IN BETWEEN LAND AND SEA:

Adaptive Redevelopment of the Indigenous Fishing Villages at Mumbai's Coastal Fringes

by

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AUTHOR'S DECLARATION

"I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public."

ABSTRACT

Keywords:
Promenade – Coastal Landscape – Mumbai – Koliwadas – Fishing Villages – Waterfront – Ecology – Economy – Culture – Community – Coastline

Architecture is often understood through the spaces it produces, but its more significant role lies in framing the relationships between people, economies, and environments. When these relationships are disrupted by ecological change and urban expansion, the focus of architecture shifts from form to the conditions that allow communities to endure.

In the city of Mumbai, this shift is most visible along the coastline, where reclamation, large-scale infrastructure, and speculative real estate have steadily eroded ecological systems. Within this changing landscape, the fishing villages of the Koli community, the city's native inhabitants, continue to function as active settlements that support both livelihoods and cultural practices, even as they are reclassified as informal and placed under pressure from redevelopment.

This thesis proposes a framework that responds to the challenges faced by the Koli community through an integrated approach. Ecological restoration is established as the foundation, focusing on mangrove regeneration, wetland protection, and the preservation of tidal flows. Economic resilience is addressed through cooperative infrastructure, including fishing hubs, repair yards, and storage facilities, which strengthen small-scale fishing practices. Cultural presence is supported through plazas, markets, and promenades that keep Koli life embedded within the public realm of the city. Through this lens, the thesis reframes the coastline of the Khar-Danda Village as a shared edge where ecological systems, livelihoods, and cultural practices are sustained together.

ACKOWLEDGEMENTS

I would like to express my deepest gratitude to my supervisor, Professor Rick Andrighetti, for his thoughtful guidance, insightful critiques, and encouragement throughout the development of this work. His ability to challenge while supporting has shaped both the direction and clarity of this thesis. I am equally thankful to Professor Eric Haldenby, my committee member, for his valuable feedback and support, which helped strengthen the research.

I am grateful to my parents for their unwavering support, which goes beyond words. Thank you.

To my friends far away, thank you for the conversations and presence that extended beyond the distance between us.

DEDICATION

This thesis is dedicated to my home, the city of Mumbai. Through the years, its shifting cityscapes, crowded streets, and resilient communities have shaped my perspective on architecture.

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00. INTRODUCTION

PROLOGUE

Cities are often remembered for their skylines, yet they are sustained by landscapes that lie much closer to the ground. In Mumbai, the sea has always been that sustaining presence. It is a boundary, a resource, and a reminder that the city is inseparable from its coast. To live in Mumbai is to live with tides that rise and recede daily, with monsoon floods that reset the city each year, and with coastlines that are never entirely fixed. However, in planning, the sea is often treated as either an obstacle to be conquered or a backdrop for real estate, rather than as a living system that underpins the city itself.[1]

The fishing villages within the city stand at the center of this contradiction. They remain among the few places in the city where the relationship with the sea is direct and daily. Boats arrive with catch, markets open at dawn, and nets are repaired in courtyards and along streets. These villages demonstrate a distinct way of living alongside the coast, one that is cyclical, adaptive, and grounded in shared traditions. At the same time, their presence unsettles dominant narratives of the city.[2] They do not conform to the image of high-rise development, nor to the infrastructures of finance and logistics that often stand for "progress."

What futures are possible for communities whose survival depends on the very ecologies that the city continually depletes?

The thesis positions itself in this space of questioning. It does not begin from an assumption that fishing villages must be preserved, nor from the idea that they should inevitably give way to other forms of development. Instead, it asks how architecture can engage with them as active and contemporary sites where ecological processes, cultural practices, and economic systems intersect.

What is the scope of design in such a context?

Can it secure continuity without fixing the villages into static forms?

1
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.

2
Senapati, Sibananda, and Vijaya Gupta. "Socio-economic Vulnerability Due to Climate Change: Deriving Indicators for Fishing Communities in Mumbai." Marine Policy 76 (2017): 90–971.

Can it strengthen livelihoods without reducing them to infrastructure alone?

Can it make cultural practices visible within the city without turning them into a spectacle?

These questions emerge from a larger unease with the way urban development in Mumbai has approached the coast. Reclamations and highways redraw the shoreline with little regard for the ecologies they displace. Redevelopment policies classify historic villages as informal settlements, as though administrative categories can erase centuries of continuity and cultural heritage.[3] Industrialized economies reshape markets, leaving little room for small-scale practices.[4] Within this frame, the villages become difficult to place. They are neither remnants of the past nor fully integrated into the futures that the city imagines for itself. This in-between position is precisely what makes them important. They reveal the gaps in how the city sees itself, and they force us to consider what kinds of urban futures remain possible.

The scope of this thesis is therefore not to claim to solve the structural inequalities that press against the communities that inhabit them, but it insists that architecture can reframe the conditions under which they endure. By attending to the intersections of ecology, economy, and culture, the project proposes that design can act as a mediator, not by offering singular solutions, but by creating frameworks that allow for adaptation and continuity.

How would the fishing villages continue to exist within a city that constantly redefines its relationship to the sea?

The context of these villages invites reflection on the role of architecture itself. Too often, architectural intervention within the city have been aligned with development understood as replacement, where old structures are cleared. New ones are inserted, and success is measured by permanence. However, the fishing villages complicate this logic. Their spaces are adaptable, their practices are seasonal, and their ecologies are cyclical. They remind us that resilience is not always about permanence, but about the ability to adjust.[5]

3
Parikh, Aparna. "Urban as Palimpsest: Neoliberal Environments, Fishing Livelihoods, and Toxic Landscapes in Mumbai, India." GeoHumanities 6, no. 1 (2020): 139–154.

4
Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

5
Shetty, Prasad, Rupali Gupte, Ritesh Patil, Aparna Parikh, Neha Sabnis, and Benita Menezes. Housing Typologies in Mumbai. Mumbai: CRIT (Collective Research Initiatives Trust), May 2007.

What would it mean, then, for architecture to take adaptability rather than permanence as its foundation?

What kinds of forms and infrastructures would emerge within such a context?

The thesis uses the fishing villages as a ground to test these questions. The project explores how design can support ecological restoration while maintaining livelihood security, provide infrastructure without undermining cultural life, and reimagine the coastline as a shared edge rather than a zone of exclusion. By doing so, it seeks to expand the scope of architecture beyond the provision of buildings and into the negotiation of relationships between environment, community, and city.

The thesis recognizes that fishing villages will continue to evolve, that pressures will persist, and that futures cannot be predetermined. What design can offer is a framework for continuity, a way of holding open possibilities rather than closing them down. This thesis, then, is not a statement of solutions but an entry into a larger inquiry:

How can Mumbai imagine its future without erasing the communities and ecologies that have sustained it for centuries?



01. HISTORICAL BACKGROUND

I. Coastal Foundations

II. Contempary Currents

COASTAL FOUNDATIONS

Historically, Mumbai was an archipelago of low-lying islands shaped by estuarine networks, tidal creeks, and mangrove ecosystems. The natural networks helped regulate water flow, support marine biodiversity and enable early human habitation along the coast. From the early fourteenth to the late fifteenth centuries *(c. 1300–1500), the Koli and Agri communities* established fishing settlements known as Koliwadas on these islands *(Figure 1.1)*.[6]

The Koliwadas were located along creeks and estuary mouths, where access to brackish waters shaped fishing livelihoods *(Figure 1.2)*. These settlements sat within an intertidal landscape in which the edge between land and sea shifted with tidal cycles and the monsoon, producing a mobile coastal boundary.[7]

The early Koliwadas functioned as cohesive socio-ecological units organized around shared labour and kinship. These relationships reveal that the spatial logic of early Koliwadas was inseparable from the geographies of tidal water bodies that sustained them *(Figure 1.2)*.[8]

6
Riding, Tim. "'Making Bombay Island': Land Reclamation and Geographical Conceptions of Bombay, 1661–1728." Journal of Historical Geography 59 (2018): 27–39.

7
Mathur, Anuradha and Dilip da Cunha. SOAK: Mumbai in an Estuary. New Delhi: Rupa & Co., 2009.

8
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.



Figure 1.1
A montage depicting Mumbai's former (c. 1300-1500) archipelago and networks of creeks, estuaries, and marine waters.

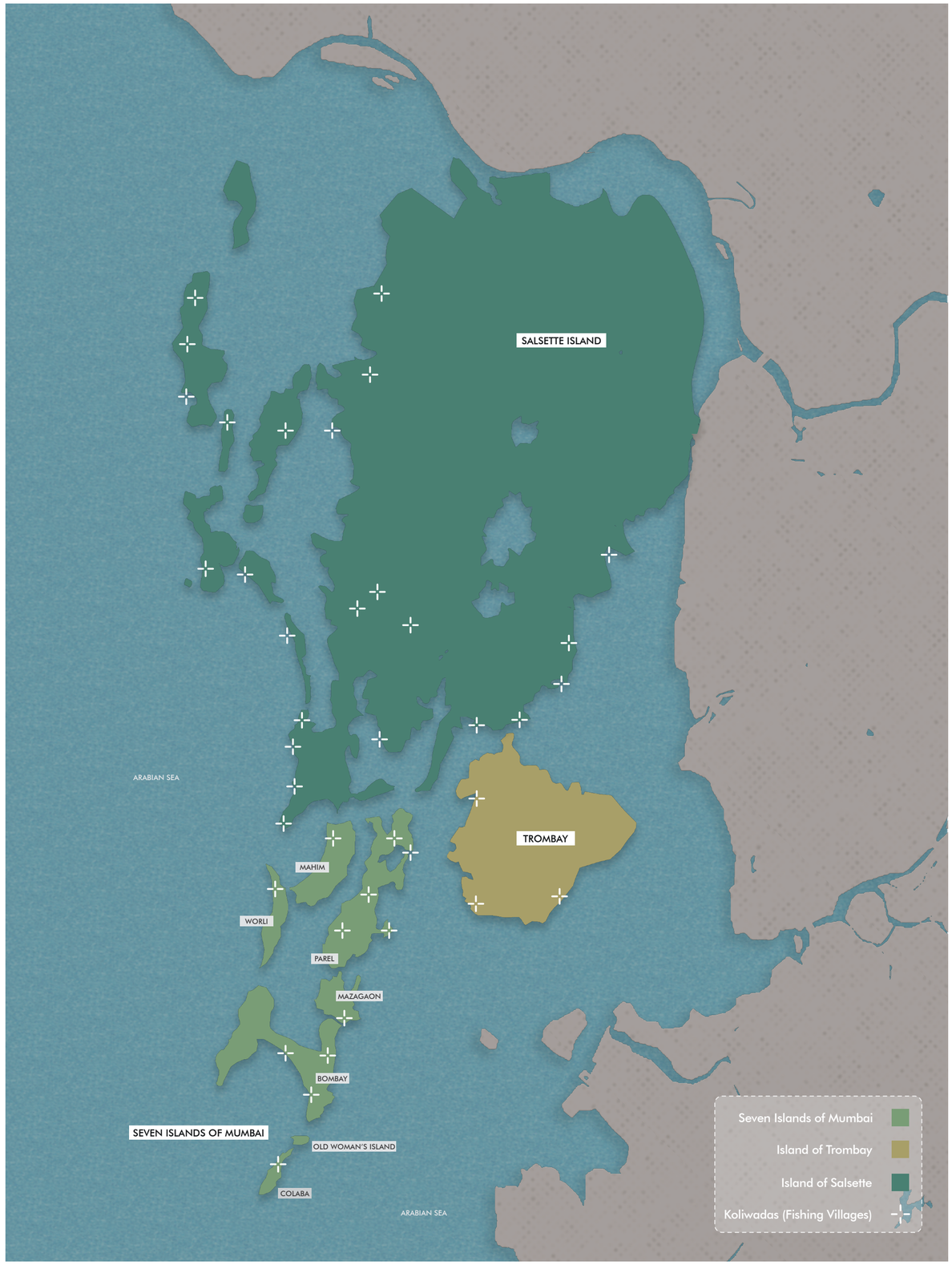


Figure 1.2 A map illustrating the former Salsette, Trombay, and Mumbai's seven islands, with Koliwada settlements highlighted.

The arrival of the Portuguese in the sixteenth century and their subsequent displacement by the British marked a shift in how Mumbai's coastline was organized and perceived. While the Portuguese maintained a relatively dispersed settlement pattern with limited intervention in the natural coastline, the British Raj in the 1690s initiated land reclamation projects *(Figure 1.3)*.[9] These efforts sought to merge the seven islands of Bombay into a single landmass to support the emerging port economy and facilitate administrative control. The first major reclamation initiatives physically redefined the region's geography by draining marshes and connecting islands through artificial embankments. The colonial interventions, aimed at establishing a territorial claim and restructuring land for commercial enterprise.[10]

As a result, by the 1900s, many fishing settlements were either displaced from their original locations or landlocked, losing access to the sea *(Figure 1.4)*. Reclaimed land was repurposed for military, port, and civic uses, often pushing the indigenous fishing communities inland and severing their access to traditional fishing grounds.[11]

9, 10
Riding, Tim. "'Making Bombay Island': Land Reclamation and Geographical Conceptions of Bombay, 1661–1728." Journal of Historical Geography 59 (2018): 27–39.

11
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.



Figure 1.3 A montage depicting the 1690's reclamation commenced under the collonnial rule of the Birtish Raj.



Figure 1.4 A map illustrating the reclamation of Salsette, Trombay, and Mumbai's seven islands, by the British Raj and the Koliwada settlements that adapted to restricted coastal access.

CONTEMPORARY CURRENTS

The post-independence era after 1947 continued with the aggressive urban expansion along Mumbai's coast, now driven by state-led infrastructure projects, industrial development, and real estate growth *(Figure 1.5)*. The transformation of key waterfront areas into ports, highways, and commercial corridors often came at the cost of traditional fishing spaces. While some Koliwadas near mangrove belts and estuarine reserves persisted, others were absorbed into the rapidly expanding city, resulting in a loss of livelihood access *(Figure 1.6)*.[12]

The introduction of the Coastal Regulation Zone (CRZ) Notification in 1991 was an attempt to protect fragile coastal ecosystems and traditional settlements. For the fishing communities, the CRZ policy brought both visibility and vulnerability. Although their traditional rights were recognized in principle, enforcement failures allowed commercial interests to displace them. Environmental degradation from untreated sewage, industrial effluents, and declining mangrove cover further reduced nearshore fish stocks, compelling the fishermen to venture farther into the sea at higher operational costs.[13]

12
Parikh, Aparna. "Urban as Palimpsest: Neoliberal Environments, Fishing Livelihoods, and Toxic Landscapes in Mumbai, India." GeoHumanities 6, no. 1 (2020): 139–154.

13
Chouhan, Hemantkumar A., D. Parthasarathy, and Sarmistha Pattanaik. "Coastal Ecology and Fishing Community in Mumbai: CRZ Policy, Sustainability and Livelihoods." Economic and Political Weekly 51, no. 39 (September 24, 2016): 48–57.



Figure 1.5 A montage depicting the urbanization of post independent Mumbai with respect to the Koliwadas.



Figure 1.6 A map illustrating the Koliwada settlements that adapted to restricted coastal access due to further post independence reclamation.

In 1995, Bombay was renamed to Mumbai, marking a symbolic return to its roots, emphasizing the historical significance of the local Koli community. The name "Mumbai" is derived from the local Goddess *Mumbā Devi*, revered by the Kolis, signifying a shift toward reclaiming cultural identity amidst India's broader post-colonial reorientation.

The Mumbai Coastal Road project that commenced in 2018, proposes a large-scale reclamation of approximately 111 acres along the western shoreline of the city *(Figure 1.7)*. Justified as a solution to urban congestion, the project has resulted in intrusions into intertidal zones, mangrove habitats, and Koli fishing territories. The construction has disrupted over 40 percent of traditional fishing routes and landing points used by Koli fishers.[14] These changes exemplify a broader trend where infrastructure-led development treats the coast as high-value real estate rather than a lived and working landscape *(Figure 1.8)*.

Mangrove areas that help buffer against tidal surges and act as breeding grounds for aquatic species are now at risk of fragmentation. As the city continues to prioritize large-scale reclamation projects, Koliwadas face heightened pressures of spatial marginalization, ecological degradation, and economic displacement.[15]

14
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.

15
Chouhan, Hemantkumar A., D. Parthasarathy, and Sarmistha Pattanaik. "Coastal Ecology and Fishing Community in Mumbai: CRZ Policy, Sustainability and Livelihoods." Economic and Political Weekly 51, no. 39 (September 24, 2016): 48–57.

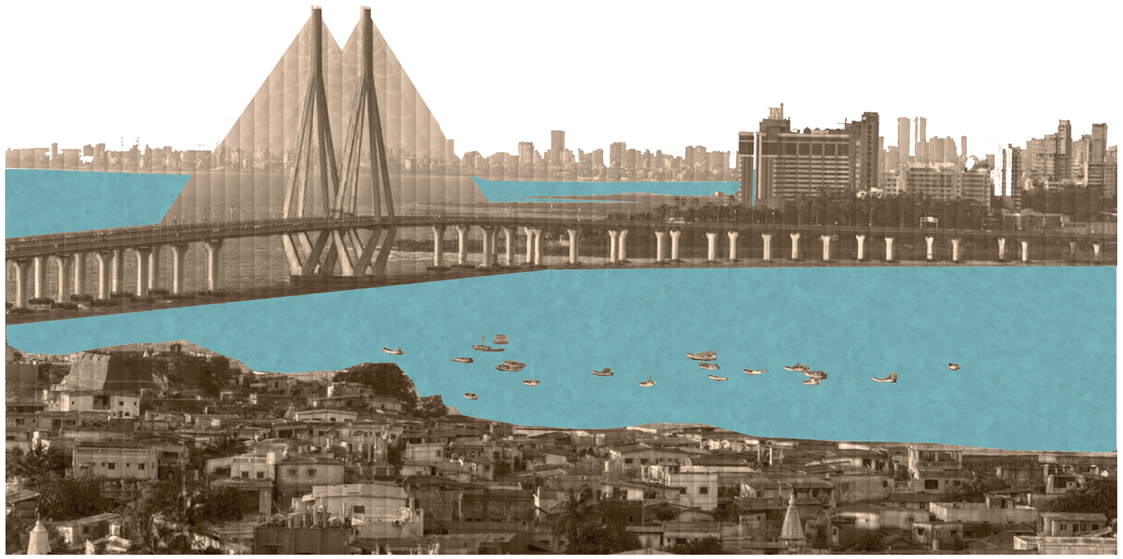


Figure 1.7 A montage depicting land reclaimed for Mumbai's Coastal Road project along the waterfronts of the Koliwadas.

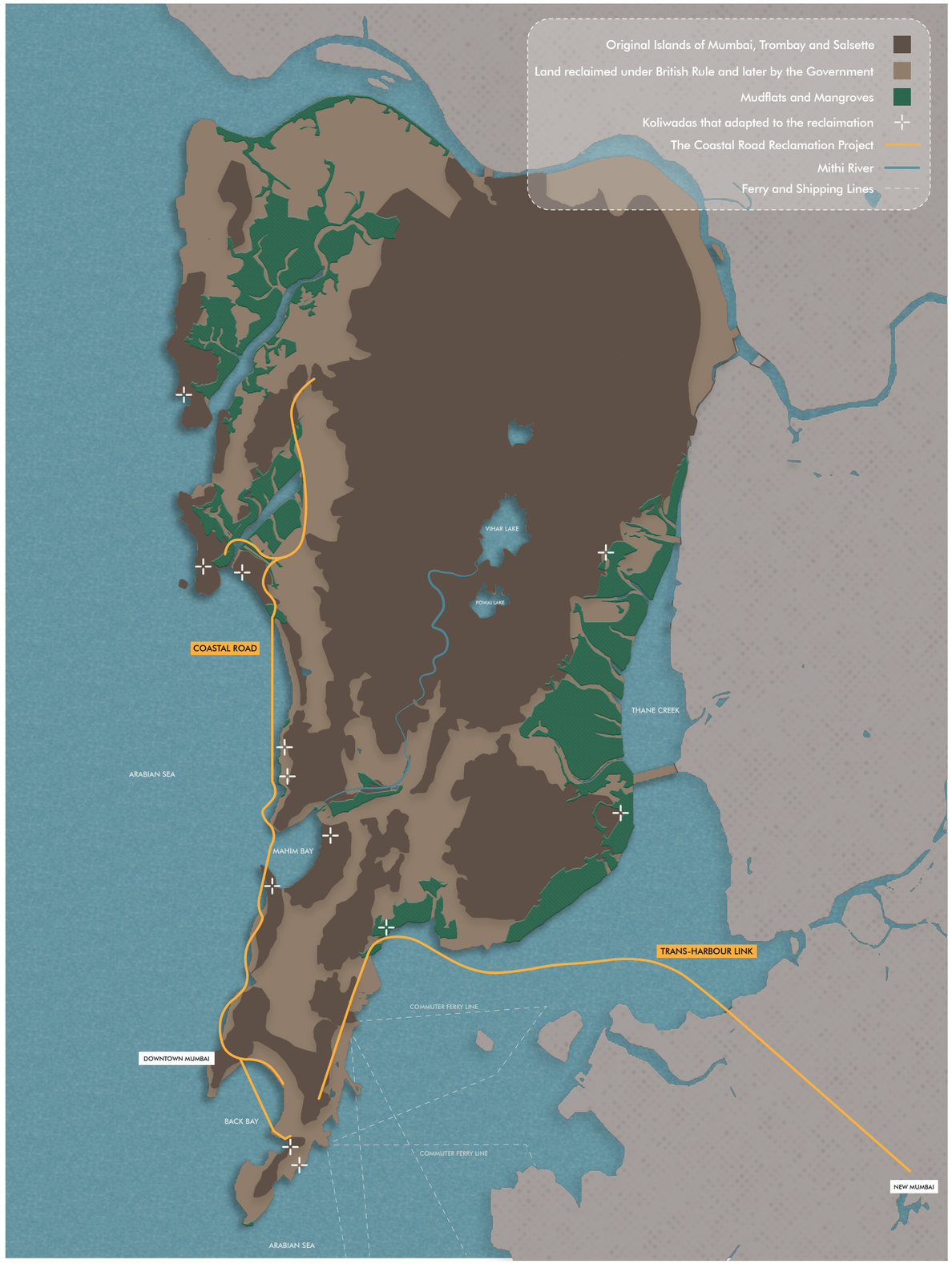


Figure 1.8 A map illustrating the reclamation of Coastal Road leading to further restricted coastal access.

02. EVERYDAY PRACTICE

EVERYDAY PRACTICE

The everyday practices within the Koliwadas shed light on understanding the interactions between the traditional settlements and the growing urban fabric. Conditions emerging from these interactions collectively shape the lived experience and inform the adaptive practices that sustain the Koli communities. Understanding their "everyday practice" involves examining these interactions through three interrelated lenses: environmental, cultural-spatial, and economic. Each lens helps to comprehend the broader context of Mumbai's coastal environment, as well as the evolving challenges faced by the Koli community.

The environmental lens explores how the coastal landscape influences livelihoods. The intertidal zones form habitats for marine biodiversity and also serve as crucial in protecting shorelines from erosion and storm surges. Mumbai's reclamation projects, particularly the coastal road development, have disrupted these ecological processes, affecting fishing practices and community livelihoods. Additionally, policies like the Coastal Regulation Zone (CRZ) notifications help in understanding the permissible activities along the coast. The subsequent sub-chapter, "Ecological Edges," provides insights into these ecological components and analyzes their impacts on Koli settlements and fishing practices.

The second lens focuses on the community's patterns of occupying and utilizing their coastal spaces. The spatial organization of Koliwadas is dynamic, characterized by a blend of residential areas, informal markets, and open multifunctional spaces. These multifunctional spaces accommodate cultural activities, temporary shelters and marketplaces, reflecting the impermanent and adaptive nature of Koli's way of living. The sub-chapter of "Cultural and Spatial Dynamics," will delve into the spatial uses and the notion of impermanence, examining how these factors inform the community's resilience and adaptability within Mumbai's rapidly transforming urban fabric.

Finally, the third lens examines the economic practices of the Koli fishers. The study analyzes the Koli fishing economy by comparing the traditional fishing practices of a typical day in a Koli fisher's life with those of larger commercial fishing operations. The comparison highlights the challenges and disparities faced by small-scale fishers due to increasing competition and declining marine resources. Additionally, it addresses the shifting aspirations within the younger Koli generation, many of whom now seek alternative employment as traditional fishing is no longer economically sustainable. The subsequent chapter, "Economical Framework," provides a comparative market study, highlighting the operational differences between the Koli fishers and commercial fisheries, thereby illustrating the need for economically sustainable interventions.

Together, these three lenses—environmental, cultural-spatial, and economic—form the foundation for understanding the everyday realities of the Koli communities. Investigating each lense provides a context for informed urban planning and community-centred interventions to preserve the coastal landscape and communities.

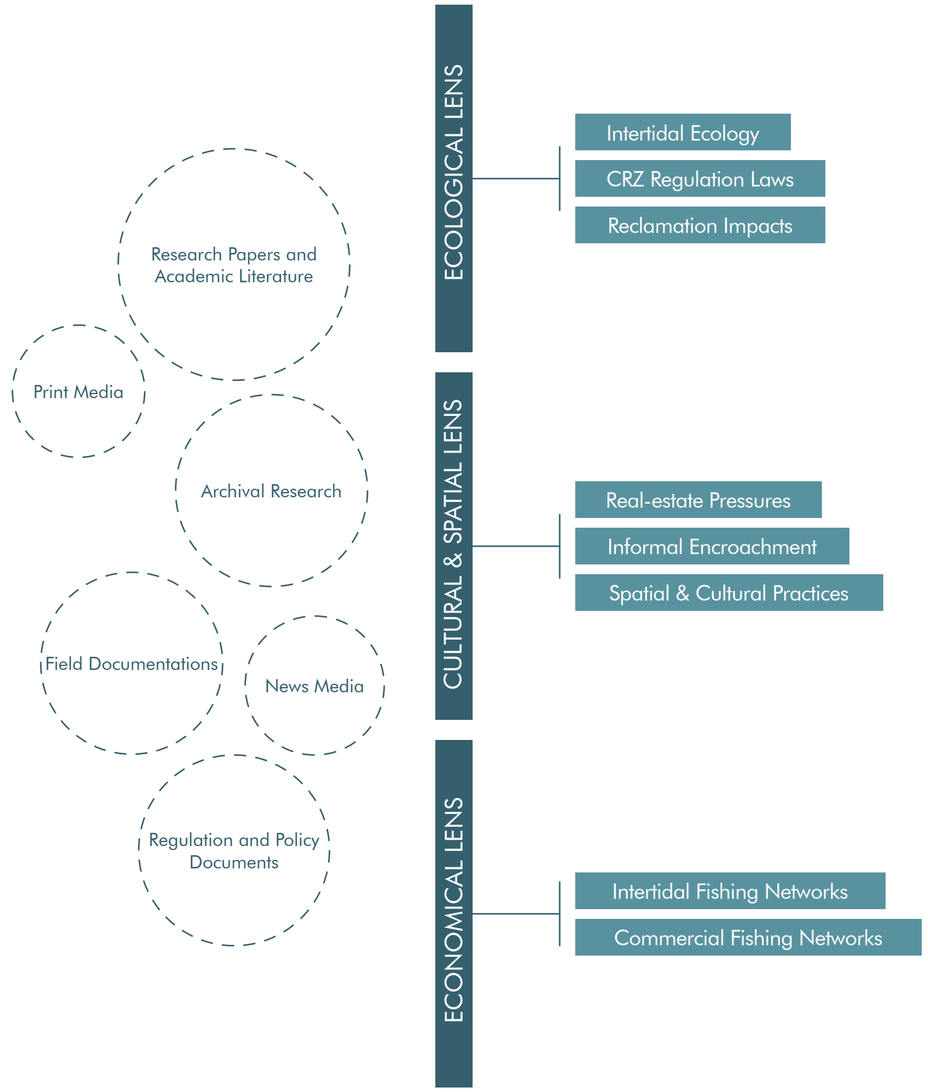


Figure 2.0
A diagram illustrating the Research Approach and Methodologies.

02.1 . ECOLOGICAL EDGES

I. Mumbai's Intertidal Ecology

II. The CRZ Notification 2019 and the Coastal Road Reclamation Project

MUMBAI'S ITERTIDAL ECOLOGY

Mumbai's inter-tidal zone is a narrow belt of shore that lies dry at low tide and underwater at high tide, functioning as a living hinge, linking the Arabian Sea to the city. Twice each day, the shoreline advances and retreats with the tide's semi-diurnal rises and falls. The tide's rhythm shapes sediment transport and the working hours of the Koli fishermen. [16]

Ecologically, the inter-tidal zones are irreplaceable as they nest Mumbai's remaining mangrove forests. The mangroves dampen wave energy, facilitate carbon sequestration, and act as nurseries for juvenile fish, prawns, and crabs that sustain the daily catch for small-scale fishers. Within the Mahim Bay and Thane Creek, the Koli fishermen continue to target species that depend on mangrove detritus, such as *Bombay duck (Bombil)*, mud crabs, prawns, and shellfish.[17] The removal of even a narrow mangrove fringe disrupts the coastal food chain, resulting in a lower catch rate and reduced household income.

The mudflats within the intertidal zones host bristle worms, mussels, and migratory birds, such as flamingos, which help to cycle nutrients that sustain offshore productivity. During low tide, fishers collect mud crabs, clams and oysters, an informal aquaculture practice that depends entirely on predictable tidal retreat within the mudflats. Several fishers within the neighbourhoods of Versova, Khar Danda, Mahim, Colaba, Worli, and Juhu along the western shoreline of the city reported a decline in opportunities for informal aquaculture practices due to infrastructure development projects.[18]

16, 18
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.

17
Chouhan, Hemantkumar A., D. Parthasarathy, and Sarmistha Pattanaik. "Coastal Ecology and Fishing Community in Mumbai: CRZ Policy, Sustainability and Livelihoods." Economic and Political Weekly 51, no. 39 (September 24, 2016)

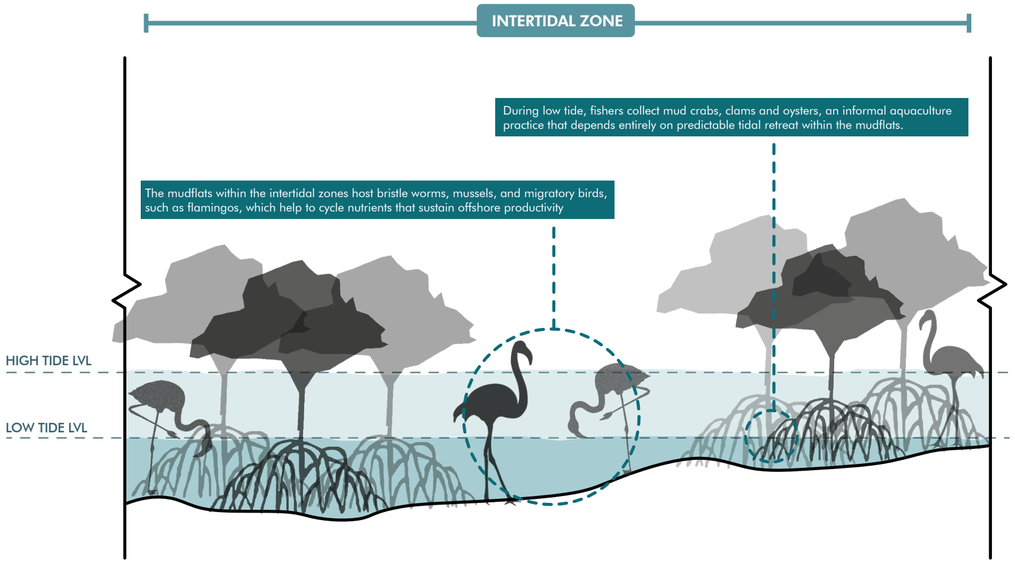


Figure 2.1.1
A schematic section illustrating how the Intertidal Zone forms habitats for marine biodiversity and also serve as crucial in protecting shorelines from erosion and storm surges.

Mumbai's inter-tidal flats act as a runoff for stormwater. More than 150 drains and *nullahs* pour into the sea, creeks and bays. At low tide, they flush rainwater out to sea; however, where new construction has squeezed the shoreline, the water backs up and floods inland areas.[19] This was evident during the 2005 Mumbai floods, where narrow channels leading to the Mahim Bay left low-lying suburbs underwater.[20]

The intertidal edge serves as an interface that facilitates the movement of water, sediment, and organisms that rely on these resources for their livelihoods. Keeping the edge porous by preserving mangrove belts and setting buildings back cuts flood risk and sustains the Kolis' fishing economy.

19
Pagare, N. S., R. Kumar, A. J. Aran Castro, Justine K. Antony, P. Raj Kumar, and Praveen Raj R. "Mapping the Wetlands of Mumbai and Surrounding Area Using Remotely Sensed Sentinel-2b Data." Turkish Online Journal of Qualitative Inquiry (TOJQI) 12, no. 7 (July 2021): 6964–6980

20
Senapati, Sibananda, and Vijaya Gupta. "Socio-economic Vulnerability Due to Climate Change: Deriving Indicators for Fishing Communities in Mumbai." Marine Policy 76 (2017): 90–971.

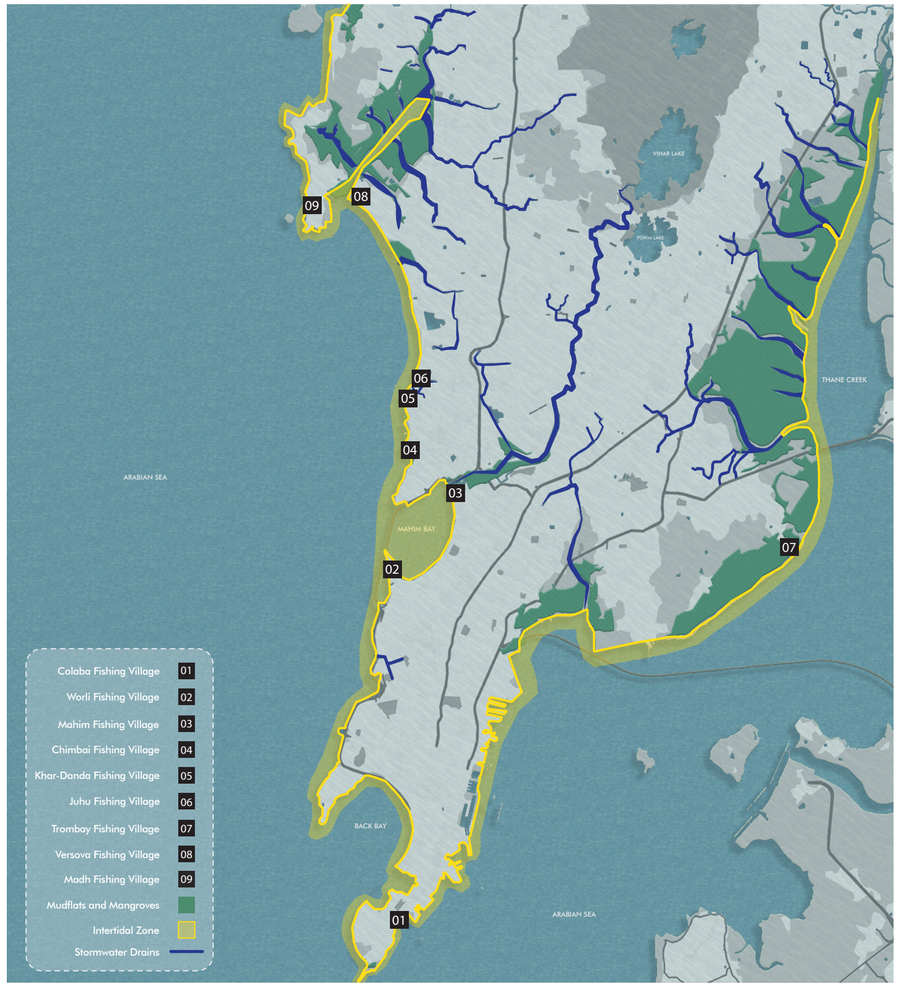


Figure 2.1.2
A map illustrating the Intertidal Zone, Mangroves, Natural Stormwater Drains and the villages that adapted to the reclamation process.

THE CRZ NOTIFICATION AND THE COASTAL ROAD RECLAMATION PROJECT

India's Coastal Regulation Zone (CRZ) Notification was established to conserve fragile shorelines while protecting the traditional rights of fishing communities. The 2019 amendment reaffirmed that the shoreline from the High-Tide Line (HTL) to 500 m inland, the inter-tidal zone between the HTL and the Low-Tide Line (LTL), and the marine belt extending out to the territorial sea limit as a legally regulated space.[21] These statutory limits are intended to balance ecological integrity, risk reduction and livelihood security along densely settled coasts.

CRZ-I comprises the most sensitive reaches. The sub-classification CRZ-IA protects mangroves larger than 1,000 m^2, mudflats, and analogous geomorphic buffers. Only linear public utility infrastructure such as underground pipes, transmission lines, or a road on stilts is admissible, and even then, only with stringent safeguards in place. CRZ-IB extends across the exposed intertidal zone itself, where foreshore facilities such as jetties, sea links, or pipelines may be permitted after appraisal, but land reclamation is explicitly prohibited.[22] For Mumbai, these restrictions are critical because its tidal creeks, seasonal mudflats and mangroves dissipate storm surges and accommodate habitats for commercially important aquatic life on which the Koli fishers depend.

CRZ-II covers land that is already formalized within municipal limits and has more than 50% plot coverage. Redevelopment is limited to the landward side of an existing road; nothing new may rise seaward of that line. This clause was introduced to prevent the seaward encroachment of real estate that would otherwise infringe on public beaches and promenades.[23]

CRZ-III is assigned to undisturbed or peri-urban stretches. The sub-categorisation reflects population density. In CRZ-IIIA (density > 2,161 persons km^2), the No-Development Zone (NDZ) is narrowed to 50 m, whereas CRZ-IIIB retains the earlier 200 m NDZ.[24] Beyond the NDZ, low-rise housing that respects customary fishing village footprints, basic civic utilities, and eco-tourism shacks are permissible. Facilities for fish drying, net mending, or auction yards may also be established inside the NDZ when they directly support traditional livelihoods.[25]

CRZ-IV lies waterward of the LTL, extending 12 nautical miles to the outer limit of territorial waters and upstream to the tidal limit in creeks. Traditional fishing, navigation, and offshore renewable-energy structures are permitted, whereas extractive industries or waste disposal require specialized clearances.[26]

21, 22, 23, 24, 26
Government of India, Ministry of Environment, Forest and Climate Change. Coastal Regulation Zone Notification, 2019. Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i), G.S.R. 37(E). New Delhi, January 18, 2019. Accessed June 26, 2025. https://www.mczma.gov.in/content/crz-notification-2019.

25
Chouhan, Hemantkumar A., D. Parthasarathy, and Sarmistha Pattanaik. "Coastal Ecology and Fishing Community in Mumbai: CRZ Policy, Sustainability and Livelihoods." Economic and Political Weekly 51, no. 39 (September 24, 2016): 48–57.

The Notification also lists activities barred everywhere in CRZ, notably new land reclamation, bunding, and any action that disturbs the natural course of seawater, unless exempted.[27] This provision is relevant to Mumbai's ongoing Coastal Road scheme, an eight-lane highway that is partly built on reclaimed land across the Worli intertidal zone. A short stretch of the road will sit on stilts, an option for CRZ-IB that allows for development when no landward route exists. However, the neighbouring sections will be built on reclaimed land. The reclamation will cover tidal flats with concrete, opposing the conservation goal of CRZ-I. It may block the tidal flow from the Mahim creeks, which carry stormwater to the sea. For the villages on these creeks, weaker tidal exchange means fewer prawn larvae and smaller catches, worsening the economic pressures on the fishing communities.[28] The Coastal Road scheme highlights the ongoing tension between ambitious large-scale infrastructure projects and the caution inherent in CRZ rules I to IV.

Within the CRZ framework megaprojects bypass or dilute the rules, the city loses tidal flats, mangrove buffers and Koli access in ways the classification was meant to prevent, showing that compliance is necessary for both coastal resilience and livelihood security.[29]

27
Government of India, Ministry of Environment, Forest and Climate Change. Coastal Regulation Zone Notification, 2019. Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i), G.S.R. 37(E). New Delhi, January 18, 2019. Accessed June 26, 2025. https://www.mczma.gov.in/content/crz-notification-2019.

28
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.

29
Senapati, Sibananda, and Vijaya Gupta. "Socio-economic Vulnerability Due to Climate Change: Deriving Indicators for Fishing Communities in Mumbai." Marine Policy 76 (2017): 90–971.

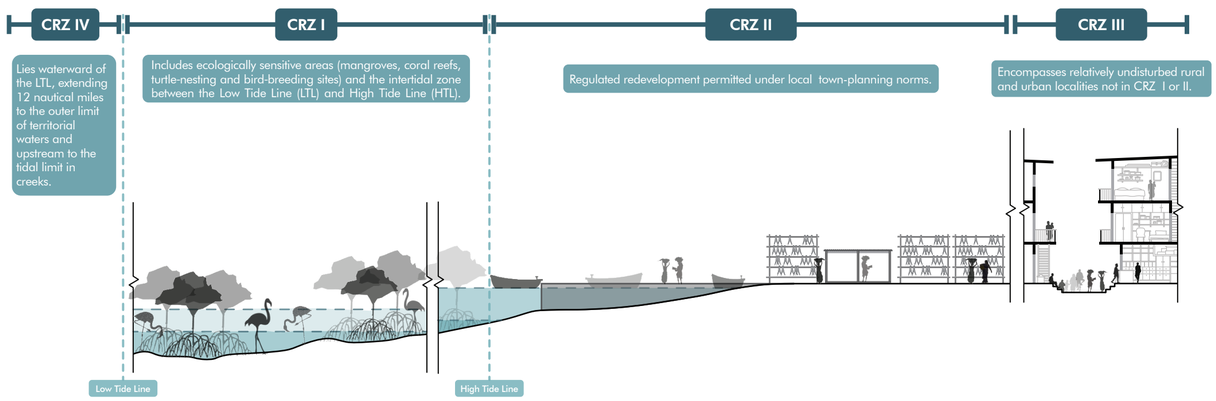


Figure 2.1.3
A schematic section illustrating the CRZ zonning regulations.

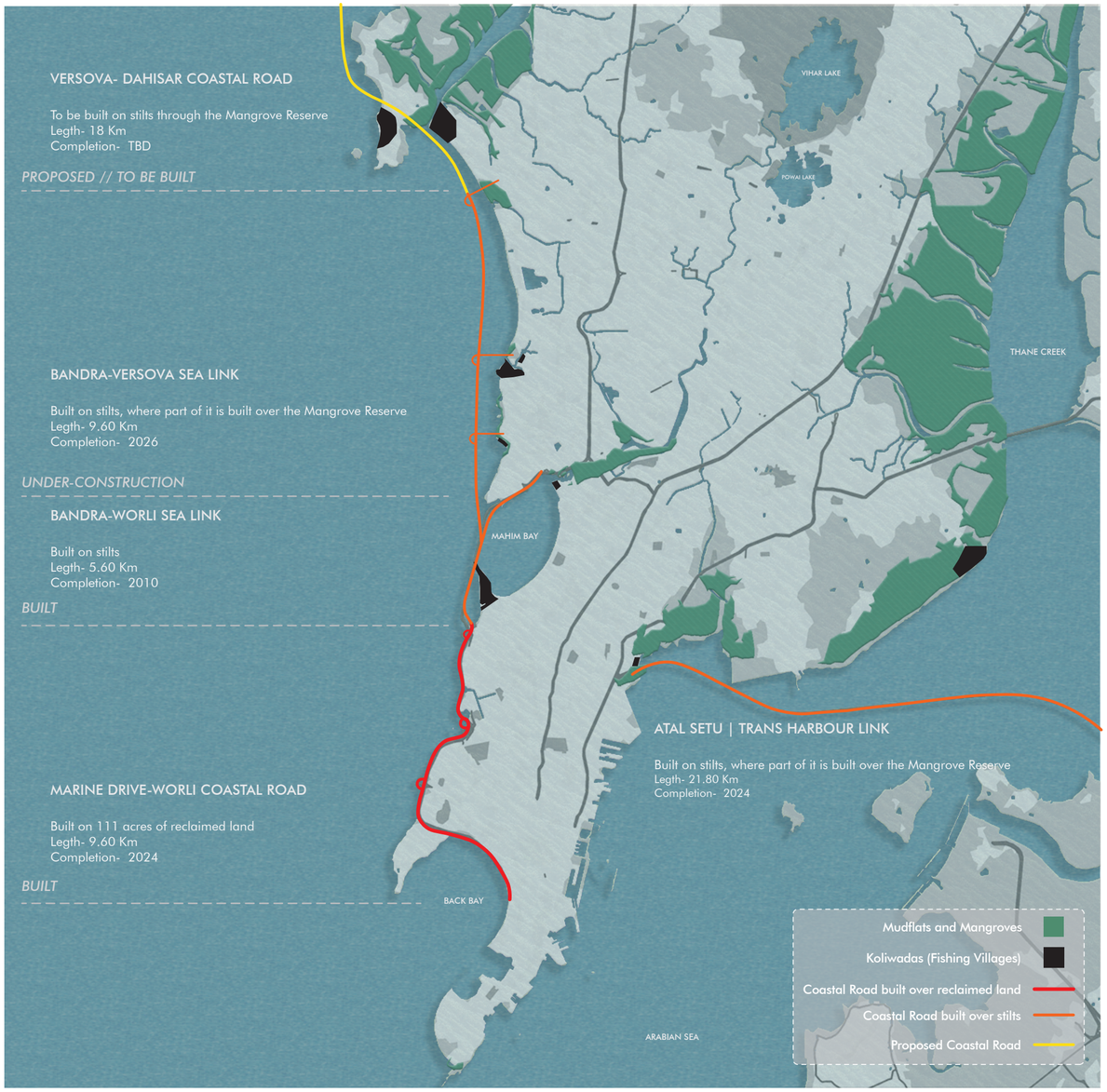


Figure 2.1.4
A map illustrating the reclamation of Coastal Road leading to further restricted coastal access.



Figure 2.1.5
An image depicting the land reclamation work in progress for the Marine Drive-Worli Coastal Road.



Figure 2.1.6
An image depicting the completed Marine Drive-Worli Coastal Road.

02.2 . CULTURAL AND SPATIAL DYNAMICS

I. Mapping the Koliwada Spatial Practices

II. Real estate and Informal Encroachment

III. Spatial Practices along the Coastal Edge

IV. Spatial Practices along the Koli Streets

MAPPING THE KOLIWADA SPATIAL PRACTICES

The Koliwadas originated from agrarian and fishing settlements characterized by compact housing structures and community-oriented layouts. Today, the built environment includes traditional single-story houses with sloping roofs and newer, multi-story RCC buildings, indicating an evolving socio-economic dynamics.[31]

The Koliwadas of Madh, Versova, Worli, Mahim, Khar-Danda, Juhu, Trombay, Colaba, and Sewri continue to extensively engage in traditional fishing practices despite substantial pressures from urban transformation.[32] These villages are characterized by intricate spatial configurations shaped by fishing activities, reflecting a deep-rooted relationship with their coastal environments. The built fabric typically comprises a central street leading to the coastline, where activities such as boat and net repairs, fish drying, auctions, and cultural events are concentrated.[33] Among these, the village of Worli is analyzed as representative cases to understand the spatial characteristics.

The residents' daily activities include fishing, fish processing, and market interactions that are closely tied to the tidal cycles and monsoon seasons. The urban morphology and community organization within the villages reflect multifunctional and adaptable use of space.

31, 32, 33
Shetty, Prasad, Rupali Gupte, Ritesh Patil, Aparna Parikh, Neha Sabnis, and Benita Menezes. Housing Typologies in Mumbai. Mumbai: CRIT (Collective Research Initiatives Trust), May 2007.

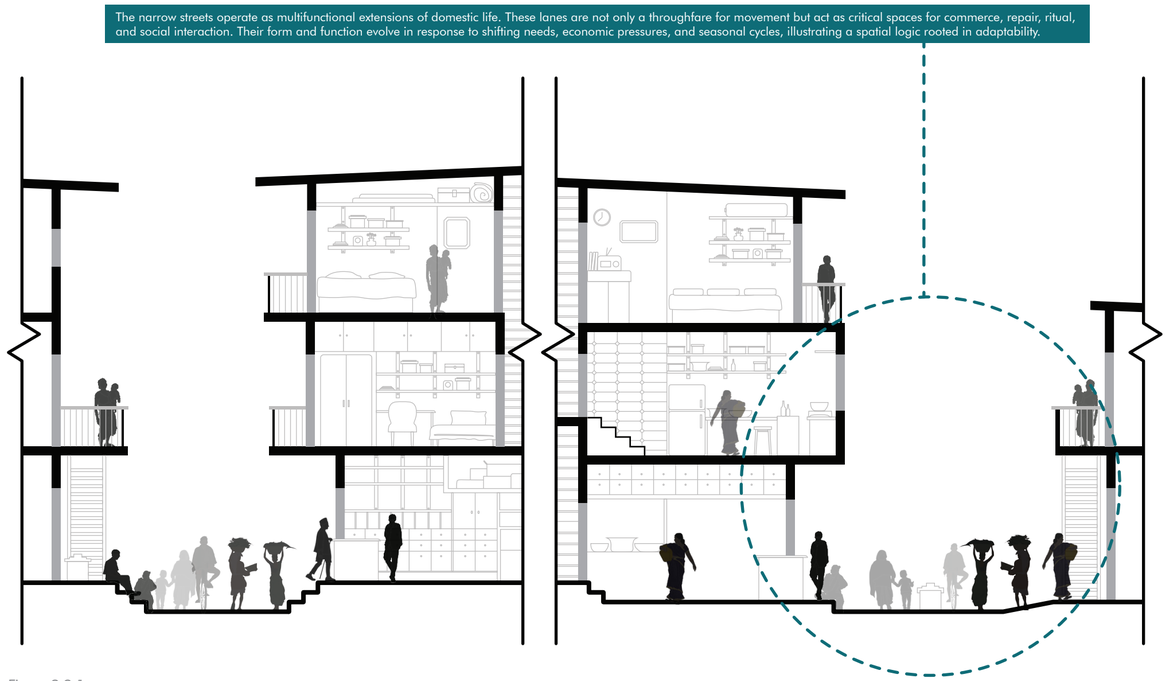


Figure 2.2.1
A schematic section illustrating the interaction that takes place at the village street.



Figure 2.2.2
A map illustrating the major fishing villages across the city and the highlightied Worli Koliwadas which would be studied to understand the village spaces.

REAL ESTATE AND INFORMAL ENCROACHMENT

The edges of the Koliwadas have long been sites of contestation. What began as spatial overlap between the fishing villages and incoming informal settlements has, over the past few decades, escalated into a larger struggle over land ownership, recognition, and rights to self-determination. The narrative of redevelopment in these areas cannot be understood without first tracing how urban expansion and migration created pressures that blurred the boundaries between Koli settlements and informal encroachment.

In 1991 following the post-independence economic liberalization, migrant workers settled around the peripheries of Koliwadas, occupying coastal edges and vacant spaces. The informal encroachment gradually merged with village boundaries. As a result, the informal settlements grew, and state institutions began treating the entire area, including the Koliwadas, as one informal unit, a move that would later justify large-scale rehabilitation under urban redevelopment schemes.[34]

In 2005, the Slum Rehabilitation Authority (SRA) extended the informal settlement's rehabilitation schemes to the coastal villages. Coastal land, was seen as high-value property and reclassified for redevelopment through public-private partnerships. Many Koliwadas were subsumed within these boundaries, despite their historical continuity and distinct cultural identity. Koliwadas that were redeveloped under SRA disrupted fishing livelihoods and reduced access to the coast.

34
Parikh, Aparna. "Urban as Palimpsest: Neoliberal Environments, Fishing Livelihoods, and Toxic Landscapes in Mumbai, India." GeoHumanities 6, no. 1 (2020): 139–154.



Figure 2.2.3
Timeline supplemented with news headlines highlighting the real estate pressures through the rehabilitation scheme.

In response, the Koli commuity began asserting claims of ancestral land ownership and demanded the right to self-develop. In 2019, disputes over land titles intensified, supported by legal appeals and community mobilization. Koli leaders framed redevelopment not merely as displacement but as erasure of a cultural and occupational identity. This marked a shift in discourse, from negotiating rehabilitation to demanding autonomy.[35]

In 2023, the state acknowledged Koliwadas as distinct settlements, allowing for provisional recognition of village boundaries and enabling Koli communities to undertake self-development projects. However, these recognitions remain partial and subject to ongoing litigation. Informal settlements surrounding the villages are still marked for redevelopment, and tensions between indigenous rights and state-approved development persist.

35
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023).



Figure 2.2.4
A map highlighting the developement within the Worli Koliwada, showcasing areas impacted by real estate pressures and informal encroachmet.

SPATIAL PRACTICES ALONG THE COAST

The coastal edges of the *Koliwadas* are dynamic spaces that accommodate a range of seasonal, occupational, and cultural activities. These zones shift in function throughout the year, reflecting a spatial logic rooted in temporality and adaptability. During the off-season, when fishing is restricted by weather or a fishing ban, the coastal spaces are occupied by temporary shelters built from bamboo, fabric, or corrugated sheets. These structures are used for drying fish and the repair of nets, boats, and other fishing equipment, activities that are crucial to the continuity of the fishing economy but require only temporary occupation of space.

This spatial practice reflects a culture of impermanence embedded in the everyday life of the Kolis. The notion of impermanence here is similar to the Japanese architect Kisho Kurokawa's concept of en-space, which refers to spaces that are flexible, semi-public, and capable of transforming based on need rather than being fixed for a specific use.[36] The temporary shelters and open grounds at the shoreline act as such spaces. They are activated seasonally, used collectively, and repurposed with minimal resistance to change.

Beyond their economic function, the coastal spaces also hold cultural and social significance. Festivals such as *Narali Purnima* (celebrated to mark the beginning of the fishing season) are performed by offering coconuts to the sea, invoking its protection and abundance. *Ganesh Chaturthi* is similarly observed, with processions moving through the villages and culminating in immersions at the shore. These acts not only sanctify the coastline but also reinforce the sea's role in sustaining the community's cultural identity.[37]

36
Kurokawa, Kisho. Metabolism in Architecture. London: Studio Vista, 1977, 171-172.

37
Jio Institute Digital Library. "The Koli Festival of Narali Purnima." Accessed July 5, 2025. https://exhibits.jioinstitute.edu.in/spotlight/the-koli-festival-of-narali-purnima

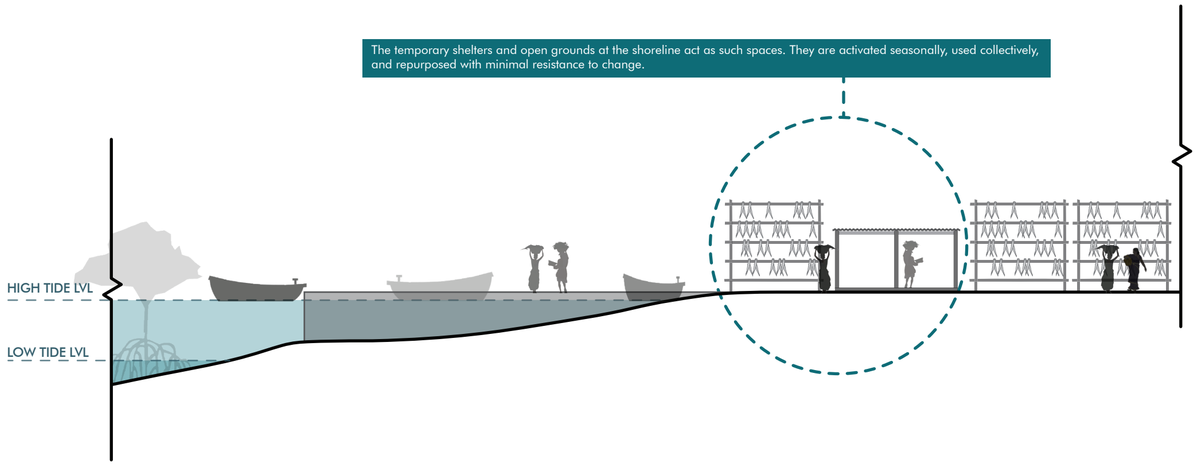


Figure 2.2.5
A schematic section highlighting the coastal activity.

Moreover, these coastal areas double as informal recreational and communal zones. Children play, residents gather, and elders sit along the sea walls, creating a space that is simultaneously functional, social, and symbolic. The boundaries between work, leisure, and ritual are not clearly demarcated. Instead, they overlap, illustrating a flexible use of space that challenges rigid zoning or programmatic separation common in urban planning.[38]

The intertidal zone, essential for fishing, also plays a role in shaping these social and cultural dynamics of the community. It becomes a zone of interaction between land and sea, between labor and festivity, and between permanence and temporality.[39]

38, 39
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.



Figure 2.2.6
A map highlighting the open coastal spaces that are adapted to fishing and multipurpose use.



Figure 2.2.7
An image of temporary structures set up for drying fish.



Figure 2.2.8
An image of the fishers auctioing fish informally within the open coastal spaces while at the same time unloading their stock.



Figure 2.2.9
An image showing how the open spaces along the coast and within the villages are used for actives relating to repairs and maintainance of fishing gear.





Figure 2.2.10
An images of the coastal spaces during the festival of Narali Purnima.

SPATIAL PRACTICES ALONG THE KOLI STREETS

Within the dense layouts of the *Koliwadas*, the narrow streets operate as multifunctional extensions of domestic life. These streets are not only a throughfare for movement but act as critical spaces for commerce, repair, ritual, and social interaction. Their form and function evolve in response to shifting needs, economic pressures, and seasonal cycles, illustrating a spatial logic rooted in adaptability.

Within the village of Worli, many homes have adapted their frontages to include small businesses such as grocery stores, and, food stalls blurring the boundary between private residence and commercial enterprise. This transformation often emerges from necessity, as declining returns from fishing push younger residents toward alternate livelihoods.[40] These micro-economies illustrate how the built fabric is incrementally altered, responding not to formal planning mechanisms but to household-level decisions shaped by livelihood strategies.[34]

In quieter lanes, verandas and thresholds act as flexible spaces for net repairs, conversations, and welcoming visitors. These transitional areas are architecturally modest but socially significant, allowing residents to engage with the street while maintaining a degree of privacy. These spaces support a range of activities throughout the day, functioning as en-spaces, zones of shared negotiation, informality, and change, rather than fixed or programmed uses.[41] This reflects a culture where impermanence is embedded in spatial practice rather than treated as an exception.

The everyday life of the street is further animated by mobile vendors, informal markets, and seasonal rituals. Temporary stalls emerge during early mornings or festival periods, occupying lanes without disrupting circulation. The lanes transform again during festivals like *Holi*, where processions and community gatherings repurpose the same spaces for collective ritual and festivity. These temporal activities show how spatial use is shaped by time, ecology, and culture, underscoring the embeddedness of the street in cultural life.[42]

Street-based interactions also reinforce social cohesion in the face of increasing pressures from urban redevelopment. As public space shrinks and formal planning fails to accommodate cultural practices, the street remains one of the few adaptable and multifunctional spaces. Here, a shared ethics of use persists, maintained not by zoning codes but by the collective community.[43]

40
Parikh, Aparna. "Urban as Palimpsest: Neoliberal Environments, Fishing Livelihoods, and Toxic Landscapes in Mumbai, India." GeoHumanities 6, no. 1 (2020): 139–154.

41, 44
Shetty, Prasad, Rupali Gupte, Ritesh Patil, Aparna Parikh, Neha Sabnis, and Benita Menezes. Housing Typologies in Mumbai. Mumbai: CRIT (Collective Research Initiatives Trust), May 2007.

42
Kurokawa, Kisho. Metabolism in Architecture. London: Studio Vista, 1977, 171-172.

43
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.

The villages informality, adaptability, and collective maintenance represent a form of spatial resistance against top-down redevelopment schemes that do not acknowledge micro-level social infrastructures. By embedding economic, domestic, and cultural practices into a single spatial layer, the narrow street sustains a model of community resilience grounded in use rather than ownership or formal designation.

The everyday transformations of Koliwada streets thus reflects a deep-rooted spatial intelligence negotiating between stability and change, formal and informal, domestic and public. The spacial fluidity is not disorder but rather a language of lived impermanence.

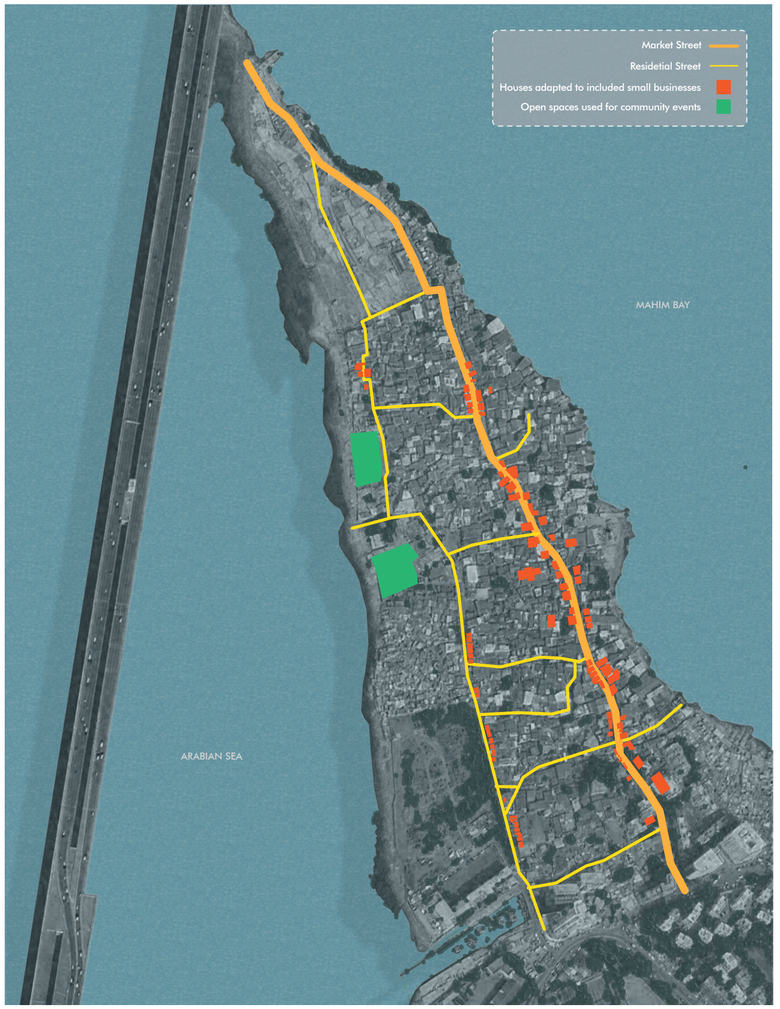


Figure 2.2.11
A map highlighting the inner streets, market streets and houses adapted with a storefront.

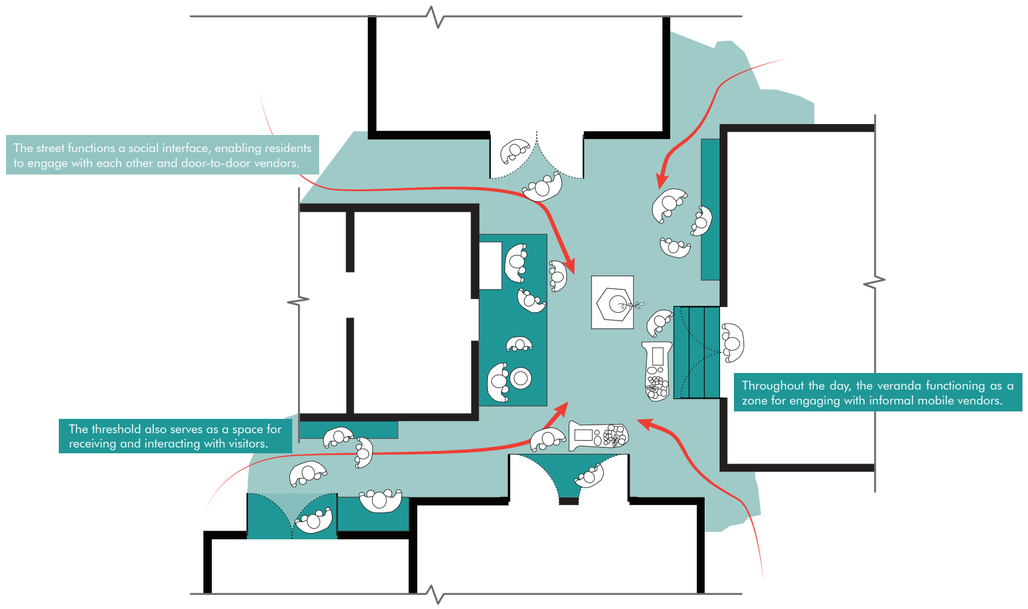


Figure 2.2.12
A schematic plan showing street-level engagement and the multipurpose adaptation of semi-public residential spaces.



Figure 2.2.13
An image of a veranda where a Koli fisher is in midst of reparing his net.

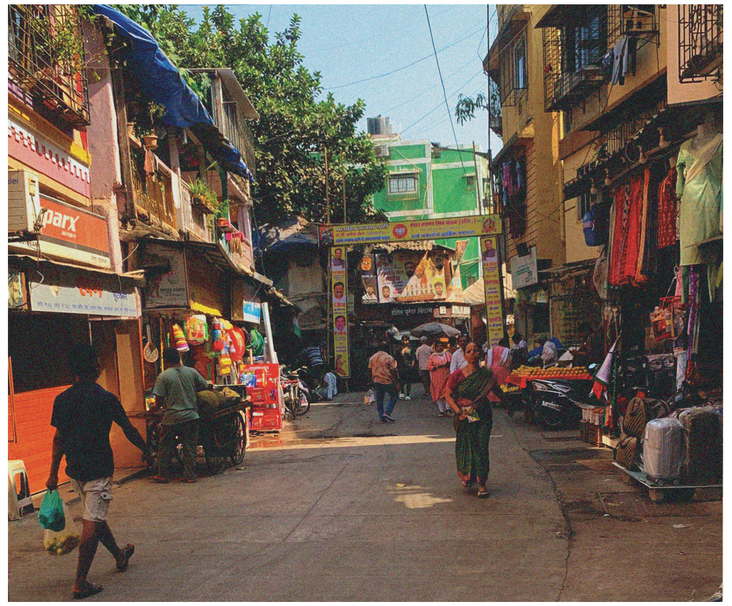


Figure 2.2.14
An image of the market street and housed adapted to storefronts.



Figure 2.2.15
An image of the village streets during the festival of Holi.



Figure 2.2.16
An image of a typical fish market within the Koli neighbourhood.

02.3 . ECONOMIC FRAMEWORK

I. Mumbai Coastal Fishing Netwroks

II. Everyday life within the Koli Fishing Network

III. The Commercial Fishing Network

IV. Disparities between the two fishing networks

MUMBAI'S COASTAL FISHING NETWORKS

Mumbai's fishing economy functions around two networks, the small-scale fishing of Koliwadas within the intertidal zones and the large-scale commercial activity at the city's harbours. The villages of Versova, Juhu, Khar Danda, Chimbai, Worli, Mahim, Trombay, and Colaba are the most active in the small-scale fishing practices. Their fishing practices are artisanal, using small non-motorized or lightly powered boats or smaller single-day trawlers that operate close to the shore (15 to 20 km offshore). These trips are short, lasting only a few hours, and depend on the daily tidal cycles and local ecological knowledge.[44] In contrast, the commercial harbours of Sassoon Dock and the New Ferry Wharf organize mechanized fishing on a much larger scale. These harbours support multi-day trawlers that travel farther into the sea.[45] While both systems share the same coastline, they represent very different approaches to marine livelihood, one embedded within the local settlements, and the other supported by large-scale infrastructure and global markets.

In addition to their difference in equipment and infrastructure, both networks operate within different parts of the coast. The Koli fleet stays close to shore within the intertidal zone and plans launch, landing, and unloading around the tide. The fish must be sold quickly because ice and storage are limited.[46] The commercial fleets extend to the city's offshore waters. The multi-day trawlers are equipped with engines, mechanized hauling, and an onboard cold storage. These trawlers are less dependent on the tide and offer a longer operating window.[47] Further, the docks are supported with auction halls and cold storage rooms that assist moving fish from deck to sale through regulated handling spaces.[48] The smaller boats and single-day trawlers concentrate at Koliwadas along the intertidal zone, while multi-day vessels dominate the commercial docks of Sassoon Dock and New Ferry Wharf.

The state runs a trawl ban for the commercial docks during the monsoon season. From the 10th of June to the 15th of August, mechanized trawling is paused due to rough seas and to protect the spawning of fish.[49] The rough seas of the monsoons also limit small-boat trips. Many Koli households cut back on effort and stick to repairs and maintenance of their equipment and markets. Additionally, a few families lean more on shore-based vending or casual work until fishing conditions improve.[50] When the ban ends, activity climbs quickly. Single-day trawlers at Versova and multi-day vessels at Sassoon Dock and New Ferry Wharf restart runs through the post-monsoon months, with higher landings often seen soon after reopening. Catches then taper toward late summer.[51] The commercial fleets can use maintenance cycles, cold storages, and auction networks to buffer closures and bad weather. The Kolis are tied to tidal windows and without cold storage facilities, face immediate income loss when trips are cancelled or landings miss the day's market.[52]

44, 46, 50, 52
Senapati, Sibananda, and Vijaya Gupta. "Climate Change and Fishing: Analysing Fishermen's Viewpoint." International Journal of Ecological Economics and Statistics 36, no. 4 (2015): n.p.

45, 47, 51
Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

46
Inhabited Sea. n.d. "The Sea and the City." Accessed August 2025. https://www.inhabitedsea.org/the-sea-and-the-city

47, 51
Devi, M. S., Veerendra Veer Singh, Martin Xavier, and Latha Shenoy. "Catch Composition of Trawl Landings along Mumbai Coast, Maharashtra." Fishery Technology 56 (2019): 89–92.

48, 52
Marine Products Export Development Authority (MPEDA). 2020. Major Fishing Harbors – MPEDA. Kochi: MPEDA.

49, 52
Salim, Shyam S., Hena Vijayan, and K. M. Sandhya. "Trade-off Between Monsoon Trawl Ban and the Livelihood of Trawl Labourers in Maharashtra." Indian Journal of Fisheries 57, no. 2 (2010): 67–71.

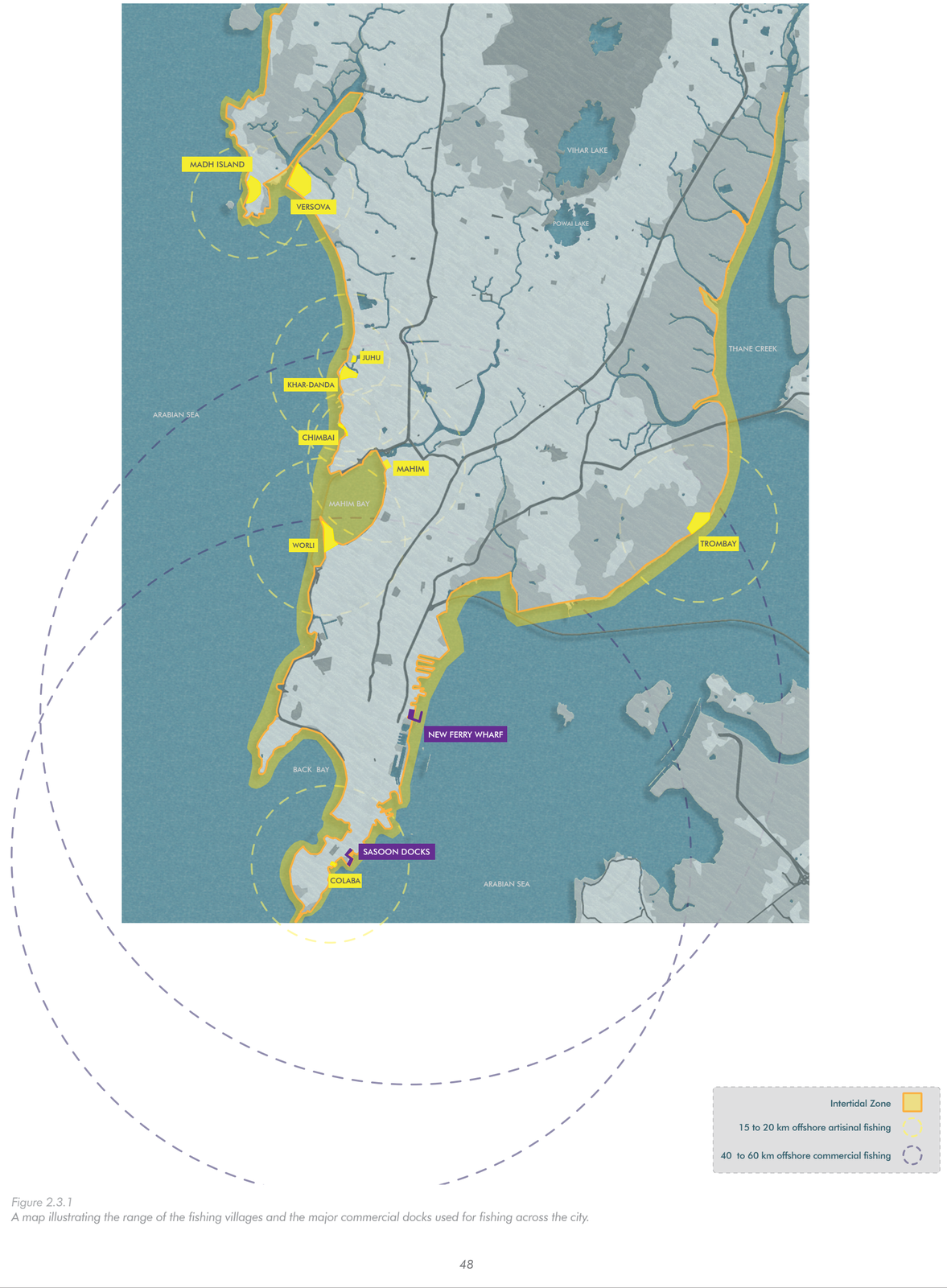


Figure 2.3.1
A map illustrating the range of the fishing villages and the major commercial docks used for fishing across the city.

EVERYDAY LIFE WITHIN THE KOLI FISHING NETWORK

Everyday fishing in the Koliwadas is time-bound, shaped by the tides. Work commences before dawn, when families prepare nets, check boats, and get ready to leave. The timing of departure depends on the tide. If the water is high enough, boats can push out into the sea; if not, they must wait. The moon also matters, since it affects the strength of the tide, and the season decides whether the sea is calm or rough. In this way, nature sets the schedule for when and how fishing can happen.[53]

Once at sea, trips usually last three to seven hours. Most boats are small and stay close to the coast within the intertidal zone, using simple gear such as gillnets, hooks and lines, or small trawl nets. Crews are often made up of younger men, while older men stay behind to repair nets or engines. The goal is to return by late morning, so the catch can be sold fresh the same day. Unlike large trawlers that stay away for days, Koli boats cannot store fish for long and rely on immediate sales.[54]

Back on shore, the work shifts from men to women and elders. Women take charge of cleaning, sorting, and preparing the fish for market. Some fish is sold directly in the Koliwada, some goes to nearby municipal markets, and some is carried door-to-door. The process is fast because, without ice or cold storage, fish loses value quickly. Women play a central role in marketing and selling, while men dominate the catching.[55]

Afternoons and evenings are quieter but still part of the fishing cycle. Women close down the markets for cleaning and maintenance. Men repair nets, maintain boats, and prepare for the next tide. Children often help with lighter tasks, keeping the cycle going across generations. Every stage, from launch to market, is closely timed, and success depends as much on organization and family labour as on the fish in the water.

53, 55
Senapati, Sibananda, and Vijaya Gupta. "Climate Change and Fishing: Analysing Fishermen's Viewpoint." International Journal of Ecological Economics and Statistics 36, no. 4 (2015): n.p.

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Inhabited Sea. n.d. "The Sea and the City." Accessed August 2025. https://www.inhabitedsea.org/the-sea-and-the-city

54
Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

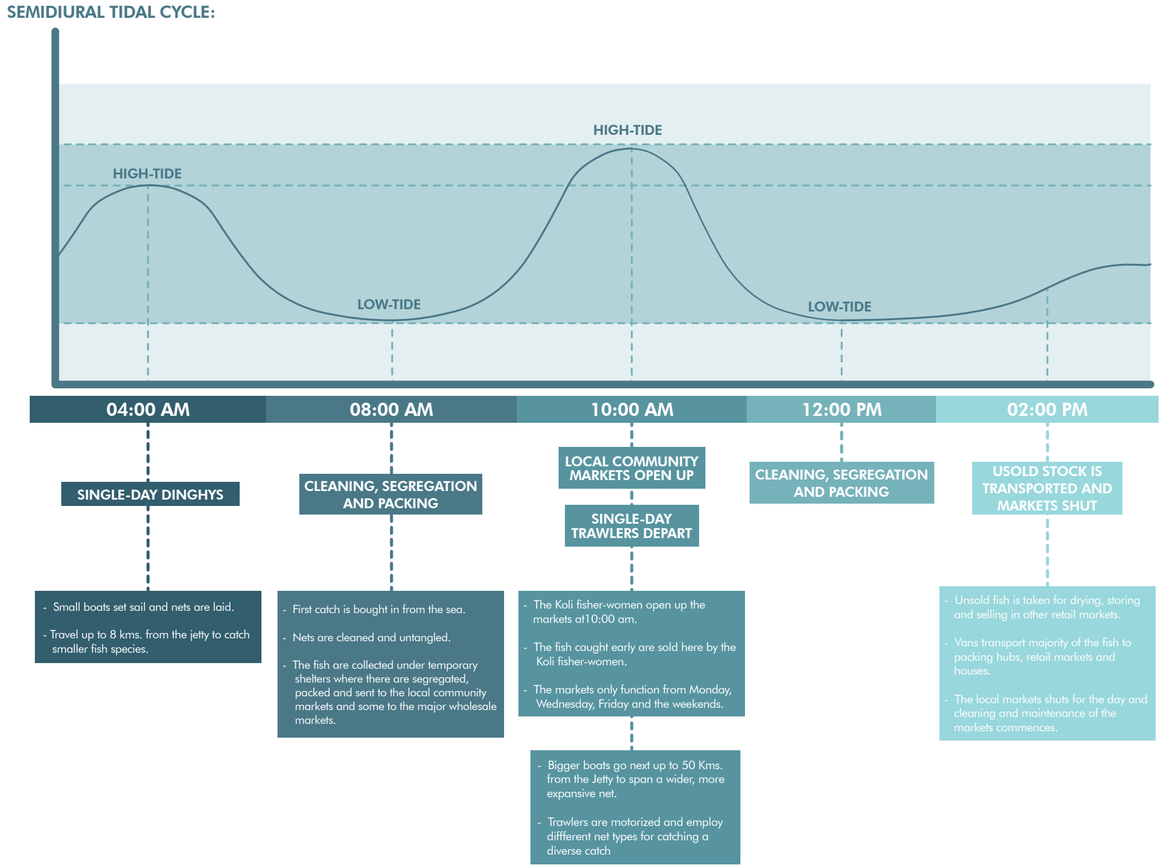


Figure 2.3.2
A diagram illustrating how the tidal cycle influences the fishing schedule of the Koli fisher.

THE COMMERCIAL FISHING NETWORK

Commercial fishing in Mumbai runs on a very different schedule compared to the Koliwadas. Sassoon Dock and the New Ferry Wharf are the principal harbours from which the mechanized fleets operate. These harbours receive hundreds of vessels each day during the season. Boats are larger, often 12 to 20 metres long, with strong engines and storage facilities. Some boats leave and return the same day, but many stay out for a week or more, depending on how much fish they catch and how long the onboard ice can keep it fresh.[56]

A typical multi-day trip is highly organized. Crews of six to eight people work in shifts. Nets are cast and hauled several times a day, sometimes around the clock, with short breaks for eating and rest. Fishing grounds extend far offshore, often 60–70 metres deep (40 to 70 km offshore), well beyond the reach of the Koli fleet. By using GPS, sonar, and Potential Fishing Zone (PFZ) advisories, these fleets reduce the time spent searching and save fuel. PFZ records for Mumbai show that in some years the best fishing spots are nearly 100 kilometres away, while in other years they may be as close as 60 kilometres to the shore.[57] When boats return, harbours provide the infrastructure to move fish quickly into the market chain. Catch is unloaded directly into auction halls, where buyers from restaurants, wholesale markets, and exporters bid in regulated sessions. From there, fish is stored in ice rooms or transported in refrigerated trucks. Harbour facilities also enforce hygiene standards, such as covered platforms, washable floors, drainage, and strict control of temperature. These features extend the life of the fish and allow it to move far beyond the city.[58]

However, the commercial system has its downsides. Catch records show that trawlers often land large amounts of juvenile fish bycatch, which are discarded at sea or sold cheaply as low-value fish meal.[59] This raises concerns about overfishing and the long-term sustainability of stocks. Compared to artisanal fishing, commercial fishing is less tied to the tidal cycle and more dependent on technology and infrastructure. It produces higher volumes but also places greater pressure on marine resources.

56
Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

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Kamei, Gaihiamngam, Jasmin F. Felix, Latha Shenoy, and S. P. Shukla. "Trends of Potential Fishing Zones (PFZs) along the Mumbai Coast, Maharashtra." Indian Journal of Fisheries 61, no. 2 (2014): 140–142.

58
Marine Products Export Development Authority (MPEDA). 2020. Major Fishing Harbors – MPEDA. Kochi: MPEDA.

59
Devi, M. S., Veerendra Veer Singh, Martin Xavier, and Latha Shenoy. "Catch Composition of Trawl Landings along Mumbai Coast, Maharashtra." Fishery Technology 56 (2019): 89–92.

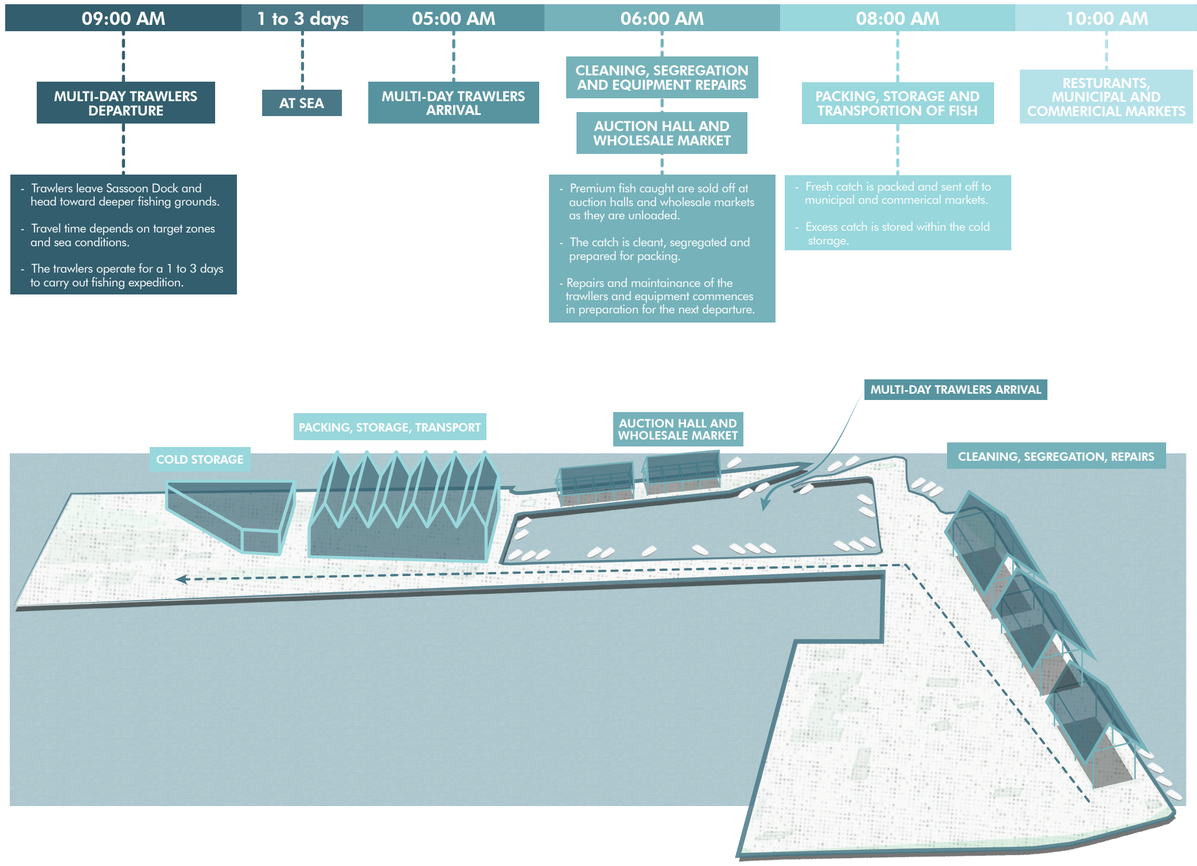


Figure 2.3.3
A diagram illustrating the commercial fishing cycle at Sasoon Docks.

DISPARITIES BETWEEN THE TWO FISHING NETWORKS

When the two systems of village-based fishing and commercial trawling are compared side by side, the inequalities become clear. Koliwadas operate with limited storage, dependence on tides, and small nearshore ranges. They must sell fish quickly or risk spoilage. By contrast, commercial harbours have auction halls, ice facilities, and links to interstate and export markets, which protect them from day-to-day fluctuations.[60]

Seasonal closures affect both, but not equally. The monsoon trawl ban removes 65 days of mechanized fishing from June to mid-August. For large trawler owners, this is a planned downtime used for boat repairs, maintenance, and preparations for the next season. For Koli households, however, the ban combines with rough weather to reduce income sharply, since they lack savings and alternative livelihoods. The result is a heavier burden on the fishing communities.[61]

The gap also shows in production. Mechanized boats average many tonnes of catch annually, while non-motorized or small motorized boats often bring in just a fraction of that amount.[62] Infrastructure, not effort, drives this difference. With cold storage and long-range fleets, commercial operators can reach productive grounds farther away and hold fish for sale later. Koli boats, tied to tide and market timing, cannot compete.

From an ecological perspective, the irony is that artisanal fishing, though smaller in volume, is lower in impact and closer to sustainable practice. It is seasonally aligned, uses less destructive gear, and supports community-based livelihoods. However, market and policy structures make it increasingly fragile. Trawlers dominate landings but also contribute heavily to overfishing, habitat damage, and juvenile bycatch.[63]

The comparison highlights challenges in how to rebalance Mumbai's fishing economy so that artisanal practices remain viable in the face of urban expansion and industrial scale.

60
Senapati, Sibananda, and Vijaya Gupta. "Climate Change and Fishing: Analysing Fishermen's Viewpoint." International Journal of Ecological Economics and Statistics 36, no. 4 (2015): n.p.

60
Marine Products Export Development Authority (MPEDA). 2020. Major Fishing Harbors – MPEDA. Kochi: MPEDA.

61
Salim, Shyam S., Hena Vijayan, and K. M. Sandhya. "Trade-off Between Monsoon Trawl Ban and the Livelihood of Trawl Labourers in Maharashtra." Indian Journal of Fisheries 57, no. 2 (2010): 67–71.

62
Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

63
Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

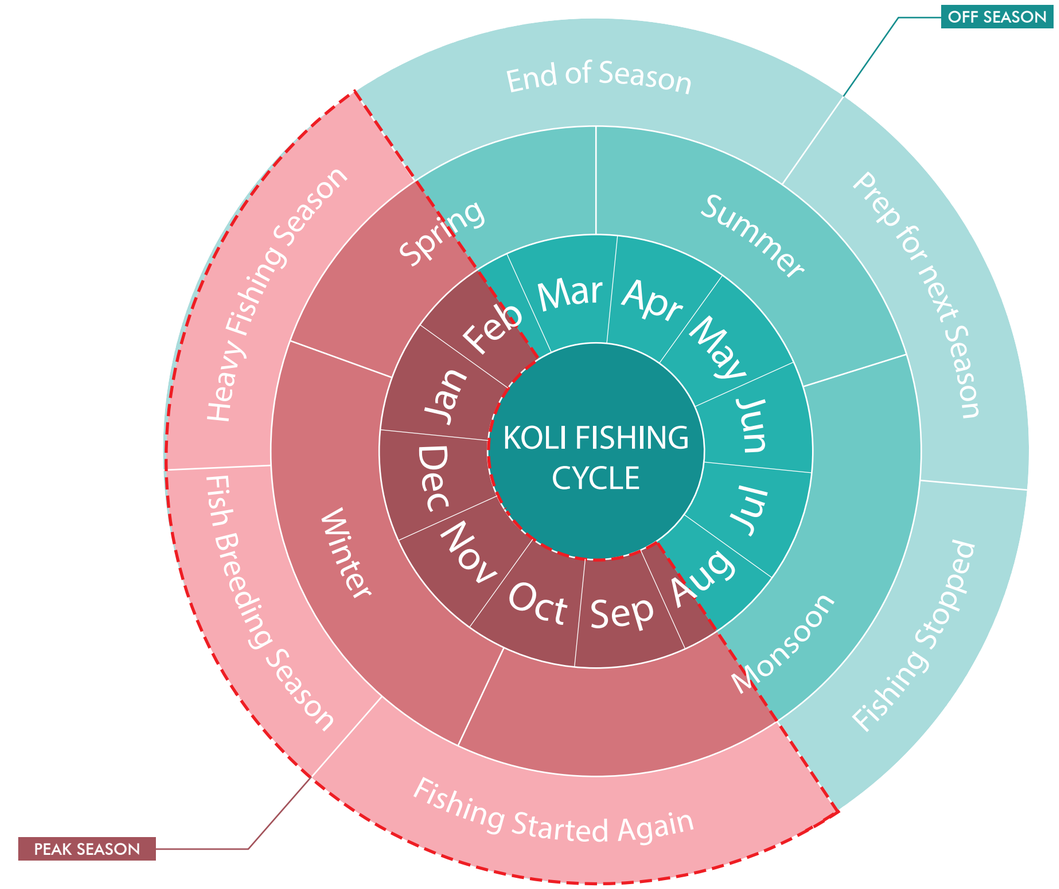


Figure 2.3.4
A diagram illustrating the Koli fishing seasons.

03. CHALLENGES OF THE KOLIS

I. Challenges Across the Three Lenses

II. Intent for Design and Intervention

III. Programmatic Framework

CHALLENGES ACROSS THE THREE LENSES

The pressures faced by the Koli community are layered and interconnected, shaped by the transformation of Mumbai's coast, the pressures of redevelopment, and the uneven competition of fishing economies. These pressures, understood through the ecological, spatial, and economic dimensions of everyday life, each of which reveals distinct challenges that weaken the resilience of the Koliwadas.

The ecological challenges arise from the rapid depletion of nearshore environments that once sustained artisanal fishing. Reclamation for infrastructure, most notably the Coastal Road, has disrupted tidal flows and fragmented mangrove belts, directly reducing fish breeding grounds.[64] The result is a decline in nearshore fish populations, forcing Koli fishers to travel further into deeper waters at higher costs and risk. Environmental disruptions here also heighten risks of flooding in low-lying coastal settlements, exposing ecological loss as a direct threat to both livelihood and habitation.[65]

Spatial and cultural challenges stem from shrinking access to the shoreline and the erosion of multifunctional village spaces. Redevelopment projects, especially those implemented under the Slum Rehabilitation Authority, have reclassified Koliwadas as informal settlements, disregarding their historical legitimacy.[66] This reclassification has enabled high-rise construction and speculative development that displaces communal grounds once used for net repairs, fish drying, and cultural rituals or in some cases, the village itself is displaced. The introduction of rigid housing typologies undermines the adaptability of village streets and open areas, thereby erasing practices that rely on shared and flexible spatial arrangements.[67] As a result, cultural visibility within the city is steadily reduced, and the link between community life and the sea is weakened.

The widening divide between small-scale artisanal fishing and large mechanized fleets defines the economic challenges. Koli fishers remain dependent on tidal cycles, limited gear, and immediate sale of catch, while commercial trawlers operating from Sassoon Dock and New Ferry Wharf benefit from long-distance operations, cold storage, and auction infrastructure.[68] With declining nearshore resources, the smaller boats are left with narrower profit margins and more unstable incomes. Seasonal bans, though intended to allow fish stocks to recover, impose further interruptions without providing alternatives or support.[69] For younger generations, these uncertainties make fishing appear unsustainable, leading many to seek employment outside the traditional occupation and raising questions about the long-term continuity of the community practices.[70]

64
Movik, Synne, Hans Nicolai Adam, and A. Alankar. "Claiming Space: Contested Coastal Commons in Mumbai." Geoforum 144 (2023): 103805.

65
Senapati, Sudhanshu, and V. Gupta. "Coastal Regulation Zone and Coastal Livelihoods: A Case of Mumbai Fishing Communities." Environment and Urbanization 29, no. 2 (2017): 471–490.

66
Parikh, Aparna. "Making Bombay Island: Land Reclamation and Geographical Conceptions of Bombay, 1661–1728." South Asian History and Culture 11, no. 3 (2020): 289–307.

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Shetty, Prasad, Rupali Gupte, Ritesh Patil, Aparna Parikh, Neha Sabnis, and Benita Menezes. Housing Typologies in Mumbai. Mumbai: CRIT (Collective Research Initiatives Trust), May 2007.

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Inhabited Sea. n.d. "The Sea and the City." Accessed August 2025. https://www.inhabitedsea.org/the-sea-and-the-city

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Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

70
Senapati, Sudhanshu, and V. Gupta. "Fishing Livelihoods: WPC Insights on Coastal Communities in India." WorldFish Center, 2015

Together, the overlapping pressures of ecological loss, spatial displacement, and commercial precarity threaten not only the livelihoods of the Kolis but also the endurance of their cultural and ecological presence along Mumbai's coast.



Figure 3.1
A diagram addressing the threats against the Koli community.

INTENT FOR DESIGN AND INTERVENTIONS

The challenges confronting the Koli community can be addressed through a framework that links ecological repair, economic resilience, and cultural continuity. The intent of this thesis is therefore not only to mitigate immediate pressures but also to create conditions where fishing villages can endure as active parts of Mumbai's coastal future. The design strategy builds from the three lenses of ecological restoration, economic support, and cultural integration woven into a broader vision for the city's waterfront.

Restoring ecological systems is the first step toward rebuilding community resilience. The rejuvenation and preservation of the mangrove belts, tidal creeks, and wetlands would help to strengthen coastal buffers against flooding, sustain fish breeding grounds, and preserve the tidal cycles that Koli livelihoods depend on.[71] Interventions would focus on keeping the shoreline porous, maintaining tidal flows, and creating protected zones where ecological processes can continue alongside human activity.

In response to the vulnerabilities of the Koli fishing economy, a Fishing Hub integrated within Koliwadas is envisioned as a cooperative space that combines auction yards, cold storage, boat and net repair facilities, and training opportunities for younger fishers. The infrastructure would reduce dependence on distant docks like Sassoon and Ferry Wharf, allowing fishers to store and sell their catch at fairer prices, strengthening the continuity of small-scale fishing. By expanding local infrastructure, the hub directly addresses the imbalance between artisanal practices and industrial fleets.

Cultural continuity is supported through the integration of public spaces along the shoreline that affirm the Kolis' presence in the city. The piers would sustain traditional practices such as net repairs, fish drying, and seasonal rituals while also opening the waterfront to market squares and as a place of encounter between the community and the wider public. By linking everyday work with cultural expression, the project resists the displacement of Koli identity and reinforces its relevance within the city's changing urban landscape.

Together, the interventions form part of a larger ecological landscape and public promenade project that reframes the coast as more than real estate. The coast is approached as a shared edge where ecological restoration, livelihood security, and cultural life reinforce one another.

71
Pagare, N. S., R. Kumar, A. J. Aran Castro, Justine K. Antony, P. Raj Kumar, and Praveen Raj R. "Mapping the Wetlands of Mumbai and Surrounding Area Using Remotely Sensed Sentinel-2b Data." Turkish Online Journal of Qualitative Inquiry (TOJQI) 12, no. 7 (July 2021): 6964–6980

PROGRAMATIC FRAMEWORK

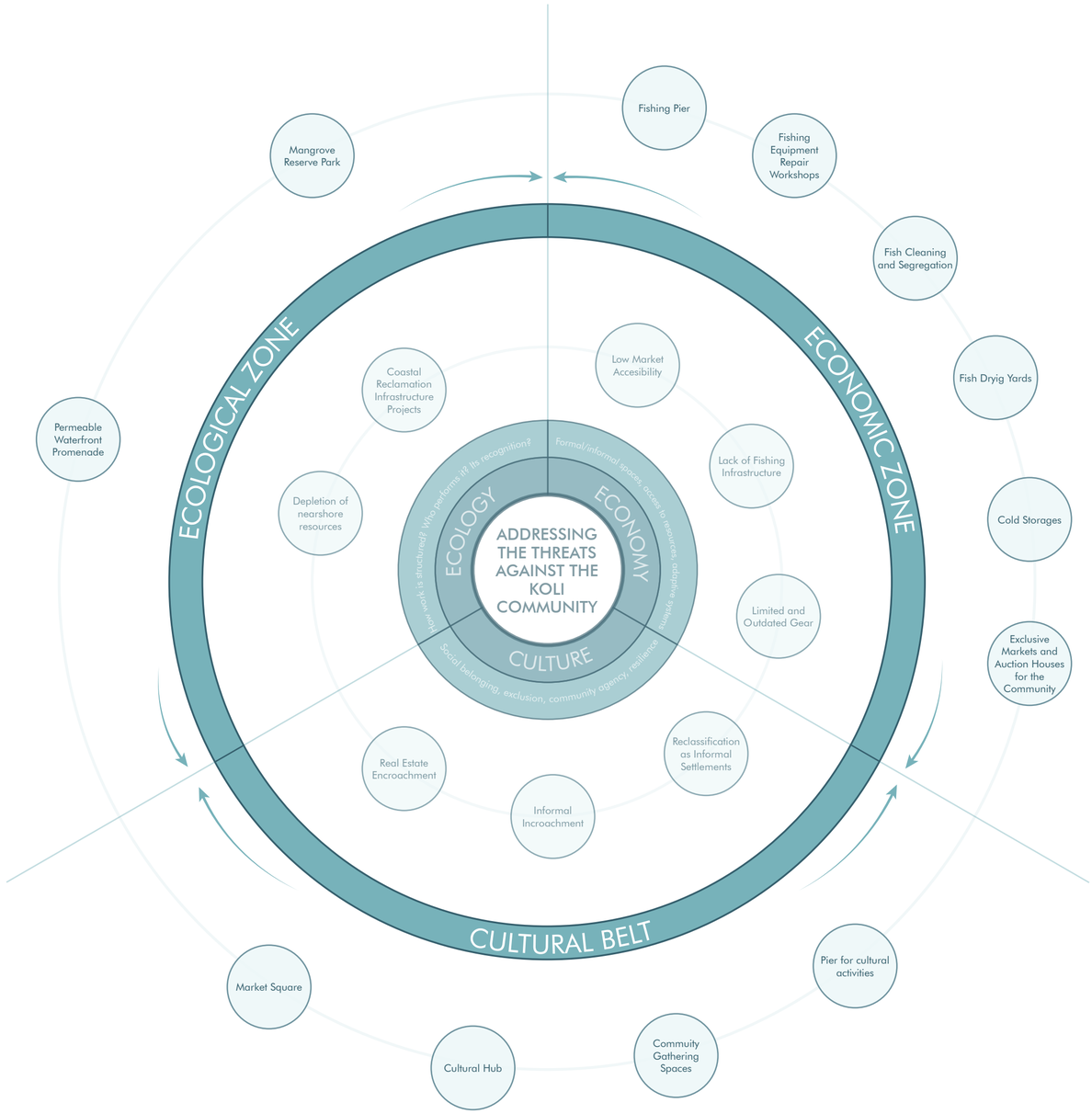


Figure 3.2
A diagram illustrating the programatic framework.

04. SITE

I. Approach to Site

II. Zoning Regulations on Site

III. Current Land Use for Site

APPROACH TO SITE

The fishing villages on Mumbai's western coast share a common dependence on the sea, but their access to infrastructure is uneven. From Madh in the north to Worli in the south, each settlement is connected to the coastline yet shaped by different ecological conditions and urban surroundings. Mangroves, beaches, and promenades physically separate the villages, while social and economic differences create further divisions within each neighbourhood of the villages. Some villages have adapted to mechanized fishing and urban growth, while others continue to function with minimal support.

Madh and Versova, the northernmost villages, represent the stronger nodes of this network. They are supported by improved infrastructure, including cold storage facilities and the capacity to accommodate larger, mechanized trawlers. Their stronger links to wholesale markets allow them to withstand fluctuations in fish stocks and urban competition more effectively than other villages. By contrast, settlements such as Chimbai and Mahim are more vulnerable. Their smaller size, limited equipment, and lack of storage infrastructure leave them dependent on the immediate sale of catch and exposed to urban pressures that limit shoreline access.[72] Juhu lies between these extremes, its fishing activity gradually reduced by recreational land use pressures along the beach.

Khar-Danda occupies a strategic position within this coastal chain, both geographically and strategically. Situated between Versova to the north and Chimbai to the south, the village is central to the network of fishing settlements but has been constrained by a lack of infrastructure itself. It lacks adequate auction yards, cold storage facilities, and organized repair facilities, forcing fishers to sell their catch quickly and at lower margins. However, this very absence underlines its potential. If provided with the proper facilities, Khar-Danda could become a hub for the surrounding villages, redistributing resources and stabilizing smaller fishing economies that currently struggle.

The beaches and promenades, which run alongside the coast and are adjacent to the villages, create both pressures and opportunities. On the one hand, they limit the village's expansion and contribute to the shrinking of fishing grounds. On the other hand, they provide points of contact with the broader city, enabling the possibility of cultural visibility and the integration of fishing practices within the public realm. Khar-Danda, as a site, would enable the interventions to strengthen livelihoods while redefining the connection between fishing villages and the urban waterfront. Its selection is based not only on its existing challenges but also on its capacity to anchor the broader fishing network of coastal settlements.

72
Kharatmol, B. R., L. Shenoy, V. V. Singh, A. T. Landge, and A. S. Mohite. "Fishing Characteristics of Trawling off Mumbai Coast of Maharashtra, India." Journal of Entomology and Zoology Studies 6, no. 2 (2018): 2777–2783.

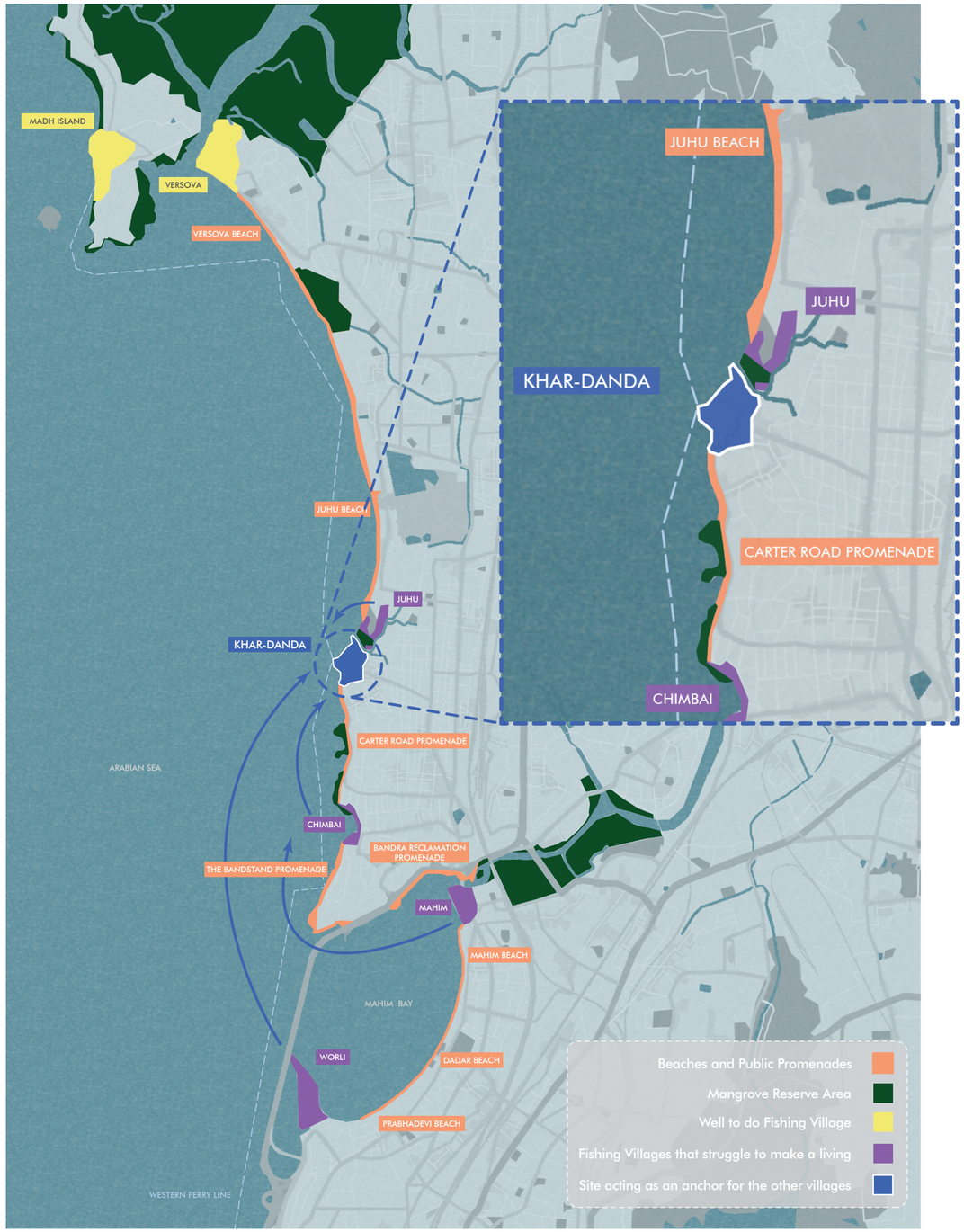


Figure 4.1
A map illustrating the identified site for the interventions.

ZONING REGULATIONS ON SITE

The site of Khar-Danda illustrates how ecological landscapes, fishing-based livelihoods, and expanding urban development intersect along the coast, influencing how the settlement occupies and adapts its shoreline. The coastline immediately adjacent to the village is classified as CRZ-I, which designates it as an ecologically sensitive stretch of tidal flats and mangroves. Activities here are strictly limited to traditional fishing and conservation, prohibiting reclamation or new permanent construction.[73] This designation protects the ecological base of the village but confines its fishing practices to a narrow, regulated strip, restricting opportunities for expanding or upgrading facilities.

Inland from the shoreline, CRZ-II and CRZ-III form the dominant categories. CRZ-II applies to the developed edge where regulated urban development is permitted. CRZ-III extends into the fabric of the settlement, encompassing both residential housing and fishing-related industries. Within this zone, activities such as net drying, storage, and repair yards are permissible, alongside the recognition of traditional Koli housing as a legitimate land use.

In addition to these broad categories, the development plan also identifies explicit zones for fishing activities and infrastructure. These include designated fish and net drying yards, storage and repair areas, and spaces for related industries. The zones formalize the role of Khar-Danda as a working fishing village and preserve the continuity of economic activity within the planning framework. Similarly, Koli housing clusters are demarcated to maintain the settlement's cultural identity and ensure that residential uses remain tied to fishing activity. However, both zones remain bounded by ecological restrictions and informal and urban encroachment, leaving little room for adaptation to contemporary challenges.

Other restrictions appear in the form of No Development Zones (NDZ), particularly along sensitive creeks and ecological buffers. These prohibit new construction entirely, reinforcing the importance of maintaining tidal flows and protecting wetlands. While ecologically valuable, they further compress the spatial flexibility of the village, forcing adaptation to occur within an already crowded landscape.

The zoning plan thus presents a mosaic of ecological, fishing, residential, and restricted zones. On paper, this framework secures both environmental protection and cultural continuity. In practice, it constrains Khar-Danda's ability to expand its infrastructure or adapt to the pressures of a modern fishing economy. The village is formally recognized as a fishing settlement but remains constrained within a regulatory structure that limits its potential for growth and evolution.

73
Government of India, Ministry of Environment, Forest and Climate Change. Coastal Regulation Zone Notification, 2019. Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i), G.S.R. 37(E). New Delhi, January 18, 2019. Accessed June 26, 2025. https://www.mczma.gov.in/content/crz-notification-2019.

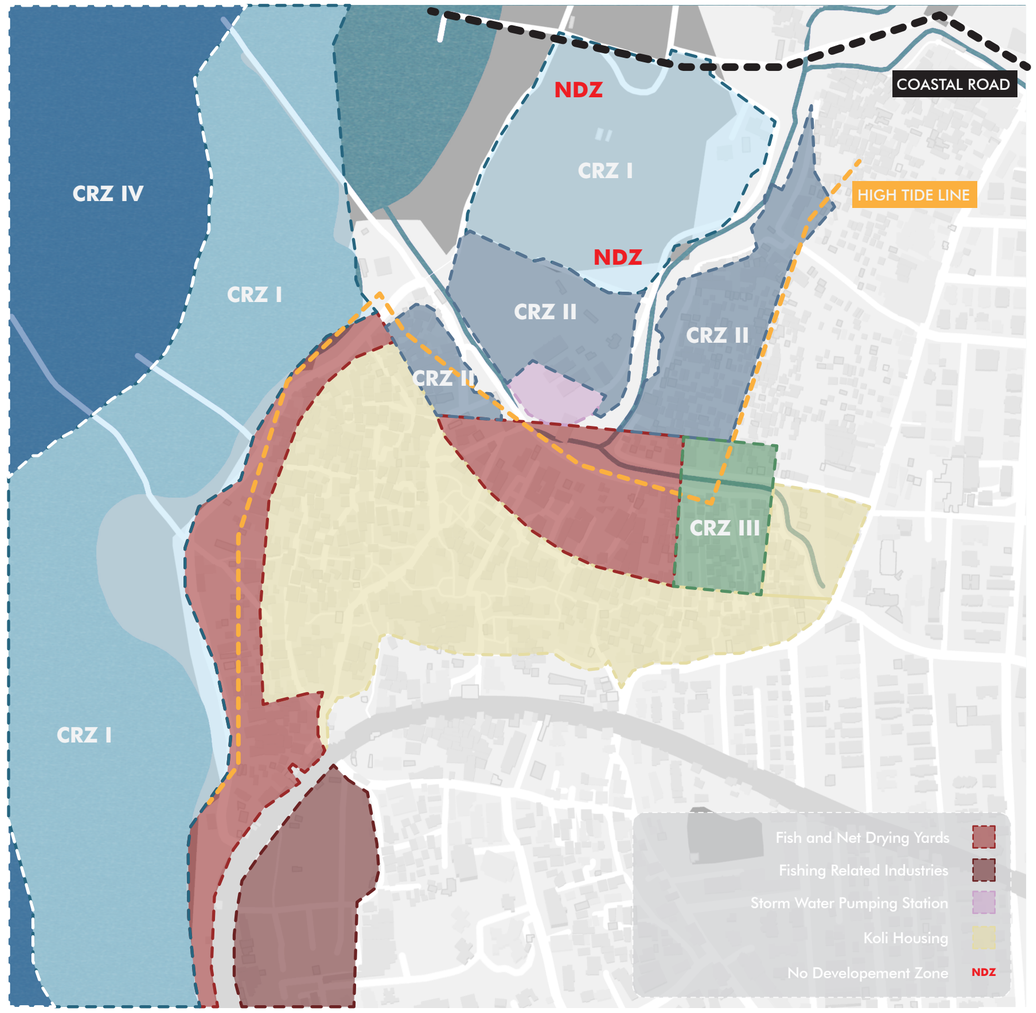


Figure 4.2
A map illustrating the zoing on site within the developement plan of the city.

LAND USE

The current land use at Khar-Danda shows how the community adapts to zoning through everyday practice. Along the shoreline, temporary sheds for net repairs and boat maintenance, together with jetties and seasonal drying yards, support the fishing economy despite their impermanence. Within the settlement, open grounds accommodate fishing activities, the community market operates as an economic hub, and temples serve as cultural anchors. City infrastructure, such as pumping stations, intersects with these spaces, revealing overlaps between formal systems and informal practices.

At the margins, mangrove reserves restrict expansion, while the proposed Coastal Road introduces further uncertainty. Informal encroachments occupy the remaining gaps, reflecting the limited availability of formal housing and infrastructure. This pattern reveals how land use at Khar-Danda is shaped as much by necessity as by regulation. The reliance on temporary sheds, open grounds, and informal extensions shows how the settlement organizes itself around the practical demands of daily work rather than fixed plans. The capacity to adapt to coastal conditions, rather than follow fixed plans, remains central to how the village takes shape and functions today.

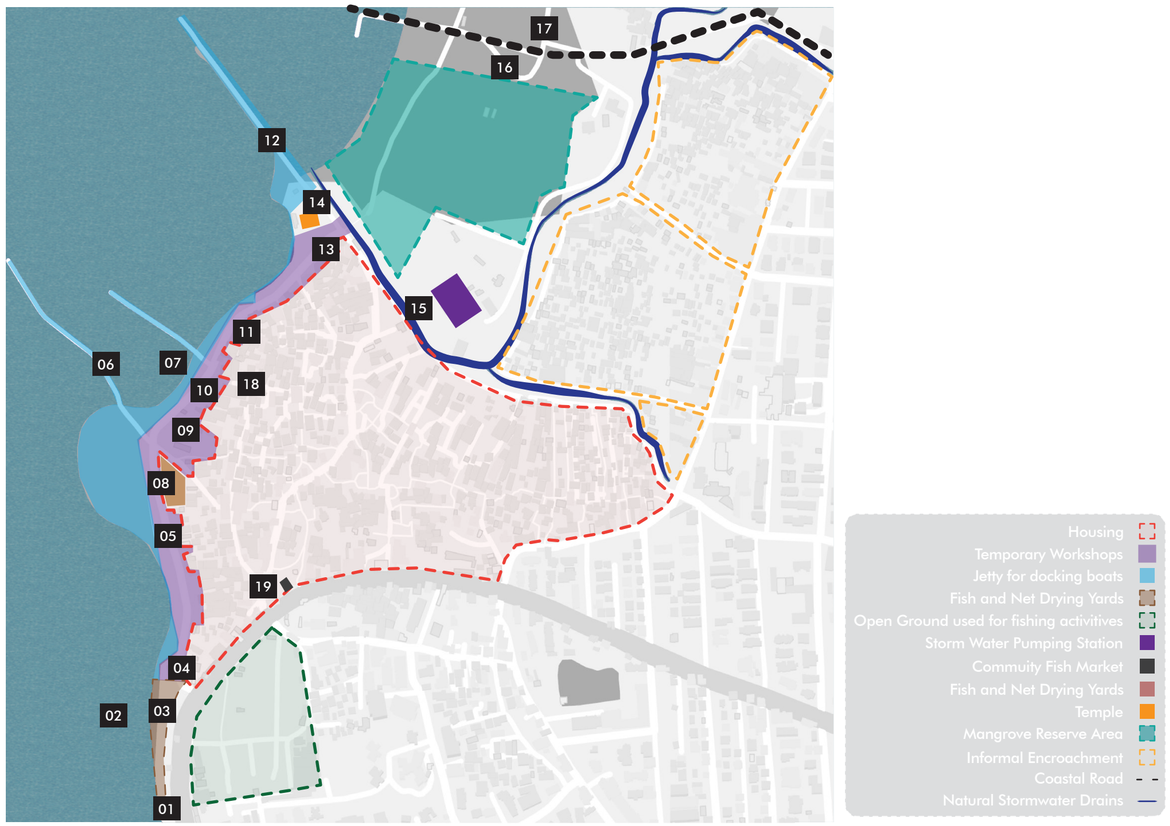


Figure 4.3
A map illustrating the current land use on site.




THE TIMES OF INDIA, MUMBAI
MONDAY, APRIL 14, 2025

LOCALS OPPOSE FOOD PLAZA ON CARTER ROAD PROMENADE

Bandra residents gathered at Carter Road promenade on Sunday to protest BMC's plan to set up a Koliwada Seafood Plaza on a section of the recreation area. Claiming that the move signals the beginning of commercialisation of the promenade, they urged the authorities to reconsider the proposal. Environmental concerns were also raised, with some pointing out that food stalls and increased footfall at the promenade could lead to more litter and put a strain on maintenance

Figure 4.4
The existing Carter Road Promenade is used as a space to accomodate temporary structures that fuctions as a food plaza for the Koli community.



Figure 4.5
The intertidal zone during a low tide off the coast of Khar-Danda Village durig a low tide.





Figure 4.6
Open spaces along the coast are set up with temporary structures that aid in activities relating to fishing.



Figure 4.7
The village entrance along with a fisherman using a handcart to trasport the fish.



Figure 4.8
The village waterfront with temoprary structures towards the coast.





Figure 4.9
Boats docked along the Jetty along with handcarts used for transporting fish to the local market.



Figure 4.10
Boats docked along the Jetty.



Figure 4.11
An open ground used for commuity and cultural events.



Figure 4.12
Open spaces occupied with temporary shelters for net repairs and children on the right using the same space to play.





Figure 4.13
A Koli fisherman repairing his net within one of the temporary structures.



Figure 4.14
Temporary shelters for net repairs.



Figure 4.15
The north most jetty used for cultural activites and accomodates a temple and community gathering spaces.





Figure 4.16
A temple and community gathering space.



Figure 4.17
Stormwater Treatment Plant



Figure 4.18
Ongoing construction for the coastal road.





Figure 4.19
Juhu beach towards the north of the village, occationally used for fishing activities.





Figure 4.20
The market streets of the village.

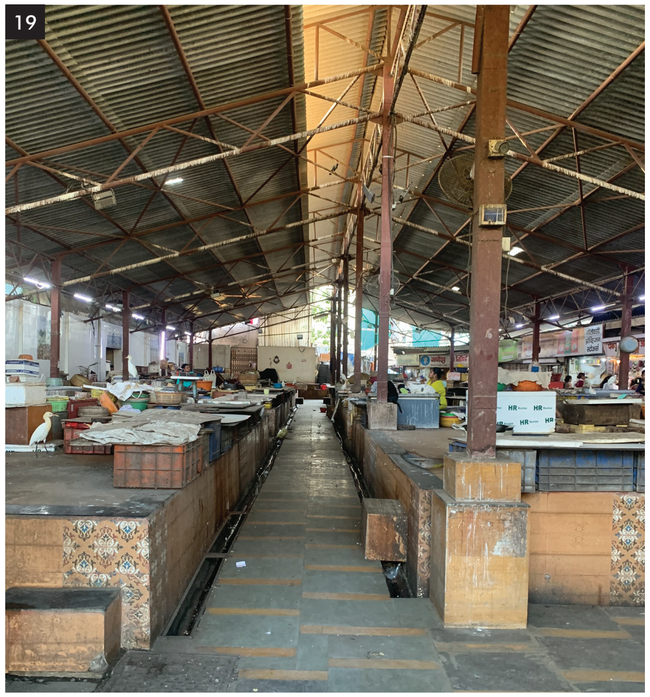


Figure 4.21
Local fish market managed by the community.

05. INTERVENTIONS

MASTER PLAN

The proposed master plan is organized into two complementary zones: the ecological zone and the economic zone. These are joined by a central public belt that acts as both a connector and an interface between the community and the sea. This three-way division responds directly to the spatial pressures identified on site, creating a framework that links ecological restoration, livelihood support, and civic engagement.

The ecological zone occupies the northern edge of the site and extends southwards, fragmented along the promenade into a sequence of mangrove parks. These interventions integrate restored ecological habitats with public access, creating spaces where citizens can connect with tidal landscapes that were previously inaccessible. As these areas become part of the city's shared public realm, they gain visibility and value, making future reclamation or land extension more difficult for authorities to pursue without resistance. Additionally, the mangrove parks create both a buffer against flooding and a renewed fishing ground for the community within the intertidal zone.

The central public belt serves as the organizing spine of the plan. It is divided into zones that gradually blend towards the waterfront, creating spaces that alternate between community use and civic encounter. An informal market street provides an organized yet flexible space for vendors, easing pressure from the village's narrow lanes. A food plaza introduces shaded verandah-like structures that accommodate both daily gathering and evening food stalls. Public seating areas line the promenade, creating an accessible waterfront.

The northern pier integrates cultural practices with a temple and gathering spaces, while the market plaza and cultural grounds provide venues for festivals and events. Collectively, these spaces establish the belt as a place of interaction between the Koli community and the wider public.

The economic zone anchors the southern and central parts of the site. At the center, dedicated piers accommodate large trawlers with direct facilities for loading and transport, functioning independently from the rest of the village. To the south, smaller piers are reserved exclusively for artisanal boats that operate within the intertidal zone. These southern piers connect inland to a fishing hub equipped with storage facilities, auction halls, drying yards, and transportation facilities. This arrangement reinforces small-scale fishing practices while ensuring that industrial and artisanal operations remain distinct and better organized.



Figure 5.1
Master Plan

ECOLOGICAL ZONE- MANGROVE PARK

The ecological zone focuses on the restoration and integration of mangrove habitats. Existing reserve areas are extended and made accessible through a network of piers, platforms, and walking paths. This system allows residents and visitors to experience the mangroves as public space, rather than as restricted terrain, while reinforcing their role as ecological buffers. For the fishing community, the restored intertidal zone functions as a nursery ground, directly supporting artisanal practices. By amalgamating the ecological rehabilitation with civic accessibility, the mangrove park reconnects the city to its coastal environment while ensuring that fishing grounds remain productive.



KEY PLAN

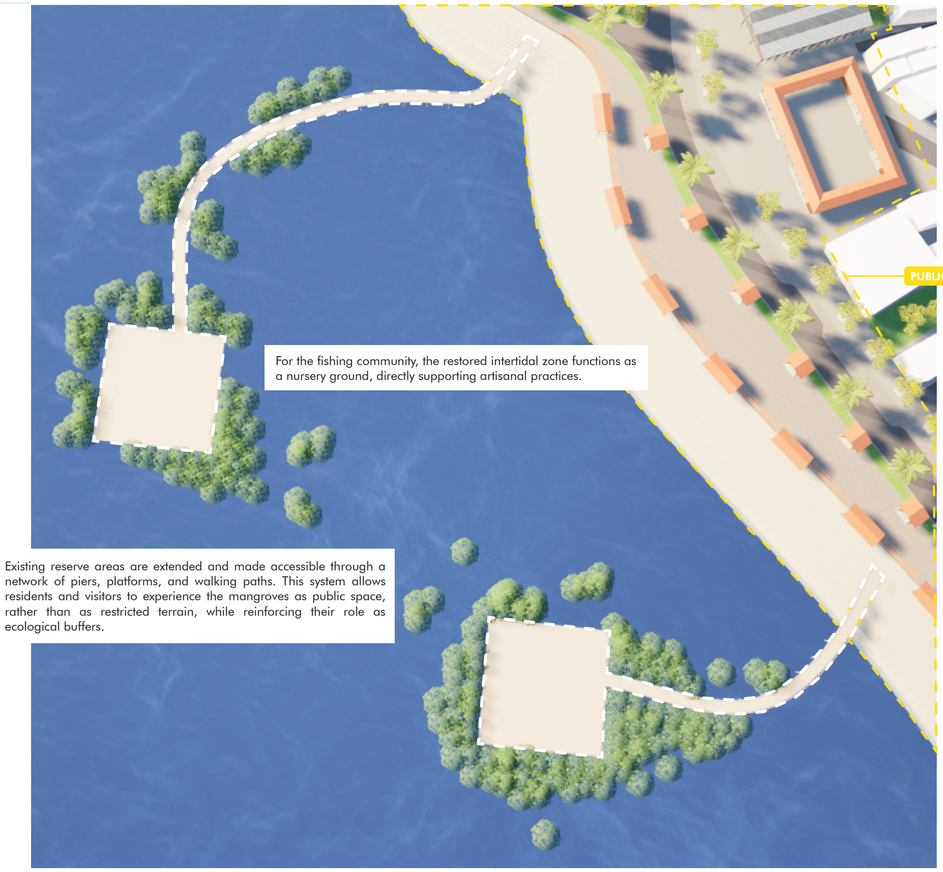


Figure 5.2
Schematic Plan for a part of the Ecological Zone.



Figure 5.3
View from the Mangrove Park.

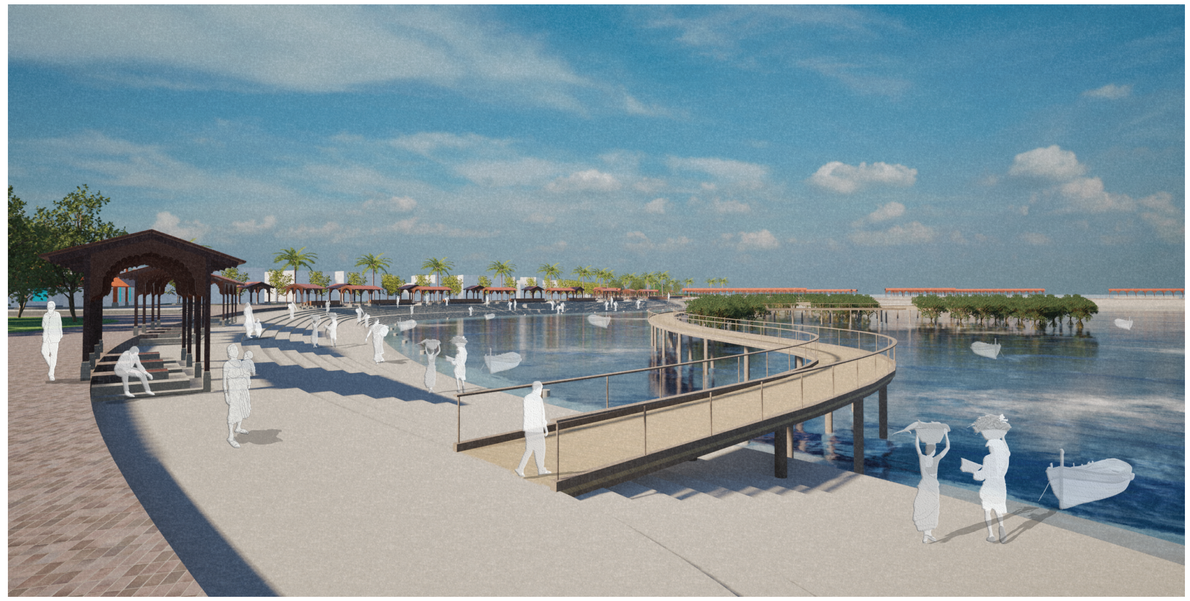


Figure 5.4
View of the Waterfront.

PUBLIC BELT- PIER FOR CULTURAL ACTIVITIES AND COMMUNITY GATHERING SPACES

At the northern edge, an existing pier historically housed a temple and community gathering spaces. This pier is reimagined as a cultural anchor, integrating places for ritual practice with broader community events. Proximity to earlier cultural grounds and reserve zones positions it within the cultural landscape of the Kolis. The pier thus becomes more than an infrastructural element; it functions as a civic and cultural space that maintains the symbolic connection between the community and the sea while providing a platform for festivals and gatherings.



KEY PLAN

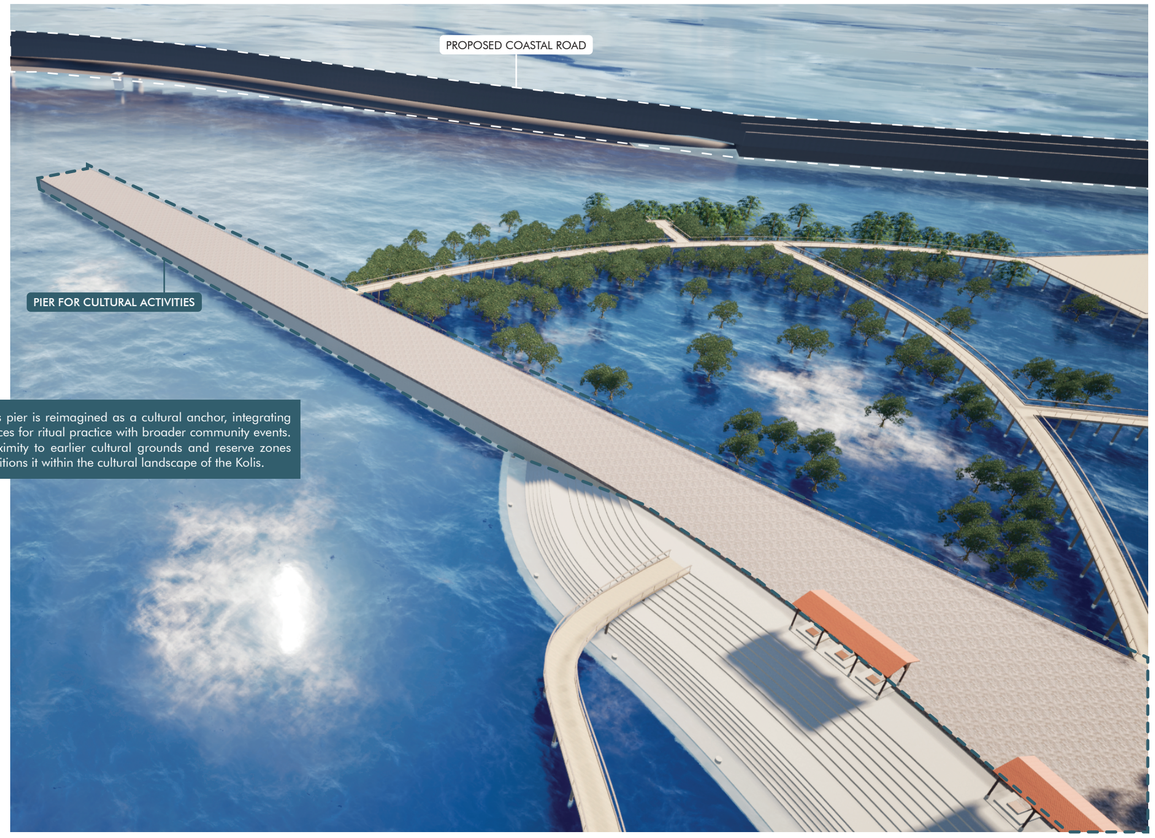


Figure 5.5
View of the pier for cultural activities.



Figure 5.6
View showing the existing temple and community gather spaces.



Figure 5.7
View showcasing the Community Gathering Spaces.

PUBLIC BELT- INFORNAL MARKET STREET

The landward side of the promenade is reorganized to accommodate an informal market street. This intervention relocates vendors from congested village lanes, freeing up internal spaces that were previously occupied by temporary stalls. The street is structured with small pedestal platforms, each shaded by a centrally planted tree. Vendors arrange themselves informally around these nodes, placing their baskets and goods on the platforms. The trees provide shade and a sense of permanence, while the arrangement maintains the flexible, small-scale character of informal trade. The market street acknowledges the importance of hawking as an economic activity while reducing conflicts with residential and cultural spaces.



KEY PLAN



Figure 5.8
Plan for the Promenade that includes the informal street, the food court and the waterfront.



Figure 5.9
A View of the Informal market street.

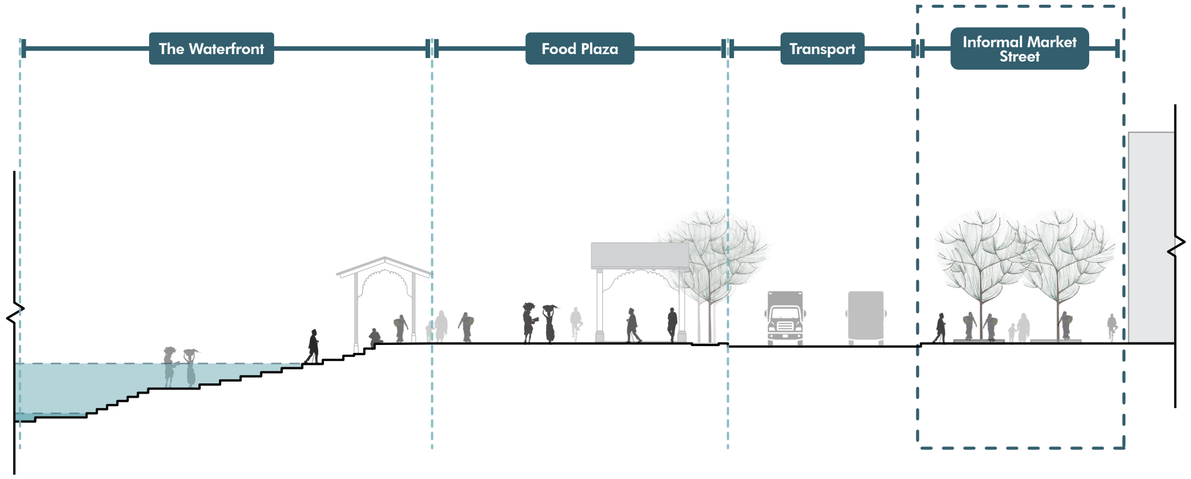


Figure 5.10
A schematic section of the street.

PUBLIC BELT- FOOD PLAZA

Opposite the informal market street, on the seaward side of the promenade, a food plaza is introduced. This consists of covered, verandah-like structures that function as flexible community spaces. During mornings and afternoons, the shaded areas serve as informal gathering and resting spaces. In the evenings, they transform into food stalls, operated by Koli families and vendors. This builds on proposals already suggested for nearby promenades, extending them into the village's public realm. The food plaza functions as both a civic amenity and a source of income, supporting the community by linking everyday cultural practices of hospitality with livelihood opportunities.



KEY PLAN

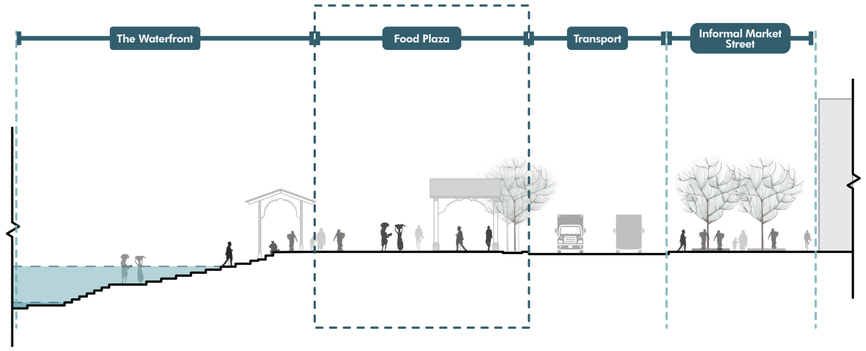




Figure 5.11
Plan for the Promenade that includes the informal street, the food court and the waterfront.



Figure 5.12
A view of how the food plaza is used during the day.

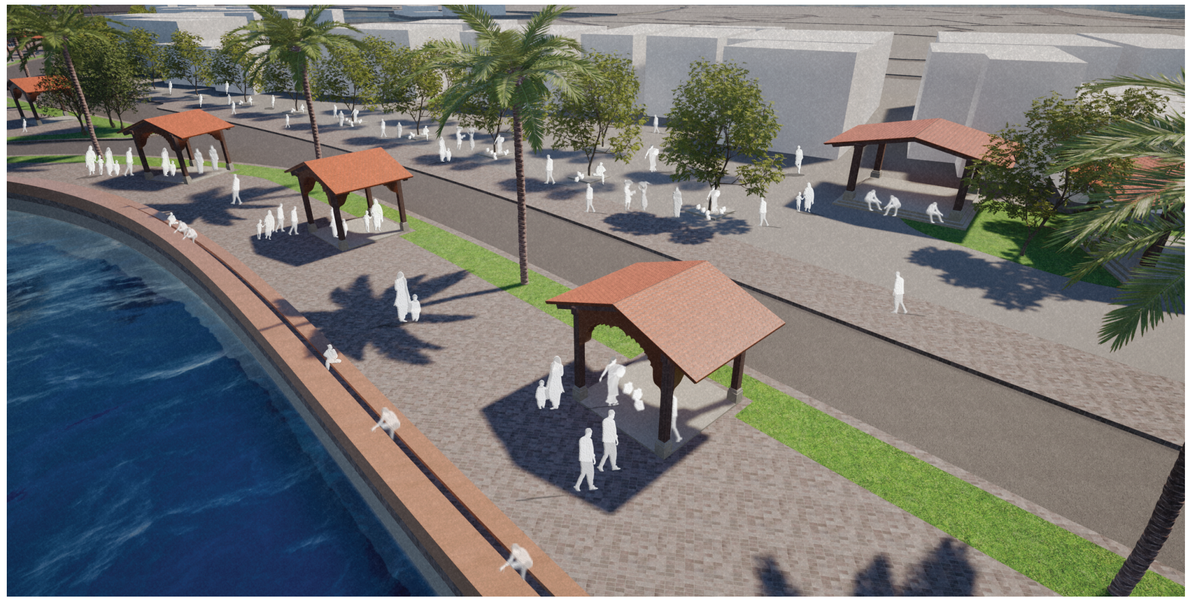


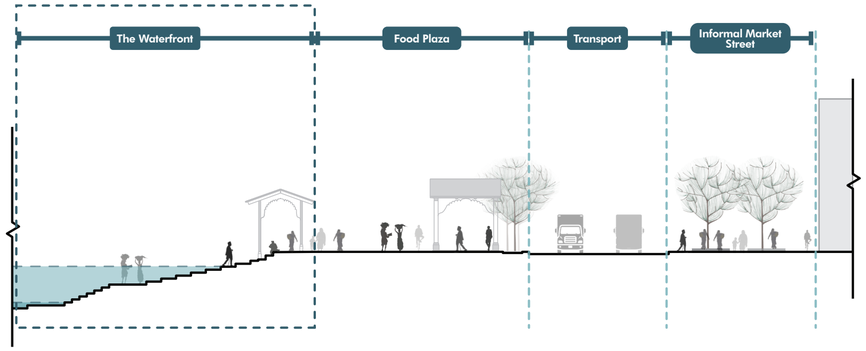
Figure 5.13
A view of how the food plaza is used during the evenings.

PUBLIC BELT- WATERFRONT

The waterfront is reconfigured into stepped edges that extend into the intertidal zone. During low tide, the steps provide access for fishers to practice informal fishing and collect resources from tidal pools. During the day, when boats are at sea, the steps become gathering spaces for residents and visitors, transforming into a civic waterfront. At high tide, the steps are partially submerged, limiting access but reinforcing the dynamic relationship between land and sea. The design responds to tidal variation as a defining condition of the site, shaping the waterfront to serve as both a productive landscape for fishing at low tide and a public space when not in use.



KEY PLAN



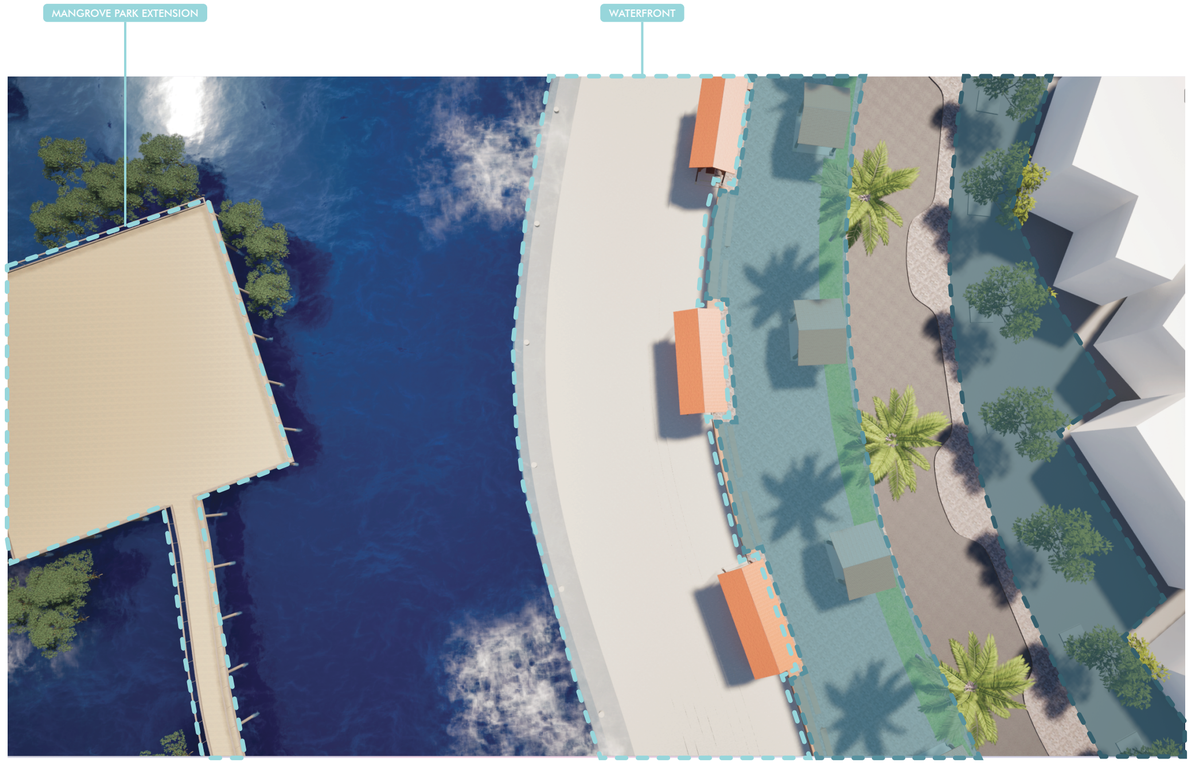


Figure 5.14
Plan for the Promenade that includes the informal street, the food court and the waterfront.



Figure 5.15
A view of the waterfront during the day.



Figure 5.16
A view of the waterfront during the evenings.

PUBLIC BELT- MARKET PLAZA

A roofed market plaza is proposed within the public belt as a venue for temporary stalls and flea markets. While the informal market street accommodates everyday trade, the plaza is designed for periodic use, functioning as a flexible space for weekend or seasonal activity. Here, Koli fishers and residents can rent stalls, creating an additional stream of income while drawing visitors from the wider city. The space is designed to provide shelter and order while remaining adaptable to various market types. The market plaza enables the community to extend its trade beyond the village, establishing a link between the village economy and the broader city.



KEY PLAN



Figure 5.17
A view of the market plaza.

PUBLIC BELT- COMMUNITY AND CULTURAL EVENTS

An existing open ground used for cultural activities is redefined as a dedicated space for community events. The intervention introduces storage facilities and a space to host festivals, rituals, and collective gatherings. The design ensures exclusivity for the Koli community, preserving their autonomy while providing functional support for large-scale cultural and community events.



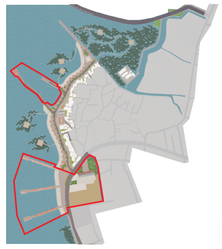
KEY PLAN



Figure 5.18
A view of the community space for traditions, festivals and gatherings.

ECONOMIC ZONE- FISHING PIERS FISHING HUB

The economic zone is organized around two sets of piers. At the center, existing piers are designated for larger trawlers, with direct loading facilities for transport trucks. Adjacent areas are structured for fish cleaning and segregation, with shelters for repair work that can be used as public spaces when not in use. To the south, smaller piers are reserved for artisanal fishers, connected to a fishing hub inland. The hub consolidates processing, auction halls, cold storage, drying yards, and transport facilities, reducing dependence on distant docks.



KEY PLAN

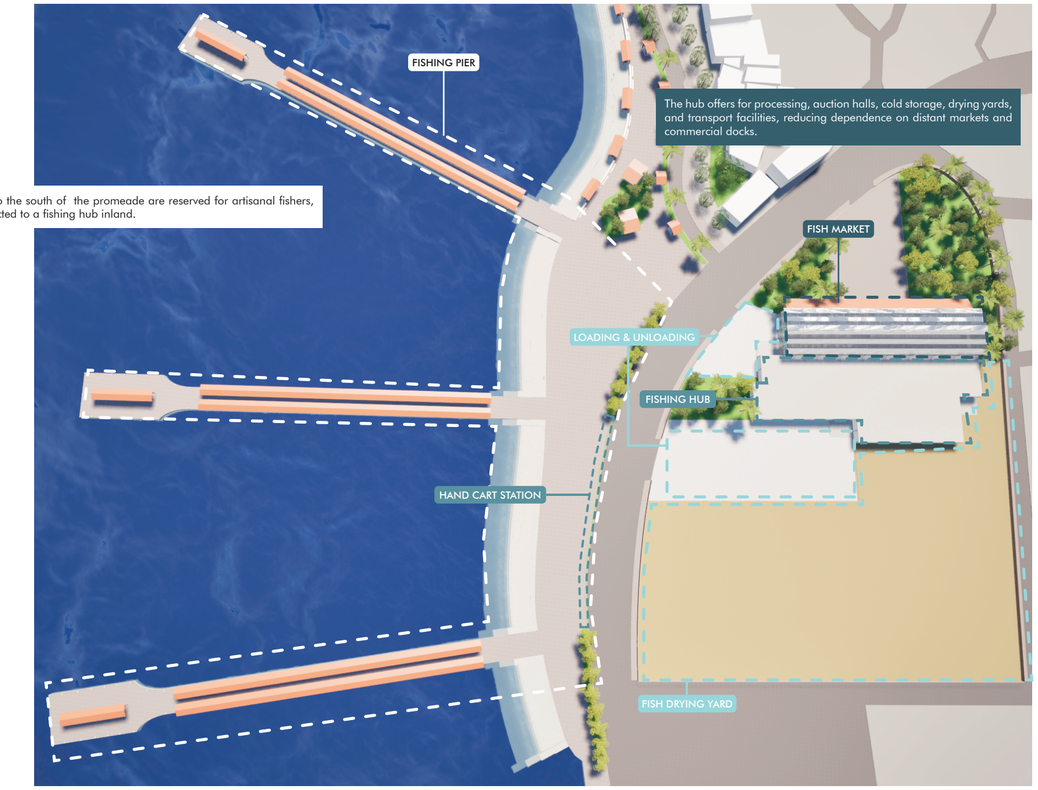


Figure 5.19
Schematic Plan for the Economical Zone.



Figure 5.20
A view of the jetty.



Figure 5.21
A view of the jetty used exclusively for small scale fishing piers for the Kolis.

ECONOMIC ZONE- FISHING HUB

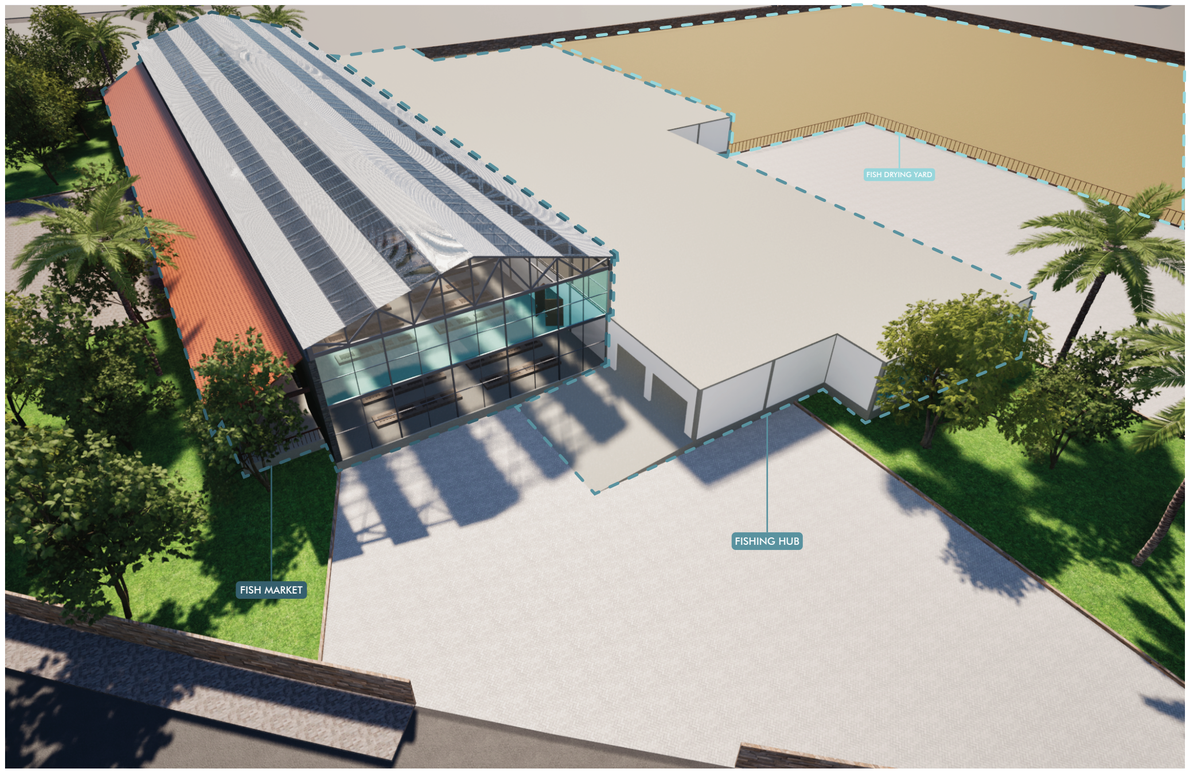


Figure 5.22
A view of the fishing hub.



Figure 5.23
A view of the entrance to the fish market.

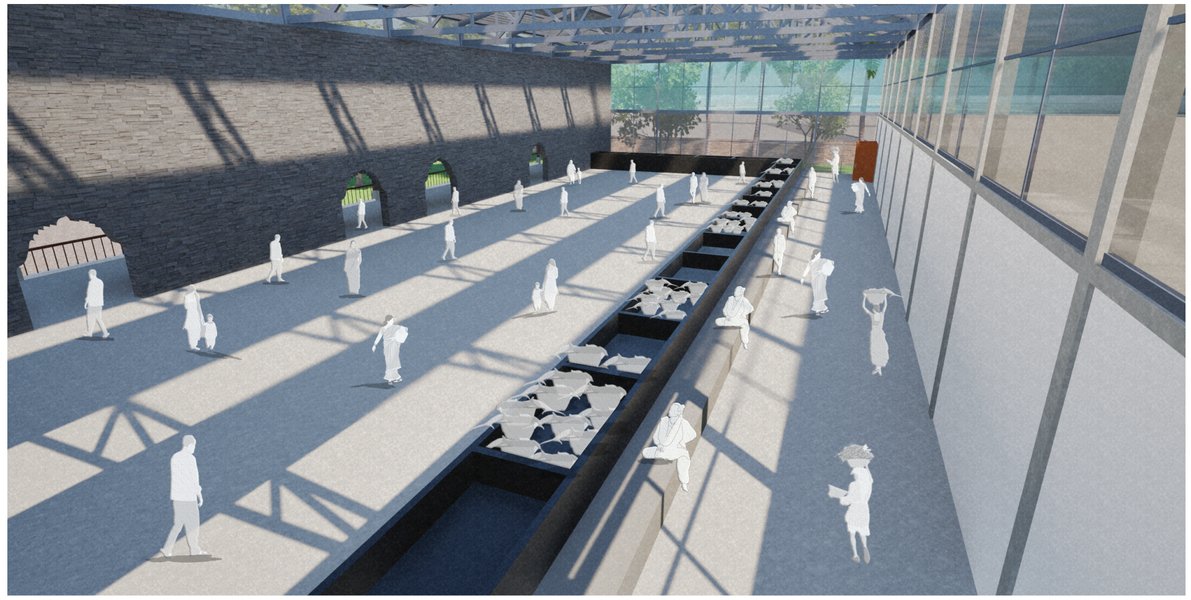


Figure 5.24
A view of the fish market within the fishing hub.

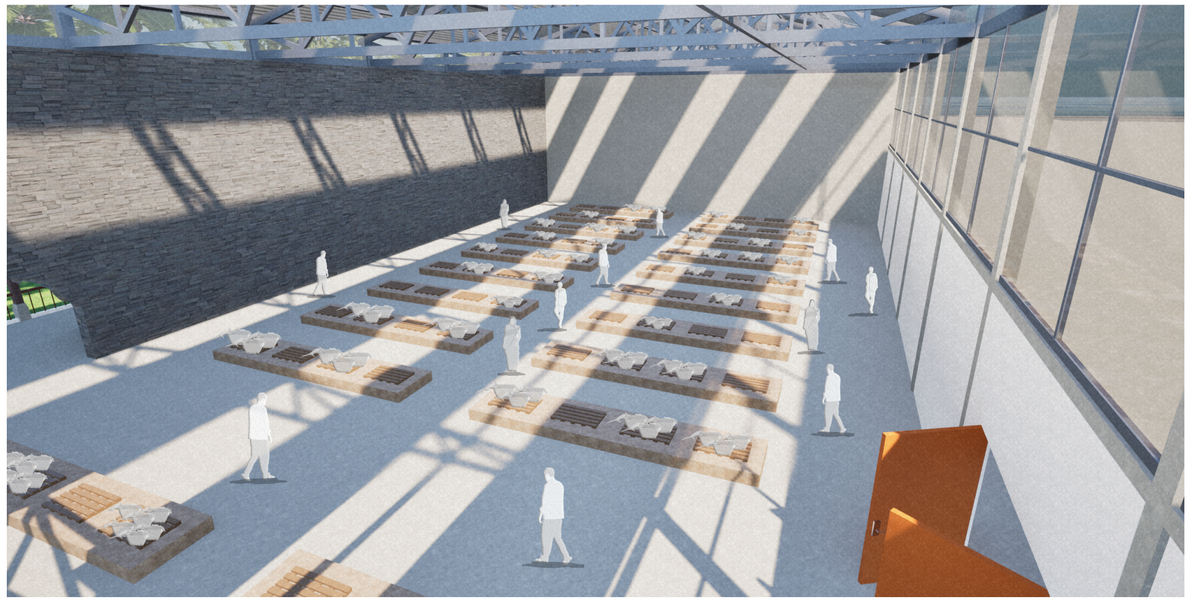


Figure 5.25
A view of the auction market within the hub.

VIEWS



Figure 5.26
A view of the waterfront.



Figure 5.27
A view of the food plaza and seating spaces along the waterfront.

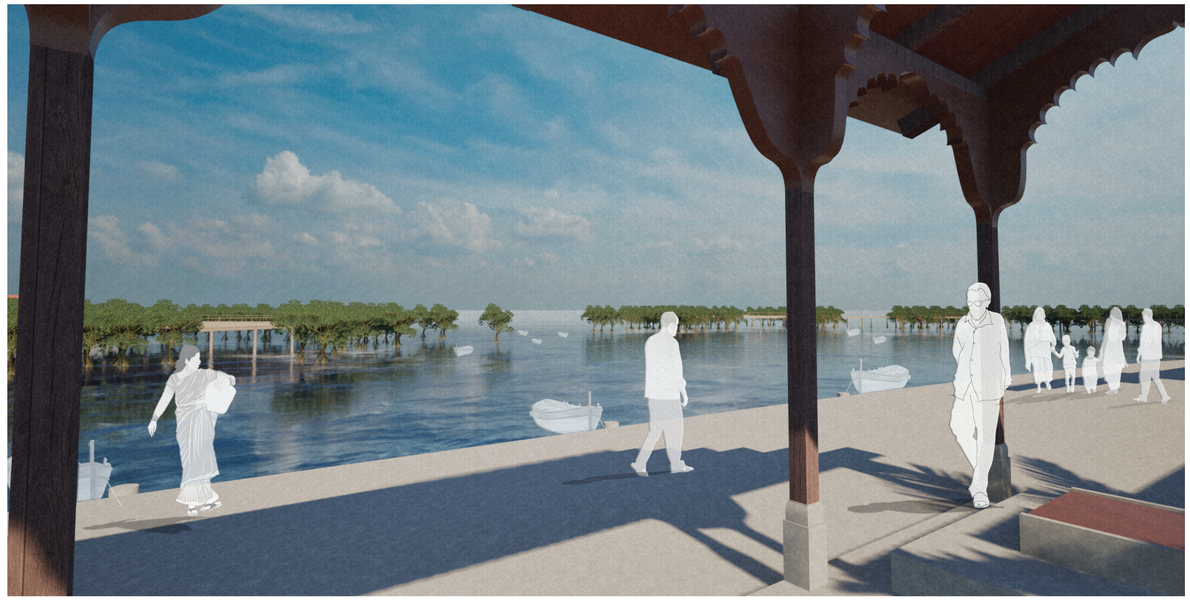


Figure 5.28
A view of the waterfront from the temporary structures.



Figure 5.29
A view of the platforms within the proposed magrove park.

06. REFLECTIONS

EPILOGUE

This thesis has sought to position Mumbai's fishing villages not as marginal settlements awaiting redevelopment, but as living cultural and ecological systems that demand recognition in the city's future. The reflections aim to synthesize the implications of the design project and to explore what is at stake in its proposal.

At its core, the project is an argument for continuity. The Koliwadas are among the oldest settlements of the city, yet their place within contemporary urban discourse has been reduced to categories of informality or obstruction. To intervene in this context is not only to provide infrastructure or public space, but to challenge the frameworks that have consistently erased fishing practices from the image of the modern city. The project demonstrates that the Kolis' cultural and economic presence is not residual but active, and that their survival is integral to a more resilient and inclusive urban future.

The project emphasizes that all three — ecology, economy, and culture — are interrelated within the coastal landscape. Ecological restoration, through the preservation of mangroves, wetlands, and tidal flows, is not conceived as environmental compensation, but as the foundation of both fishing livelihoods and urban resilience against flooding. Economic infrastructure, anchored by the Fishing Hub, addresses the imbalance between artisanal and industrial practices while enabling small-scale fishers to maintain agency within market networks. Cultural integration, through markets and a continuous promenade, affirms visibility and presence, ensuring that Koli life remains embedded in the public realm of the city. Each of these strategies extends beyond the site of Khar-Danda, suggesting a transferable framework for other coastal settlements facing similar pressures.

However, the project also acknowledges its limits. Design can open possibilities, but it cannot fully resolve the complex interplay of political, economic, and regulatory forces that shape Mumbai's coastline. The challenges posed by large-scale infrastructure projects, speculative redevelopment, and the asymmetries of the fishing economies remain beyond the reach of spatial intervention alone. The reflections, therefore, recognize that the scope of the thesis is not to offer definitive solutions, but to propose conditions through which alternative futures become thinkable. In this sense, the project is less a finished answer than an instrument for negotiation, making visible what would otherwise be at risk of disappearing.

The project's scope lies in its ability to operate across multiple scales. At the settlement scale, it provides facilities that secure livelihoods and affirm cultural practices. At the scale of the coastline, it reframes the shore not as expendable land for reclamation, but as a porous ecological edge that sustains both the city and the community. At the urban discourse scale, it positions Koliwadas as central to debates on resilience, sustainability, and identity in Mumbai. The project demonstrates that fishing villages are not isolated pockets, but rather nodes within a larger network of ecological and cultural life that extends across the city's western seaboard.

Reflecting on the design process, everyday life in the community unfolds in a temporal context. The fishing economy is organized around daily cycles of tides, seasonal bans, and generational shifts in knowledge and practice. Any intervention that seeks to support this economy must therefore be flexible, allowing for rhythms of expansion and contraction, as well as permanence and temporality. The project embraces this by embedding infrastructure within open-ended landscapes, rather than imposing rigid forms that risk becoming obsolete.

Looking forward, the project opens several avenues for further exploration. The framework developed for Khar-Danda can be extended to other fishing settlements along the western coast, forming a distributed network of ecological and cultural hubs. The integration of mangrove restoration, fishing infrastructure, and public waterfronts could serve as a model for balancing ecological resilience with cultural continuity in other contexts. At the same time, this project cautions against assuming that design alone can safeguard these futures. What is needed is an alignment of policy, community agency, and design innovation. The thesis contributes by demonstrating how design can serve as a mediator between these forces, creating spaces where ecological processes and cultural practices can coexist within the pressures of urban development.

In conclusion, the reflections recognize the project as both limited and generative. It cannot guarantee the future of the Koliwadas, but it can create a framework that secures space for their survival. It can resist the erasures of redevelopment and open a vision of a coastline where ecology, livelihood, and culture coexist. Most importantly, it can reposition the Kolis not as marginal actors but as central to the imagination of Mumbai's future.



A Koli woman.

M. V. Dhurandhar, illustration in S. M. Edwardes, By-Ways of Bombay (Bombay: D. B. Taraporevala Sons & Co., 1912).

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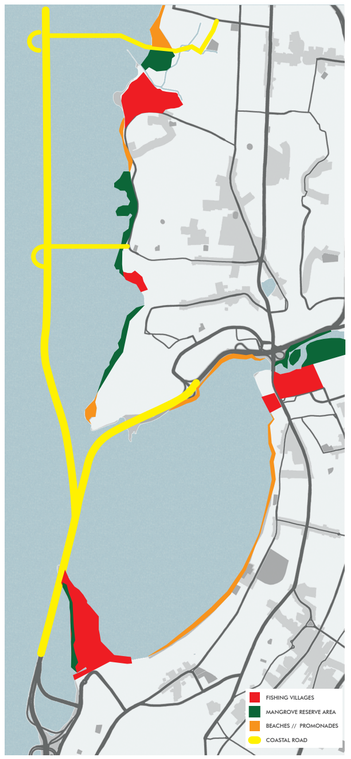
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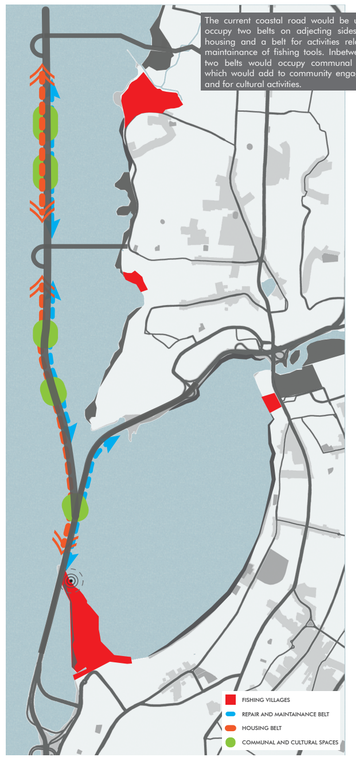
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Appendices

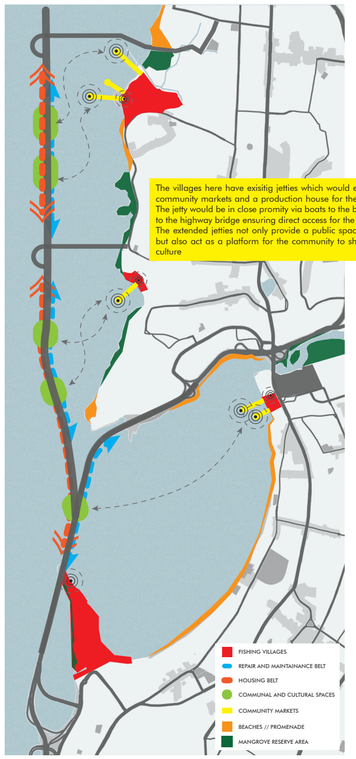
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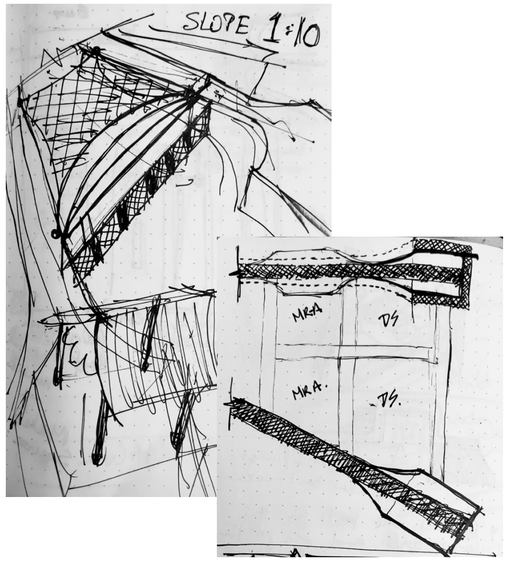
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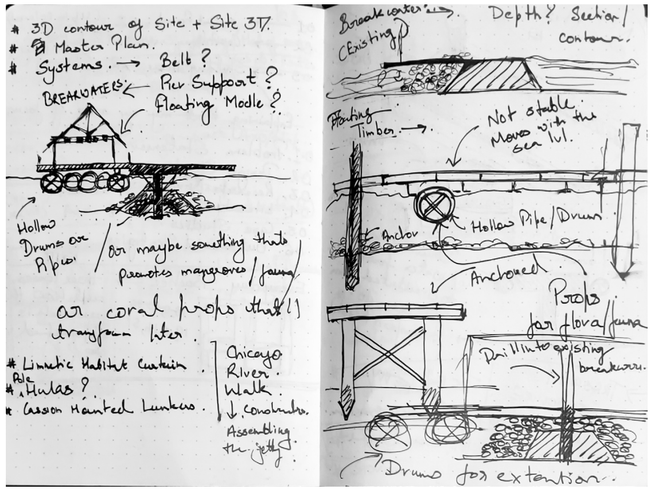


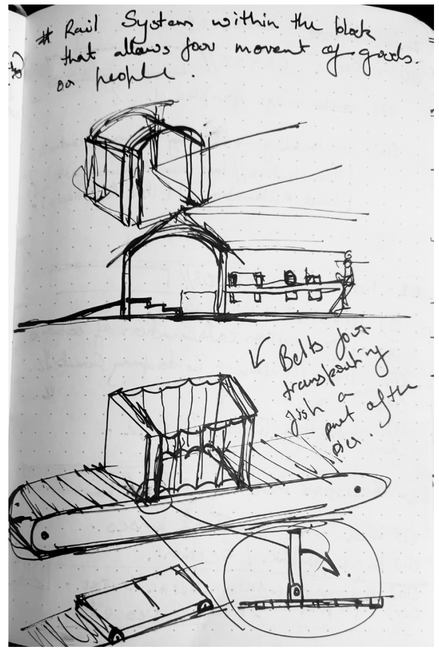
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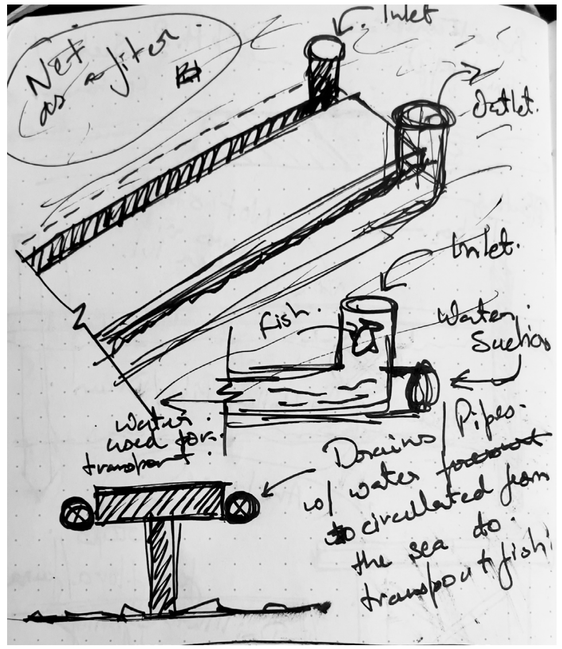


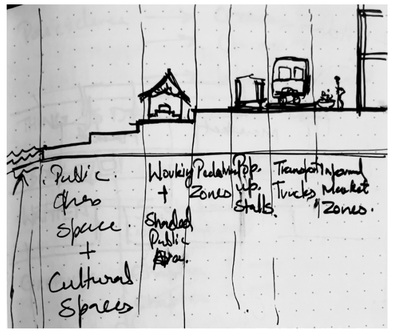
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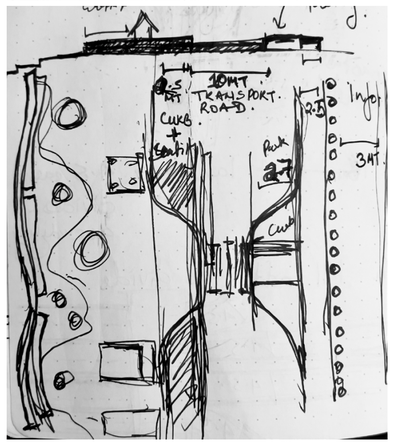


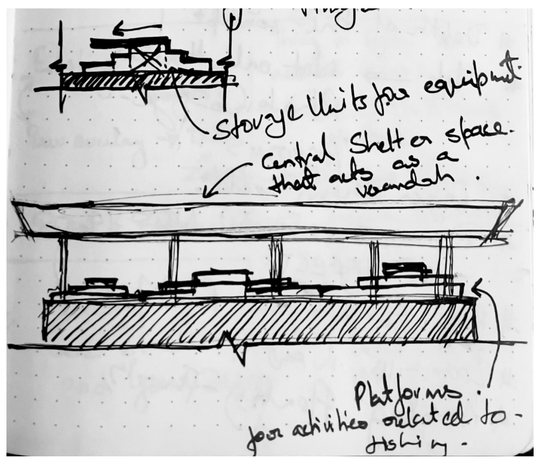


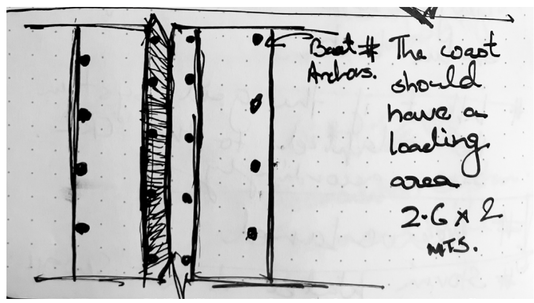












Glossary

Koli and Agri Community
Indigenous fishing and agrarian communities of Mumbai. The Kolis are traditionally fishers, while the Agris are historically cultivators of salt and rice in the coastal areas.

Koliwada
A traditional fishing village or settlement of the Koli community, typically located along the shoreline and organized around access to the sea.

Mumba Devi
The local deity after whom the city of Mumbai is named. Mumba Devi is regarded as the guardian goddess of the Kolis and their settlements.

Bombay Duck
A small, dried and salted fish (Harpadon nehereus), central to the Koli fishing economy and commonly traded in Mumbai's fish markets.

Nuhalla
A drain or water channel, often carrying stormwater, tidal flows, or wastewater into the sea. In Koliwadas, nuhallas are part of the settlement's edge conditions, shaping how the community interacts with both land and water.

SRA (Slum Rehabilitation Authority)
A government body established in 1995 to implement slum redevelopment schemes in Mumbai. SRA projects have often impacted Koliwadas by reclassifying them as informal settlements.

Narali Pournima
A Koli festival marking the end of the monsoon and the beginning of the fishing season. Fishermen offer coconuts to the sea, seeking protection and prosperity.

Ganesh Chaturthi
A major Hindu festival celebrated widely in Mumbai, including within Koliwadas, where processions and installations of Ganesh idols occupy streets and courtyards.

Holi
A spring festival of colors celebrated across India, observed in Koliwadas with community gatherings and public rituals.