1111/1468-2427.12520
[13] Simon, D. (2016). Rethinking sustainable cities: Accessible, green, and fair. Environment and Urbanization, 28(1), 3-14. https://doi.org/10.1177/0956247816629539
[14] Todes, A. (2012). Urban growth and strategic spatial planning in Johannesburg, South Africa. Cities, 29(3), 158-165. https://doi.org/10.1016/j.cities.2011.10.001
Online Sources:
[15] African Development Bank Group. (n.d.). Urbanization in Africa. African Development Bank Group. https://www.afdb.org/en/news-and-events/urbanization-in-africa-31690/
[16] United Nations Human Settlements Programme (UN-Habitat). (2018). The State of African Cities: The Geography of African Investment. https://unhabitat.org/sites/default/files/2019/08/soac_8.pdf
Conference Papers:
[17] Patel, S., Huchzermeyer, M., & van Rensburg, P. (2015). Grassroots and inclusive urban planning through partnerships: Lessons from a city-wide slum upgrading project in Harare, Zimbabwe. Proceedings of the 9th International Conference on African Development. Harare, Zimbabwe, pp. 13-20.