



Interview with Kunlé Adeyemi | African Water Cities: Embedding Local Knowledge for Sustainable Coexistence between Humanity and the Environment

Interview with Kunlé Adeyemi, founder of NLÉ
by Carlien Donkor and Matteo D'Agostino

This interview highlights the extensive research project African Water Cities by architectural studio NLÉ, which explores intersections of rapid urbanization and climate change in the African context. NLÉ proposes new strategies for addressing water, culture and heritage management in Africa as Sub-Saharan Africa experiences the second-fastest rates of urbanization and population growth in the world. The discussion also addresses whether and how these strategies fit within the scope of the UN SDGs.



< Fig. 1 Traditional building systems in Makoko, Lagos (Source: NLÉ, 2011, CC BY-NC-ND 4.0).

Introduction

INTERVIEWER | Carlien Donkor: Thank you for agreeing to this interview. I'd first like to ask you about the African Water Cities project and, in particular, about the project's central concept and strategies.

INTERVIEWEE | Kunlé Adeyemi, founder and principal, NLÉ: African Water Cities is a body of work that began in 2011, while we were researching affordable housing and trying to tackle the challenges of providing inclusive dwellings in rapidly developing regions and cities like Lagos, Nigeria. We noticed that we were not only dealing with issues of rapid growth in African cities but that many cities, particularly coastal and waterfront cities, increasingly face challenges of flooding exacerbated by climate change. The African Water Cities project looks at the intersection of cities and water in African contexts, considering that many cities and communities are already adapting to these issues. At the same time, we realized that there was a huge knowledge gap in the information necessary to inform strategies for urban adaptation. The project fills that gap by identifying and providing knowledge about major cities all over the continent. Only after this can we begin to address the issues of adaptation and mitigation in rapidly urbanizing cities dealing with climate-related challenges.

Matteo D'Agostino: Could you tell us a little bit more about what these knowledge gaps are?

Kunlé Adeyemi: For instance, on the African continent, we don't recognize the specificity of communities and their traditional adaptation strategies. We don't acknowledge the characteristics of our cities positioned on the waterfront. There is little attention paid to the implications of current urban development practices.

We don't understand where we are positioned economically or how our resources can be deployed to solve some of our challenges. All these aspects have huge implications for the future of the continent, yet this information is not readily available, and this isn't because it doesn't exist.

Carlien Donkor: Why is that and how does your specific case matter for the question of water, culture and heritage?

Kunlé Adeyemi: In our research, we realize that the challenges of adaptation and climate adaptation have already been addressed by some of the Indigenous communities that exist in various parts of the world and particularly on the African continent. These are insights coming from communities that have survived for hundreds of years, building on and around water. They have developed a culture of coexisting with water instead of fighting it. That is in itself a very unique culture that should not be undone or forgotten but preserved to inspire current and future solutions (fig. 1).

Carlien Donkor: I'd like to know which cities or which countries have you looked at so far?

Kunlé Adeyemi: We have studied Nigeria, Tanzania, Côte d'Ivoire and Cape Verde. In the last seven to eight years, I have been researching with various institutions, particularly in the US, for instance, the universities of Cornell, Harvard, Columbia and Princeton. With their students, we go into cities in various countries and collaborate with the local organizations there, doing groundwork and field research to understand what is going on.

Carlien Donkor: Can you give us more insights about the research process and methodologies, from data collection to proposal making?

Kunlé Adeyemi: To analyze our research, we have developed a methodology of research which we call “DESIMER,” an acronym for “Demographics, Economics, Socio-Politics, Infrastructure, Morphology, Environment and Resources.” All of these factors influence development, so this is not only about design, but it is really about understanding the issues that guide design.

Matteo D’Agostino: **It is a very interesting approach because it integrates different dimensions. Would you be willing to share a little bit more about this?**

Kunlé Adeyemi: One of the major things we learned when we began the African Water Cities project is that, as architects and planners, we have to consider that a range of factors influence development and these exist beyond disciplinary boundaries. “DESIMER” analyzes both human development and environmental indexes. “Demographics” tell us the characteristics of the population in terms of size, ethnicity and customs. “Economics” is also important. The project will not work if it does not have some economical structure that makes it viable, both long- and short-term. “Socio-politics” considers the history and background of the people. “Environmental” aspects include morphology (the shape and topography of the place), climatic and extreme weather patterns; and finally the local “Resources” available. It is crucial to first have a deep understanding of these factors. Design then becomes a tool to bring all these issues together through physical manifestation in the built environment. We utilize a broader approach to solving a problem or better still, understand a problem before even thinking of a solution.

Carlien Donkor: **Are you actively involving dif-**

ferent stakeholders during your research and the design process?

Kunlé Adeyemi: Yes. Always. It is very important because when dealing with projects concerning a large urban development, there are multiple stakeholders that must be involved. Our project is supported by the UN agencies, from the office of the UN Deputy Secretary-General herself to get support from UNDP, UNHabitat and UNEP. We also have various representatives from the communities in areas where we think we can intervene. So, we’re really developing a model in which all stakeholders have to be involved, from consent to support. Only in this way will it be a stable and sustainable model. In the current phase, we are also looking at how to scale up this model, adapting it to various regions.

Carlien Donkor: **Have there been important similarities or differences you’ve encountered within the different African contexts that you have already researched? Would you say that your solution is tailored to fit within the different contexts, but they have certain similarities as well?**

Kunlé Adeyemi: For sure, they share a lot in common but every country, every city is unique. The main similarity between most of the cities that we have identified is that they are characterized by the impact and challenge of the issues of flooding as a result of an increase in rainfall, sea-level rise in some cases, and extreme seasonal weather events. These are all exacerbated by climate change. The common threats are due to their geographical locations, within a specific climatic belt that spans from West to East Africa. They are also cities that are growing rapidly. On the other hand, every city has its unique resources, unique social and political contexts and environmental conditions beside different water bodies. Be it coasts, riv-



^ Fig. 2 Makoko Floating School, Lagos (Source: NLÉ, 2013, CC BY-NC-ND 4.0).

ers, lakes, lagoons or floodplains. There are several differences. We try to highlight this and consider how these “uniquenesses” can drive competitive advantage in each of the cities.

Our Water Cities concept is a solution for how to build and live around water. However, there are also more general solutions we consider for building African Water Cities (AWCs). Resilient, nature-based solutions provide a smart way of building that is very inclusive and tailored to the means and needs of local inhabitants, their local environments and resources. We then provide contextualized solutions and frameworks rather than introducing new or foreign technologies that are alien to the environment (fig. 2).

Africa and Beyond

Carlien Donkor: Could you elaborate on the impact you are trying to make in Africa and beyond the African Water Cities project?

Kunlé Adeyemi: I think we bring knowledge and awareness to people about the importance and urgency of adaptation and mitigation, whilst also offering insightful solutions. We are currently working on a book titled *African Water Cities*, which will be published this year. Then there is also the physical intervention, let’s say, an architectural body of work, where we have developed innovative solutions to help build on and around water, while preserving local culture.



^ Fig. 3 African Water Cities – MoMA Uneven Growth (Source: NLÉ, 2014, CC BY-NC-ND 4.0).

Floating systems are one of many building solutions that we believe would be part of a larger ecosystem of how to live and build around water, while preserving local culture. The Makoko floating system is one example in Makoko, Lagos. We are working on a proposal that focuses on (re)developing the community itself, which combines an inventory of different solutions from architecture to wastewater management and sanitation (fig. 3).

Water and Heritage Management

Carlien Donkor: In your opinion, what are the current and future challenges for water and heritage management within the African context?

Kunlé Adeyemi: I think the issue of clean water is one that we can go deep into. There are many concerns around scarcity, but we are also dealing with what is, ironically, an abundance of water in areas where we discuss flooding. Rath-

er than water supply in terms of clean water, I focus on water as a physical, urban resource and its impact on the urban environment. We reframe these challenges as an opportunity to learn. Indigenous communities scattered all over the continent are already adapting. Their insights hold the DNA for how we can (re)develop our cities to become “net zero.” Indeed, some of these communities are net zero already in that they consume fewer emissions than they produce. When we look at the effects of climate change and the degree of loss and damages it is causing, the amount of infrastructure that would be required to create flood defences everywhere is just unimaginable. That is just not the approach that we believe will be viable in the long term as we face the impacts of climate change for many decades to come. So instead of fighting it, we want to learn to live with it and that really goes back to learning from our own “local heritage.”

Carlien Donkor: Do you think water and heritage management should be more integrated?



^ Fig. 4 Opening of Makoko Floating School (Source: NLÉ, 2013, CC BY-NC-ND 4.0).



Kunlé Adeyemi: In my opinion, they need to be. It is a very unusual proposition for many people when you say, “let’s build on and around water.” Yet this already happens in Venice and Florence, Amsterdam, and cities such as Chicago. Whilst they have their challenges, these are historic “water cities” that developed essentially being covered by water and waterways. However, on the African continent, we don’t integrate water into our urban fabric. There is a huge disconnection to water heritage, I would say.

Carlien Donkor: In your opinion, why is this the case?

Kunlé Adeyemi: I think there are a number of things. One is that the culture of development that we have adopted over hundreds of years has been land-based. We learned to cultivate land and within a short period, further cultivated the creation of additional land over water through reclamation. This is very capital intensive and makes it unaffordable for the average person to purchase land, yet we have not shifted our focus toward living around our waterways, although it’s part of our history. The coat of arms for Lagos is a symbol of the city that contains fishermen on boats and tells the story of a city living around water. The expertise and occupation of the first settlers of Lagos was fishing (fig. 4).

Water has always been part of African heritage. Seventy per cent of all major cities and capitals on the African continent are on waterfronts. So, water is an essential ingredient in the recipe of African cities. We turned our backs to this but with the impacts of climate change, we are forced to confront this and innovate in terms of insurance that it is part of survival as a human race.

Matteo D’Agostino: You mentioned the question of the sustainability of certain solutions,



^ Fig. 5 Traditional bamboo dwelling, Makoko (Source: NLÉ, 2013, CC BY-NC-ND 4.0).

such as building large flood protection systems in Africa. In many Western countries, these concrete structures are often seen as a solution, while, for you, they are not ideal in the long run. Why are you of this view?

Kunlé Adeyemi: This refers back to our “DESIMER” research method. Multibillion-dollar shoreline protection infrastructures that manage water levels in Rotterdam or Amsterdam are appropriate for the Netherlands. This doesn’t imply that we can immediately copy and paste them within the African context. It is arguable that people would do the research and tell you, yeah, of course, it’s possible, but that doesn’t mean that it’s the best solution for us. We have our own materials: bamboo and timber, earth and laterite (fig. 5). Why don’t we foreground these resources in our own future cities? There are solutions everywhere. The infrastructure

possibilities are there, but there is a knowledge gap in what we can do with “our own resources, for our own problems, to create our own solutions.”

Contextualizing African Water Cities in the UN SDGs

Carlien Donkor: How is the AWCs project in alignment with the UN SDGs?

Kunlé Adeyemi: SDG 11 “sustainable cities” is directly connected with what we do, and we are keen on achieving it through nature-based solutions. From that, of course, issues of affordability, clean energy, economic growth – whether it’s SDG 7, SDG 8 or SDG 9 – are very important. We’re learning from communities who built so much out of so little. That’s where our foun-



^ Fig. 6 Makoko Floating Platform, Lagos (Source: NLÉ, 2012).

dation is from. So, if we can learn to do what they've done and innovate such solutions then we're already reducing some of those inequalities (SDG 4). The solutions geared toward SDG 6 are, of course, an essential part of any healthy city. Our project is in cities that have an abundance of water due to excess rainfall and flooding. Part of our infrastructural solution is to provide an adequate supply of clean water to the communities and people living there through various rainwater harvesting filtration systems. The impact on climate is the overarching element in this (SDG 13).

Carlien Donkor: In mentioning the knowledge gap, I wanted to ask, is it perhaps due to a lack of education?

Kunlé Adeyemi: Absolutely. Thanks for bringing that up. Indeed, education is a way of filling

that knowledge gap and part of that commitment is to set up the African Water City Center at the University of Lagos in Nigeria, where we are already educating students, some of which are doing internships and exchange programs in various organizations, getting valuable expertise on development projects and architecture around water.

Carlien Donkor: Are you also thinking about informal education activities? For instance, targeting people who are not English-proficient?

Kunlé Adeyemi: First of all, seeing is believing, and people respond to what they see. They change their perspective once they experience something. And what we have been able to do is to take action, which in our field of work is key. Ten years ago, we had an idea and we just built it. We said, "Look, we're going to see how



^ Fig. 7 MFS IV – Mansa Floating Hub – Cultural Platform, Mindelo (Source: NLÉ, 2021).

it works, how it feels, we're going to learn from it." And it had a lot of impact on people just because they saw something different. I think that demonstrating something through innovation, and not just through formal education in the classroom, is vital. Involving people in the process of learning, understanding and challenging their current views, moves it one step further (fig. 6).

Conclusion

Matteo D'Agostino: Could you give us some takeaway points from your approach, looking at the future challenges in the African context?
Kunlé Adegemi: First of all, I would say innova-

tion is essential for a truly authentic and sustainable solution for Africa. And that means taking some risks such as "using what we have to get what we want." In that process, we can improve on what we have. Many African cities can still be described as young, so if we do make mistakes, this is the time to make them. But the worst mistake would be simply trying to be something other than what we are. Understanding the abundance and characteristics of our local resources and deploying them through the economy of means is necessary for our sustainable development. Now, there's a lot of scientific documentation when it comes to policies, finance and even health. But one of the main challenges that we're tackling as people in the building sector is just how these factors

relate to the built environment. We continue to promote diversity and the coexistence between people and the environment. That's what we really stand for (fig. 7).

What is the future of the African city, rapidly growing and affected by climate change? African cities lack certain things, but offer an abundance of resources. So, how can we learn and turn existing challenges into opportunities? What are the potential directions we can anticipate for ensuring that we are ahead of this curve?

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