

UC Santa Barbara

react/review: a responsive journal for art & architecture

Title

Tradition and Transformation: Co-Designing with the Fishing Communities of Nyandiwa

Permalink

<https://escholarship.org/uc/item/2vm2f733>

Journal

react/review: a responsive journal for art & architecture, 6(0)

Author

Nucifora, Sebastiano

Publication Date

2026-06-15

DOI

10.5070/R5.50674

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Tradition and Transformation: Co-Designing with the Fishing Communities of Nyandiwa

Sebastiano Nucifora

1. Introduction

While rural areas are undergoing a profound structural crisis, the progressive transformation of many villages into informal urban settlements is becoming a recurrent phenomenon in the development of Sub-Saharan Africa, contributing significantly to the definition of a new identity for the continent. This process results from the ongoing concentration of population — once widely dispersed according to a scattered settlement model — into small urban centers emerging from certain villages. Villages located in strategic positions along major transportation routes or embedded in environmental contexts offering tangible economic opportunities (such as fishing areas, more productive agricultural land with access to water resources, trade, and small-scale services), tend to attract new residents and experience faster demographic and spatial expansion. Conversely, settlements lacking these advantages progressively lose centrality and may slowly decline or be abandoned. Within just a few decades, these centers have grown from a few hundred inhabitants to ten thousand—sometimes even twenty thousand—residents, emerging as the first connective link between the rural and the urban worlds. These *new cities*, together with others of similar size, constitute

the foundation of a broad urban system: they represent the most numerous and widespread level of the settlement hierarchy, above which lie medium-sized centers and, at the top, the few but vast megacities, such as Lagos or Kinshasa (fig. 1).¹

Multiple factors contribute to driving communities toward these emerging poles. While reflecting the vastness and diversity of the continent, they also reproduce recurring criticalities: political instability and terrorism, the absence of guarantees regarding land tenure, difficult access to water resources, the loss of livelihoods due to climate change, and, more generally, the lack of essential services such as education and healthcare.

The interaction of these elements increasingly renders life in traditional dispersed villages unsustainable and fuels a widespread and deep internal migratory flow. This is a short-to medium-distance phenomenon, which, overall, involves a greater number of people than migration toward large cities, yet remains less visible and less considered in media, social, and political debates on urbanization in Sub-Saharan Africa.

According to experts, by 2030 small urban centres will account for 51% of urban growth, intermediate centers for 16%, and the largest cities for 33%. This figure is essential for understanding the future trajectories of urbanization on the continent, which have traditionally been interpreted through the prism of its major metropolises. One of the most distinctive features of the African context is the existence of an almost continuous transition between rural areas, villages, small centers, and more structured cities. Here, the sharp separation between urban and rural is less pronounced than elsewhere: spaces intertwine, mutually reinforce one another, and form territorial systems that function more as networks than as opposing categories.

¹ Although major cities have monopolized attention due to their immense social and environmental challenges, data on urbanization in Africa shows a different reality. In Sub-Saharan Africa—excluding South Africa, with a total population of approximately 1.14 billion—there are two cities with over 10 million inhabitants (Kinshasa and Lagos), five cities between 5 and 10 million, fifteen cities between 2 and 5 million, and thirty-six cities between 1 and 2 million; these metropolises or large cities host only 29% of the continent’s urban population. Another 13% resides in medium-sized cities with populations ranging from 100,000 to 1 million. The majority of urban residents therefore live in around 6,000 small cities—mostly unknown—with fewer than 100,000 inhabitants and sometimes even under 10,000. These small cities are mostly located in inland areas where agriculture and livestock are the primary sources of livelihood. If we include the residents of traditional villages—often with just a few dozen or hundred people dispersed across rural areas—approximately 75% of the total population still lives in close contact with, or in direct relation to, rural habitats. Data are derived from personal elaborations of the following sources: UN WUP, UN Data, African Development Bank, World Bank Data, Africapolis, UN-Habitat, OECD SWAC, UN Data Portal, UNECA, and CityPopulation.

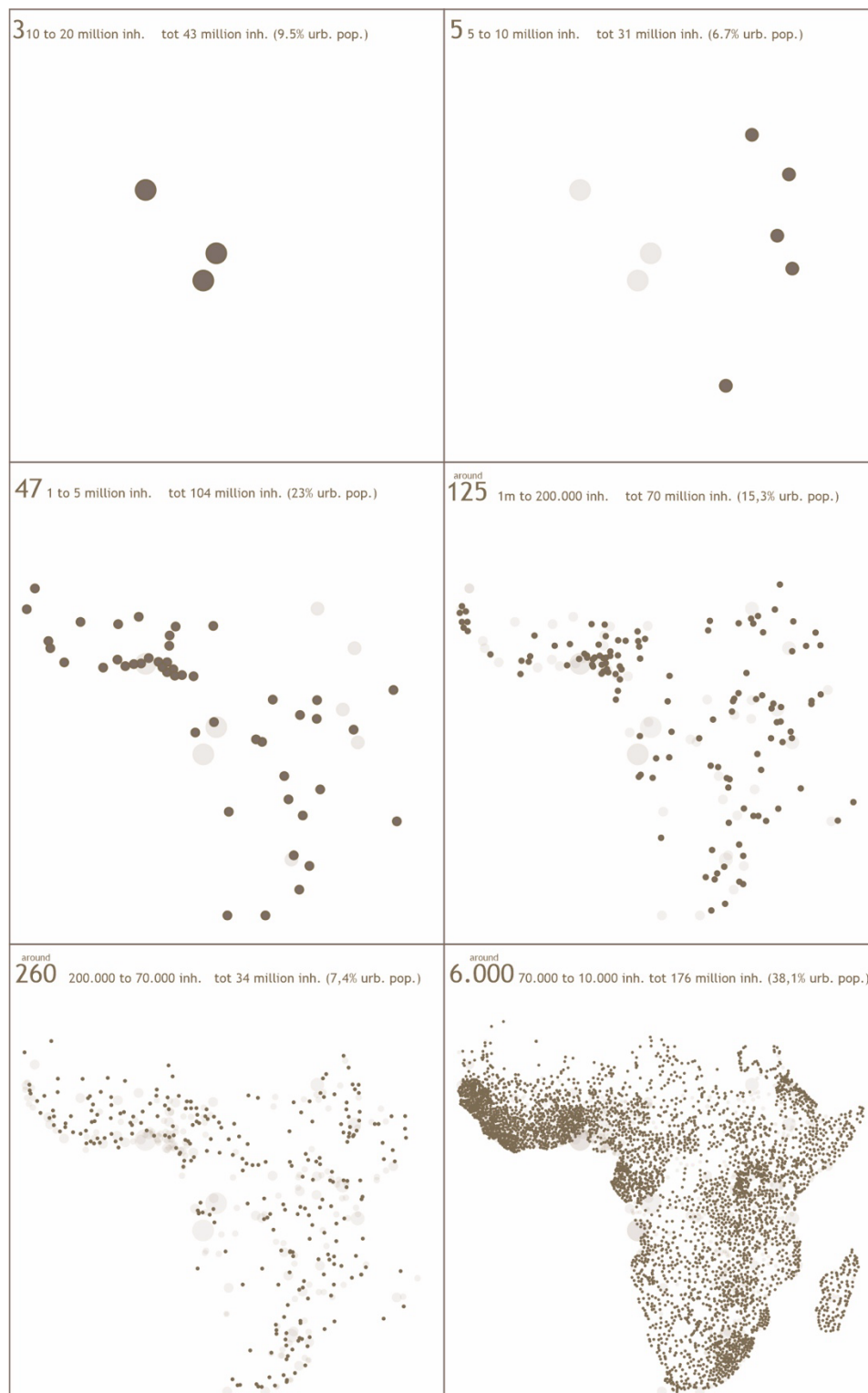


Figure 1. Map showing the distribution of cities in the African continent, divided according to population size. Graphic elaboration by the author, 2024.

In contexts such as those examined in this paper, the conventional dichotomy between city and countryside proves increasingly inadequate as an analytical lens. Rather than existing as separate or opposing realms, urban and rural dimensions intertwine within everyday practices, economic exchanges, and spatial transformations, generating hybrid territorial configurations that challenge established planning categories. In these emerging centers, the city–countryside interface does not mark a boundary, but functions as a dynamic field of interaction, carrying with it concrete potentials for development and mutual reinforcement. Rural areas, driven by demographic growth, are not being emptied in favor of cities; rather, the expansion of urban centers is generating new dynamics in the surrounding rural areas, which are increasingly taking on an active role in supplying agricultural products, resources, and services essential to the sustainability of new settlements. The relationship between city and countryside, therefore, does not weaken but strengthens, configuring itself as a shared engine of development along an axis that involves both worlds.²

For this reason, it becomes necessary to focus attention on emerging small and medium-sized urban realities, true *trait d’union* between city and countryside, between development and tradition.

A volume edited by Jonathan Baker on Urban Development in Rural Context (UDRC) in Africa already highlighted this necessity in 1990.³ However, despite long-standing agreement among scholars that the organization and management of *intermediate* cities will largely determine the future of Sub-Saharan Africa, institutional and financial attention continues to be concentrated on major capitals. This polarization has produced a condition of exclusion affecting hundreds of medium-sized and small cities across the continent: a vicious circle intertwining political weakness, limited economic opportunities, and restricted access to broader networks of connectivity.

² Demographic evolution intersects with migration patterns, creating a numerical paradox. The rapid urbanization driven by migration toward major cities—mostly within the continent—has increased the proportion of the population living in urban areas from just over 31% in 2000 to almost 42% in 2020, with projections approaching 66% by 2050. However, contrary to what might be expected from other geographical contexts, this trend has not resulted in the depopulation of rural areas. The high growth rate has still led to an increase in absolute population numbers, from 437 million in 2000 to 636 million in 2020, with an annual increase of approximately 10 million people. Data are based on personal elaborations of the sources listed in Note 1.

³ Jonathan Baker, ed., *Small Town Africa: Studies in Rural-Urban Interaction* (The Scandinavian Institute of African Studies, 1990).

This marginality is also reflected at the administrative level. Many of these centers find themselves in a genuine limbo: too large to fall within policies aimed at rural areas—already limited in themselves—yet at the same time excluded from urban planning and regeneration programs, which are generally tailored to the needs, and greater funding-attraction capacity, of large metropolises. Across much of the continent, therefore, being recognized as a *city* is not merely a definitional or linguistic issue: urban status can determine the possibility—or the impossibility—of accessing essential investment and development programs.⁴

2. Nyandiwa, Kenya

Nyandiwa, a town in southwestern Kenya, represents an emblematic case of the transitional conditions described above. At present, its official status is that of an *informal settlement* rather than a *town*, despite a population exceeding ten thousand inhabitants. This classification suggests that its urban transformation is underway, but not yet completed from an administrative standpoint, according to official criteria.⁵

Originally a small fishing village, Nyandiwa developed along a narrow peninsula extending approximately three kilometers into the eastern shore of Lake Victoria, facing the small island of Kiwa, which belongs to the same municipality. Over recent decades, its population has grown significantly, driven primarily by opportunities related to fishing and associated commercial activities. The result is a rapidly expanding urban fabric, characterized by a dense interweaving of vernacular structures and new informal constructions, and lacking an overall spatial framework capable of coordinating demographic growth, public spaces, and collective services.

The current urban core is concentrated mainly at the base of the peninsula, around the crossroads formed by the lakeside road and the internal artery that runs

⁴ Despite necessary attempts to introduce definitions based not only on quantitative criteria but also, as Swati Chattopadhyay argues in *Unlearning the City: Infrastructure in a New Optical Field* (University of Minnesota Press, 2012), on terms and concepts that describe lived materiality—shifting focus from mere demographic measures to the quality of practices and relationships that make a space “urban”—in most Sub-Saharan countries, city status is still largely based on population numbers, which vary widely by country. In Sierra Leone, 2,000 residents suffice to classify a settlement as urban; in Ghana, 5,000; in Nigeria, 20,000. In Kenya, official rules define a city as a settlement with at least 10,000 inhabitants, although administrative, technical, and financial criteria also apply. Specifically, the *Urban Areas and Cities Act* (2011, amended 2019) defines the following classifications: City: +250,000 inhabitants with required infrastructure/management; Municipality: 50,000–249,000 inhabitants with minimum standards; Town: 10,000–49,000 inhabitants.

⁵ As in many African urban centers, reliable population data are scarce. The Kenya Informal Settlements Improvement Project (KISIP 2) (ESIA Report – Nyandiwa Informal Settlement) estimates approximately 14,432 residents, <https://www.kisip.go.ke/sites/default/files/2025-05/Nyandiwa%20ESIA.pdf?utm>.

longitudinally along the strip of land. The original settlement, however, was located at the northern tip of the peninsula, where in the 1960s a group of Tanzanian fishermen, arriving from the southern part of the lake in search of a sheltered landing place for their canoes, established a small village that for decades did not exceed one hundred inhabitants (fig. 2).

The first phase of Nyandiwa's development (1970–2000) was characterized by an economy largely based on artisanal fishing and small-scale inland agriculture. A second phase of consolidation (2000–2015) coincided with the expansion of commercial fishing of Nile perch (*Lates niloticus*) and *omena*, the growth of daily markets, and the emergence of the first service structures, including a medical dispensary, a primary school, and an increasingly active commercial core.⁶ During this period, the settlement gradually shifted toward the base of the peninsula, which was more accessible from the intersection between the coastal road and the C19 spur road leading to Homa Bay, the regional capital. These changes attracted internal migration flows from inland villages and from the lake's islands, particularly Mfangano, Remba, and Rusinga, accelerating demographic growth. Current projections estimate a population of approximately forty thousand inhabitants by 2050.

This process marks the beginning of a third phase, which is still ongoing, in which Nyandiwa is transitioning from a village to a small urban center. Building density is increasing, particularly around the market area and the main crossroads, non-governmental organizations and community-based projects focused on sustainable fishing, HIV prevention, and women's empowerment are being established, and new schools and healthcare facilities are under construction. The contradiction lies in the fact that, despite its consolidation as a service hub for a wide system of surrounding villages (with a radius of influence of approximately 10–20 km), the town continues to grow without formal planning, adequate access to electricity, or a potable water distribution system—despite its location on the shores of Africa's largest freshwater basin. As in many contexts that develop informally from an original nucleus recognizable in the minimal spatial and organizational form of the rural village, the gradual erosion of traditional structures and social relationships is not matched by the

⁶ The scientific name of *omena*—also known as *mukene* or *dagaa*—is *Rastrineobola argentea*, commonly referred to as the Lake Victoria sardine. It is a freshwater pelagic fish species in the family *Danionidae*. *Omena* is a staple food in Eastern and Southern Africa. The lowest-grade product may also be used as poultry feed. Major wholesale markets for dried *omena* exist in Mwanza, Tanzania, and Kisumu, Kenya, from where it is distributed throughout Eastern and Southern Africa.

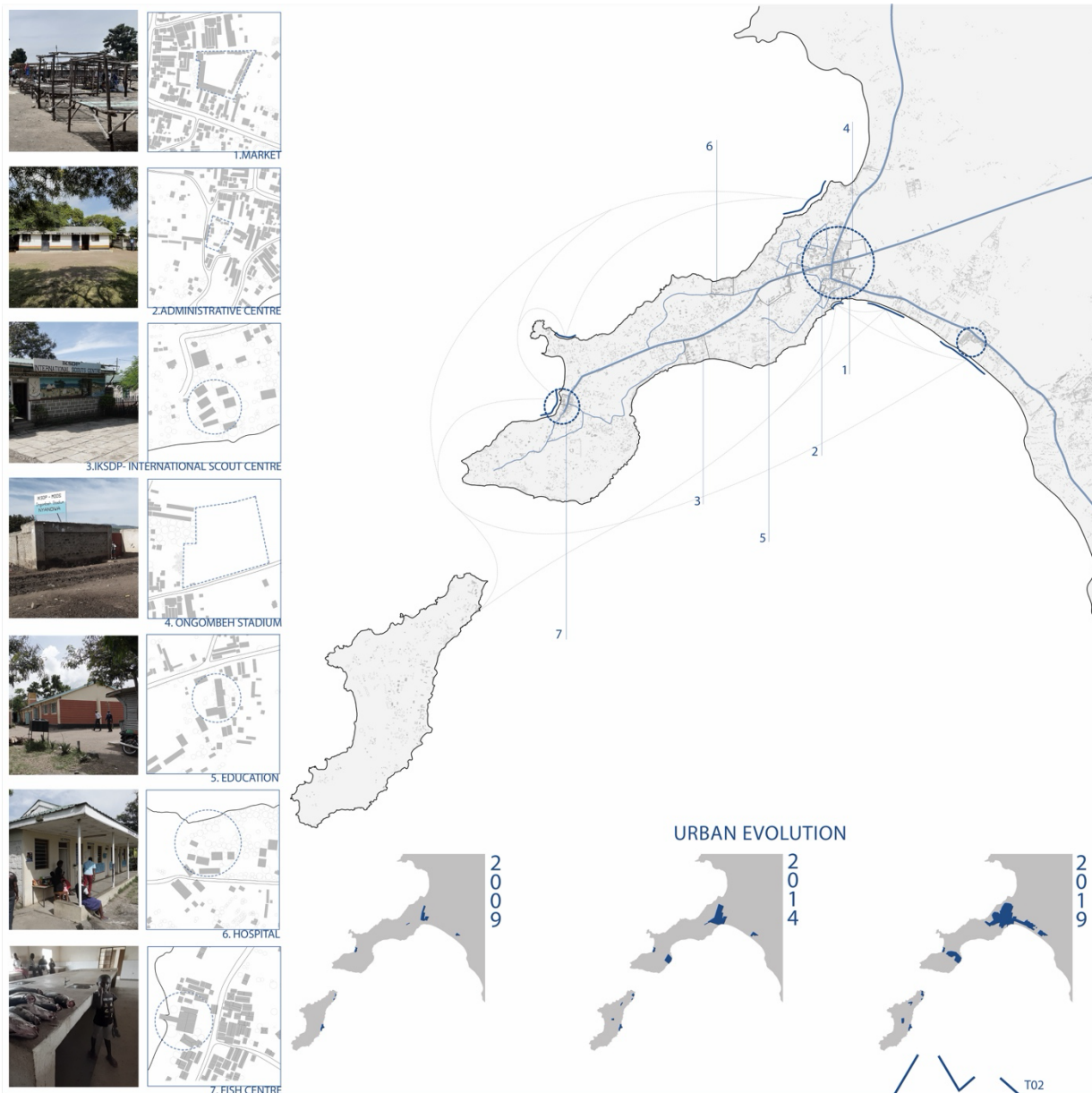


Figure 2. Daniela Iannello, Nyandiwa Peninsula with urban development from 2009 to 2019 and areas targeted by the Thesis Lab interventions, 2020. Digital drawing, plate 2 of 16. Courtesy of Daniela Iannello. Originally published in Daniela Iannello, "Supporting facilities for fisheries economy: Nyandiwa, Kenya" (Master's thesis, Mediterranean University of Reggio Calabria, 2020).

emergence of a coherent and shared urban identity. The push toward urbanization proceeds in a disorderly manner, often driven by immediate needs or speculative logics, generating a settlement that possesses neither the community cohesion of the traditional village nor the efficiency, spatial quality, and governance capacity of a planned city.

This occurs while, in the everyday practices of its inhabitants, an immaterial heritage remains deeply rooted in tradition, in its rituals, habits, and narratives. Two images, overlapping and unstable, in search of a point of equilibrium.

As in the broader Sub-Saharan African context, the key issue in Nyandiwa is not so much determining when a set of material and immaterial elements can be defined as *urban*—a conceptual exercise that is certainly useful, but often sterile. Nor is it sufficient to be captivated by the energy, creativity, and remarkable functional capacity of informality that characterize contexts such as this one, qualities that Rem Koolhaas had already observed at a different scale in Lagos in 2002.⁷ The real problem, as emphasized by Matthew Gandy in 2006, is that in the absence of any form of planning, such vitality is nevertheless unable to resolve the conditions of hardship, vulnerability, and poverty that characterize much of informal urbanization.⁸

In Nyandiwa, this tension is particularly evident, risking the perpetuation—albeit in dispersed rather than concentrated forms—of dynamics of structural precariousness. It is within this context that the participatory design experience carried out by students of the Master's Thesis Laboratory, Architectures for Developing Countries, at the Department of Architecture and Design (dAeD) of the Mediterranean University of Reggio Calabria—directed by the author since 2014—should be situated. This article describes a participatory design process developed by the Laboratory's students in 2021.

3. Laboratory Approach

Since 2014, over the course of approximately ten years, more than one hundred students have addressed an equal number of architectural themes, developing projects intended for communities—predominantly rural—in Sub-Saharan Africa.

The activities of the Laboratory are structured according to a clearly defined methodology, which begins with the establishment of partnership agreements between the dAeD Department and various Italian NGOs operating in the areas of intervention. Through these NGOs, partnerships are then established with local stakeholders, often municipalities or large religious institutions active in the selected regions. The local partners are proposed by the NGOs themselves, and on the basis of their specific needs, they identify the project themes. Once these themes are approved by the

⁷ Rem Koolhaas, "Fragments of a Lecture on Lagos," included in *Under Siege: Four African Cities (Freetown, Johannesburg, Kinshasa, Lagos)* / Documenta11 Platform4, (2002), <https://www.documenta-platform6.de/fragments-of-a-lecture-on-lagos/?utm>.

⁸ Matthew Gandy, "Planning, Anti-planning and the Infrastructure Crisis Facing Metropolitan Lagos," *Urban Studies* 43, no. 2 (February 2006): 371–396.

Laboratory coordinators—initially through remote meetings and subsequently through preliminary on-site surveys—they are developed by students as their final graduation projects.

The final elaboration of the projects takes place after study trips lasting twenty to thirty days, during which students have the opportunity to directly observe and engage with the social and environmental contexts in which the projects are to be situated. During these periods, they collect cartographic and documentary material, meet with the communities involved, listen to their needs, and collaboratively construct initial design hypotheses. Upon returning to the university, students, guided by the Laboratory coordinators, refine their proposals through a continuous exchange with the NGOs and local partners, to whom the completed projects are ultimately donated.⁹

Following this methodology, the Laboratory has conducted study trips and design experiences in Senegal, Ghana, Rwanda, Tanzania, Kenya, and Madagascar. In some cases—specifically in Ghana, Senegal, and more recently Madagascar—several of these projects have been realized or are currently under construction. In other cases, such as the projects developed for Nyandiwa, the objective remains to translate the proposed ideas into concrete interventions in the near future.

In Nyandiwa, the Laboratory established partnerships with the NGO International Kenya Scout Development Project (IKSDP) and, through it, with the municipal administration.¹⁰ This collaboration enabled direct engagement with representatives of various local communities, including the fishing community. The projects developed within a general master plan ranged from the redevelopment and organization of the city market spaces to the creation of potable water distribution centers conceived also as places for social interaction; from the design of social housing modules to the planning of sports facilities and a new municipal building. In all

⁹ At this stage, crowdfunding activities to raise construction funds begin. These are directly managed by the involved NGOs; the laboratory becomes engaged only when the project moves toward potential implementation. In this phase, relations with local partners intensify through further site visits, meetings with construction companies, selection of locally available and context-appropriate materials, and the adoption of technologies in continuous dialogue between local knowledge and alternative technical solutions. This is a complex and time-consuming process that does not always reach completion, but the educational and formative value of the experience remains intact, which is the primary goal of the Laboratory.

¹⁰ International Kenya Scout Development Project (IKSDP), “is a non-profit organization (Self Help Project) recognized by the Kenyan government. It was founded through the initiative of the Brownsea Foundation, the Kenya Scout Association, and the World Scout Bureau–Africa Region. Together with its founding partners and the local community, IKSDP launched the international cooperation project Harambee Gwasssi in 1983 in Nyandiwa village, on the shores of Lake Victoria (Homa Bay County, Kenya), which is still ongoing,” “Who We Are,” <https://iksdpanyandiwa.net/en/who-we-are/>.

cases, particular attention was paid to solutions capable of integrating functional needs with respect for local traditions, seeking a balance between innovation and cultural continuity. This approach does not entail any nostalgic reference to archetypal traditional forms, but instead places strong emphasis on the local, community-based housing model as a key reference framework.

Several projects developed for Nyandiwa have received recognition in national and international competitions for young architects, attesting to their quality and social relevance.¹¹

4. A Project for the Fishing Communities

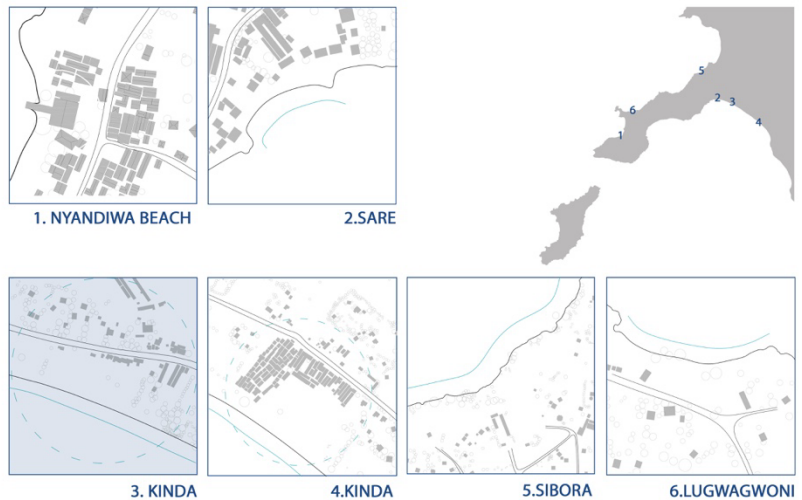
Among the various design proposals developed for Nyandiwa, particular significance is attributed to the project dedicated to the fishing communities. Their activities—primarily focused on night fishing of omena—constitute the true economic and social backbone of the town and represent the main driver of its recent demographic expansion. Along the shores of the Nyandiwa peninsula there are six fishing communities, named after the beaches, where their canoes are pulled ashore: Nyandiwa Beach, Sare, Kinda North, Kinda South, Sibora, and Lugwagwoni (fig. 3). Omena represents an essential and low-cost food source for local populations. Its commercial value, however, lies primarily in its dried form. This characteristic makes it suitable for long-term preservation and transportation to areas far from the lakeshore, either as flour—used as a dietary supplement to support child growth—or as a whole dried product. For these reasons, activities related to omena fishing have assumed a more stable economic role than those associated with Nile Perch, which requires ice and refrigerated infrastructure that is not always available.

Fishing is an ancient practice for many families living along the lakeshore. It is still carried out in a traditional manner—often using paddle-powered canoes and nets—during nighttime hours, exploiting the attraction of artificial light from electric lamps (fig. 4).

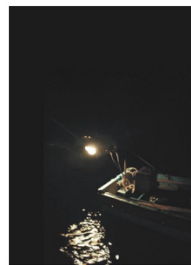
At present, the drying process is conducted entirely outdoors, with durations varying according to weather conditions. Optimal drying generally requires three days

¹¹ Among others, three projects stand out: one focused on the development of a social housing plan and two on the city's new town hall. The projects were developed by architects Stefano Vitale (Silver Medal, Italian Sustainable Architecture Prize – Fassa Bortolo 2022), Francesco Ferraro (Honourable Mention, Italian Sustainable Architecture Prize – Fassa Bortolo 2022), and Myriam Di Mauro (winner of The Plan Award 2022), under the thesis supervision of Sebastiano Nucifora and Alessandro Villari.

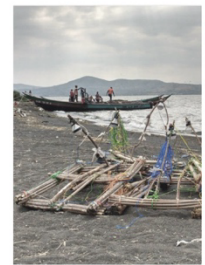
Figure 3. Daniela Iannello, *Location and plans of areas related to the Nyandiwa fishing communities and stages of Omena processing*, 2020. Digital drawing, plate 3 of 16. Courtesy of Daniela Iannello. Originally published in Daniela Iannello, "Supporting facilities for fisheries economy: Nyandiwa, Kenya" (Master's thesis, Mediterranean University of Reggio Calabria, 2020).



In Nyandiwa for most of the inhabitants, fishing is the main activity and source of livelihood. The fishing is mainly based on tiny fish called Omena which are dried in the sun, to be stored and sold.



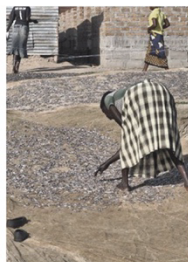
1 NIGHT FISHING



2 SUN DRYING



Omena has a high commercial value as a basic raw material in feed for chickens. It is caught mainly at night using the attraction of light during moonless nights. It is sold to women who spread it to dry it to the sun.



3 SALE





Figure 4. Sebastiano Nucifora, *Fishermen at work*, 2020. Photos by the author.



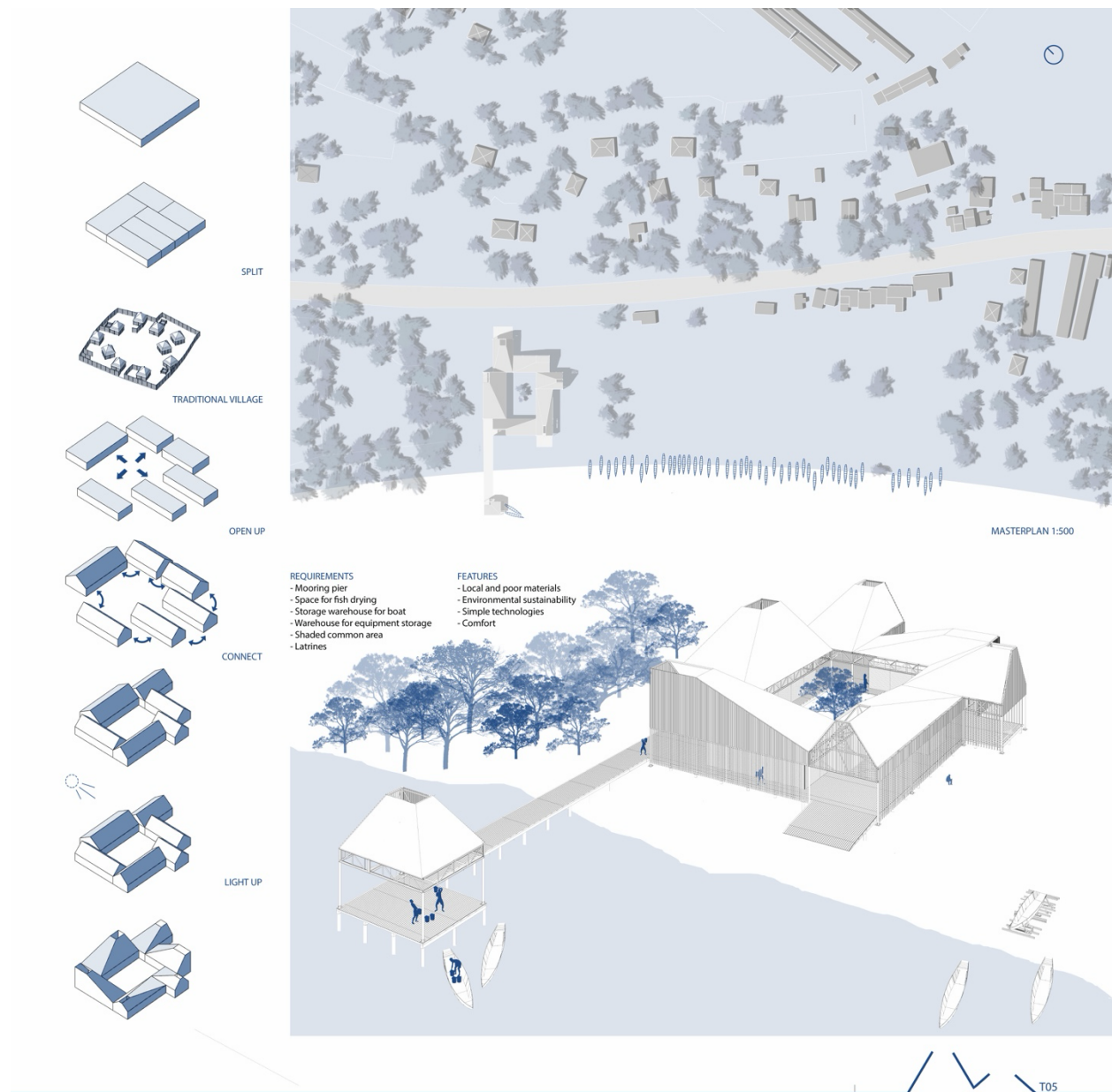


Figure 5. Daniela Iannello, *Project for the Kinda North fishing community*, 2020. Digital drawing, plate 5 of 16. Courtesy of Daniela Iannello. Originally published in Daniela Iannello, "Supporting facilities for fisheries economy: Nyandiwa, Kenya" (Master's thesis, Mediterranean University of Reggio Calabria, 2020).

of exposure to sunlight. Women from the community are responsible for spreading the fish on sheets laid directly on grassy areas extending almost to the shoreline. This operation is time-consuming and requires careful attention. The dried product is then purchased weekly by wholesalers from across the Kisumu region and even from the capital, Nairobi, at extremely low prices. Once transported, wholesalers sell the product to companies that package it whole or grind it to produce fish flour.

This current supply chain penalizes both fishermen and women in Nyandiwa: despite the demanding labor involved in fishing and processing, earnings remain minimal, while wholesalers and retailers secure substantial profit margins.¹²

The pronounced disparity between the price paid to fishermen for omena and the price paid by the final consumer is not accidental, but rather the result of a deeply unbalanced supply chain. Fishermen, lacking adequate equipment for fish preservation and often forced to sell their nightly catch immediately, have no bargaining power: they are *price-takers*, dependent on a limited number of local buyers who control access to the market.¹³

The project for support structures dedicated to fishing activities is conceived as a means to reverse this dynamic and promote the economic development of the community. By encouraging fishermen to organize into one or more cooperatives and providing them with the necessary equipment and technical know-how, it would become possible to manage the entire production process—from drying to packaging and final transport. This approach would not only create new employment opportunities, but also improve overall community well-being, reducing dependence on wholesalers and enabling a more equitable distribution of profits. Beyond the construction of architectural structures, the project also includes the acquisition of dryers, grinders, and transport vehicles for the direct distribution of finished products, allowing the cooperative to independently manage logistics.

¹² Retail prices in urban markets reach up to 500 Ksh per kg in Homa Bay and up to 1,500 Ksh per kg in Nairobi, with international online sales reaching up to 3,000 Ksh per kg. In contrast, fishermen are paid only 40–50 Ksh per kg for dried fish and 20–30 Ksh per kg for fresh fish. The data presented derive from direct field investigations (Nyandiwa 2021) and from the following bibliography and web sources:

<https://openknowledge.fao.org/server/api/core/bitstreams/20e618b3-93a1-488a-9697-798f6b6c6b35/content>;
https://www.fao.org/fileadmin/user_upload/fisheries/docs/Value_chain_dynamics_and_the_small-scale_sector.pdf?utm_source=chatgpt.com; <https://www.jumia.co.ke>; <https://www.knbs.or.ke/wp-content/uploads/2025/10/National-Agriculture-Production-Report-2025.pdf>;
https://lvfo.org/sites/default/files/field/JUNE%202021%20REGIONAL%20CAS%20REPORT_FINAL.pdf;
Mlamba, J. and P. Onyango. “Value Chain Analysis of *Rastrineobola argentea* (Omena) in Kenya.” *Journal of Fisheries Economics and Development* 12 (3) (2017): 45–59; Odongkara, K., et al. “Market Structure and Pricing of Small Pelagic Fish in Lake Victoria.” *African Journal of Aquatic Science* 41 (4) (2016): 421–432.

¹³ In many landing villages, commercialization is controlled by small groups of intermediaries who operate as informal micro-monopolies, setting prices and managing transport, drying, and storage. The real added value occurs in these stages, while fishermen receive only minimal profit. Economic precariousness and institutional weakness further limit cooperative development and bargaining power. High urban demand for omena amplifies distribution chain margins.

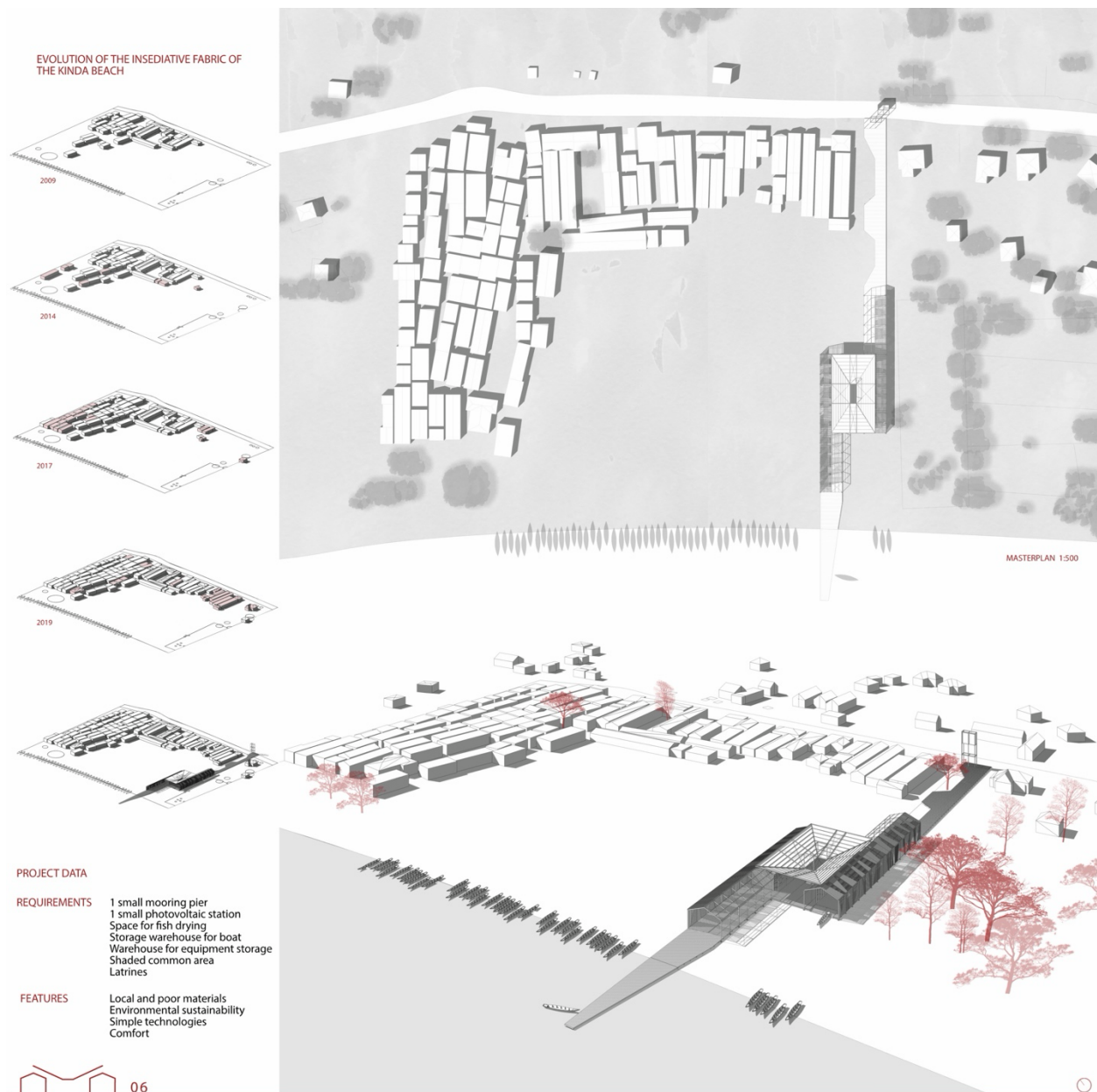


Figure 6. Fiorina Spina, *Project for the Kinda South fishing community*, 2020. Digital drawing, plate 10 of 16. Courtesy of Fiorina Spina. Originally published in Daniela Iannello, "Supporting facilities for fisheries economy: Nyandiwa, Kenya" (Master's thesis, Mediterranean University of Reggio Calabria, 2020).

In line with the broader project framework, the Laboratory focused primarily on the design of architectural support structures. The projects are the result of studies and analyses of the social, urban, and geographical contexts in which they are situated, mediated by the insights and requests that emerged during numerous meetings—both in person and online—with representatives of local communities and all involved stakeholders.



Figure 7. Fiorina Spina, *External view of the project for the Kinda South fishing community, 2020*. Rendered image, plate 15 of 16. Courtesy of Fiorina Spina. Originally published in Fiorina Spina, "Supporting facilities for fisheries economy: Nyandiwa, Kenya" (Master's thesis, Mediterranean University of Reggio Calabria, 2020).

The *Luo* ethnic group, predominant in the Kisumu region in which the Nyandiwa peninsula is located, was studied from both a historical-cultural perspective and in relation to the typical configuration of their traditional villages, which are still scattered throughout the inland areas of the peninsula. This research aimed to recover, within the

new projects, those innovative and remarkably modern aspects that persist within a community-based housing model that continues to represent the essence of rural African society. More than the architectural form itself, following the insights gained from these studies, particular importance was given to the forms of dwelling characteristic of local ethnic groups.

In the layout of the new projects, an open central space is consistently present, representing—much like in rural villages—the core of the community, also used as a place for social interaction and rest from work activities. The formal and identity-related element of the hut has been reinterpreted in a contemporary manner in several projects, assuming the role of a symbolic element in which fishing communities can recognize themselves (fig. 5).¹⁴ The structures are located near the shoreline and also include the construction of a pier to facilitate canoe docking and the unloading of the catch (figs. 6 and 7).

From a functional perspective, the spaces include:

One or more rooms equipped with semi-industrial dryers, capable of drastically reducing drying times, making the process independent of weather conditions, and ensuring hygienic standards.

A room equipped with a grinding machine for the direct production of fish flour.

Open or covered spaces for boat storage.

Charging stations for lamps used in night fishing.

Sanitary facilities.

All structures include the installation of photovoltaic panels to ensure or support the operation of the machinery.

The selection of construction materials—moving beyond a notion of sustainability too often used as a slogan rather than as a genuine resource—followed a criterion of *appropriateness*, based on several fundamental conditions: availability on the local market, low-cost, low-tech processing methods, and above all the skills of the local workforce, often represented by the fishermen themselves, who volunteered to participate in a self-construction process. The choice fell on the use of steel profiles and pre-processed wooden planks (fig. 8). The former were employed—through welding—for both the load-bearing structure and roofing, while the latter, appropriately treated and assembled, were used for enclosure walls and walkways.

¹⁴ Images of the projects presented in this article are taken from the theses of Daniela Iannello, Fiorina Spina, and Renata Grasso at the Mediterranean University of Reggio Calabria. Thesis supervisors: Sebastiano Nucifora and Alessandro Villari.

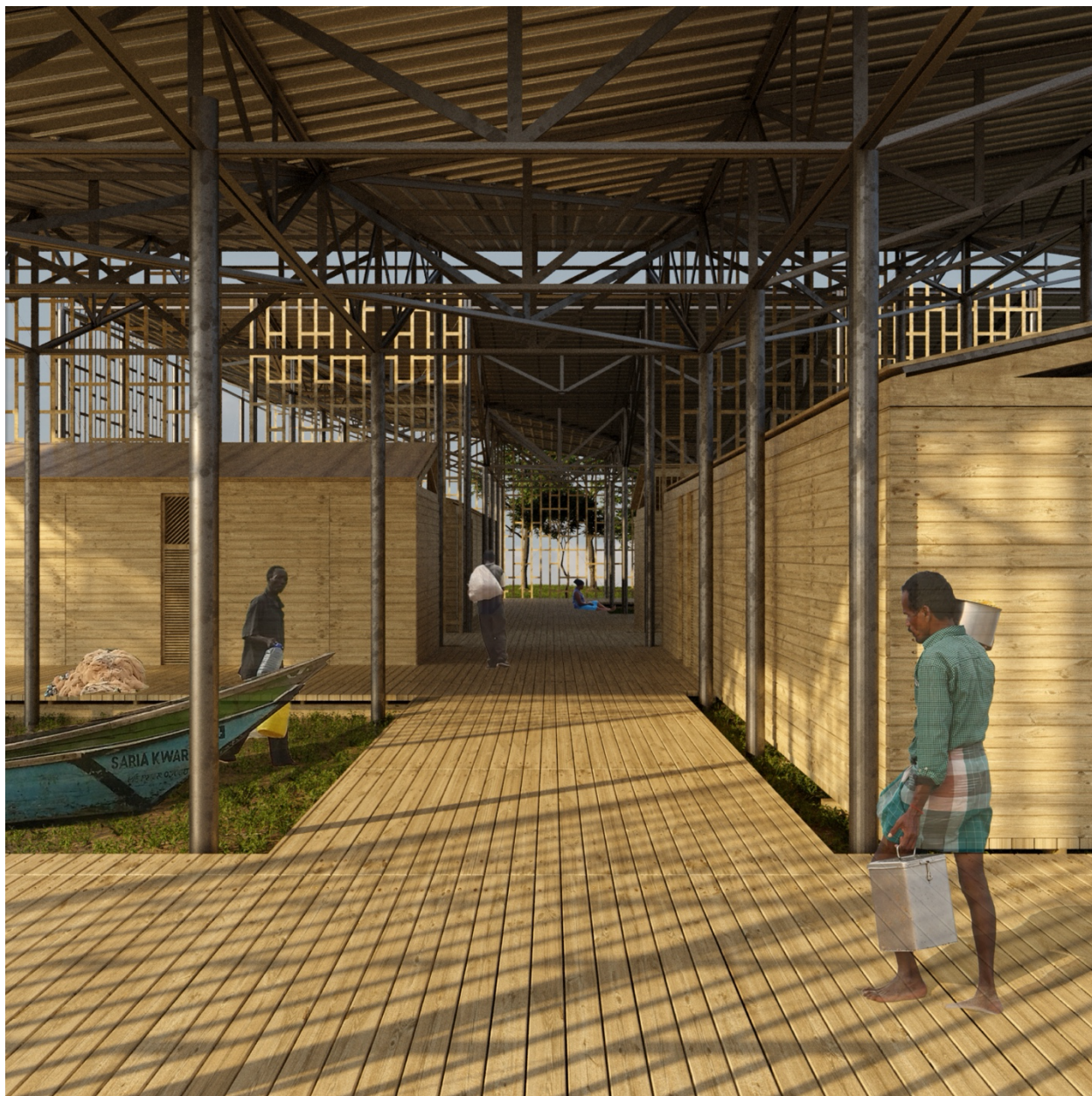


Figure 8. Renata Grasso, *Interior view of the project for the Sibora fishing community*, 2022. Rendered image, plate 10 of 16. Courtesy of Renata Grasso. Originally published in Renata Grasso, "Supporting facilities for fisheries economy: Nyandiwa, Kenya" (Master's thesis, Mediterranean University of Reggio Calabria, 2020).

5. Conclusions

Almost three years after the delivery of the projects, none of them has yet been realized. As often occurs in the complex dynamics related to securing the necessary funding and managing the relationships among the various actors involved in the process, many obstacles have arisen and continue to need to be overcome.

Nevertheless, contacts remain active, and it is the hope of all parties that the situation may eventually be resolved.

Regarding the educational and training experience, however, it can be considered fully successful. For the students, this field experience provided extraordinary formative value: on one hand, they were able to witness firsthand the difficulties and challenges of designing in fragile contexts; on the other, they experienced authentic forms of participatory design. Interactions with the local communities and authorities went beyond the mere collection of technical information, enabling the establishment of trust-based relationships and the positive interpretation of shared values and symbols.

BIBLIOGRAPHY

- Arecchi, Alberto. *Abitare in Africa: Architetture, villaggi e città nell'Africa subsahariana dal passato al presente*. Liutprand, 1998.
- Baker, Jonathan, ed. *Small Town Africa: Studies in Rural-Urban Interaction*. The Scandinavian Institute of African Studies, 1990.
- Chattopadhyay, Swati. *Unlearning the City: Infrastructure in a New Optical Field*. University of Minnesota Press, 2012.
- Davis, Mike. *Planet of Slums*. Verso, 2006.
- Freund, Bill. *The African City, A History: New Approaches to African History*. Cambridge University Press, 2007.
- Gandy, Matthew. "Planning, Anti-planning and the Infrastructure Crisis Facing Metropolitan Lagos." *Urban Studies* 43, no. 2 (February 2006): 371–396.
- International Kenya Scout Development Project (IKSDP). "Who We Are." <https://iksdpanyandiwa.net/en/who-we.-are/>.
- Jenkins, Paul. *Urbanization, Urbanism, and Urbanity in an African City: Home Spaces and House Cultures*. Palgrave Macmillan, 2013.
- Kenya Informal Settlements Improvement Project (KISIP 2). "ESIA Report – Nyandiwa Informal Settlement." <https://www.kisip.go.ke/sites/default/files/2025-05/Nyandiwa%20ESIA.pdf?utm>.
- Koolhaas, Rem. "Fragments of a Lecture on Lagos." In *Under Siege: Four African Cities (Freetown, Johannesburg, Kinshasa, Lagos)*, Documenta11 Platform4 (2002). <https://www.documenta-platform6.de/fragments-of-a-lecture-on-lagos/?utm>.
- Parnell, Susan and Edgar Pieterse. *Africa's Urban Revolution*. Zed Books, 2014.
- Simone, AbdouMalik. *For the City Yet to Come: Changing African Life in Four Cities*. Duke University Press, 2004.
- Simone, AbdouMalik. *The Surrounds: Urban Life Within and Beyond Capture*. Duke University Press, 2022.
- UN-Habitat. *The State of African Cities 2010: Governance, Inequality, and Urban Land Markets*. United Nations Human Settlements Programme, 2010.
- UN-Habitat. *The State of African Cities 2014: Re-imagining Sustainable Urban Transitions*. United Nations Human Settlements Programme, 2014.