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Exploring the Economic Prospects and Challenges of Sustainable Waterfront Development in Dhaka City, Bangladesh

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Abstract

Purpose: *The study explores the economic prospects and challenges of sustainable waterfront development in Dhaka City, with a particular focus on the economic aspects.*

Methods: *A qualitative approach was followed, comprising a literature review, field observations, and semi-structured interviews. Data were thematically analyzed across social, environmental, and economic dimensions, with emphasis placed on identifying existing economic activities and assessing their potential for structured business growth.*

Results: *Findings reveal that the Turag riverfront hosts a variety of informal activities and businesses, such as water transportation, street vending, fishing, freight handling, and recreation. Stakeholders' insights confirmed that although these activities sustain local needs, the absence of organized facilities, weak governance, and environmental degradation constrain its potential as a structured economic hub. International case comparisons from Kyrenia in Cyprus, Jeddah in Saudi Arabia, and Alexandria in Egypt show how the formalization of informal businesses, investment in infrastructure through Public–Private Partnerships, and heritage-based tourism can transform waterfronts into competitive urban economies.*

Conclusion: *The study concludes that economic vitality is central to sustainable waterfront development. Integrating informal activities into formal planning, aligning with national policies such as the Bangladesh Delta Plan 2100, and promoting tourism-oriented investments and Small- and Medium-sized Enterprise–based strategies can enable the Turag riverfront to evolve as an inclusive, sustainable urban development model.*

Keywords: Business development, Dhaka city, Informal economy, Sustainable water fronts, Urban water front

JEL Classification: O18, Q56, R11

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I. Introduction

Urban waterfronts serve as a collective public resource for cities. The city's local authority typically manages and maintains it, regardless of neighborhood public support. In recent years, numerous cities have formalized their waterfronts to create a new identity or maintain historic significance. Formal waterfront construction along seas and rivers has improved their functionality as public spaces. These spaces draw individuals from diverse societal segments, including local residents and tourists, both domestic and international. As formal activities along the waterfronts increase in complexity, conflicts among users over the sharing of designated spaces and facilities are likely to emerge. Global evidence shows that urban waterfronts are sites of conflict among intersecting interests and desires (Fageir, 2015). The city must preserve the functional and aesthetic qualities of its waterfront. Community involvement in waterfront management minimizes user conflicts and promotes sustainable urban waterfront principles (Shah & Roy, 2016). Sustainable urban waterfront development is crucial for urban renewal and transformation. Sustainability is crucial for 21st-century cities, with sustainable waterfront strategies serving as a key distinguishing feature (Timur, 2013). Urban waterfronts worldwide are declining due to multiple environmental, social, and economic factors (Hussein, 2014). Numerous urban waterfronts fail to satisfy key sustainability criteria. This could impede the city's overall urban design. The effective design of waterfronts relies on balancing functionality and aesthetics. Social sustainability focuses on universal accessibility, fostering a sense of belonging, and ensuring flexibility in the utilization of waterfront spaces and facilities. Developed countries have improved their seacoasts and waterfronts with sustainability in focus, while developing nations continue to strive for a sustainable balance in their public waterfront spaces (Shah & Roy, 2016). Recent studies underscore waterfronts as economic assets, noting their ability to create jobs, draw investment, elevate land and property values, and boost tourism (Üzümcüoğlu & Polay, 2022; Ragheb et al., 2024; Zaki & Hegazy, 2023). International cases such as Kyrenia in Cyprus, Jeddah in Saudi Arabia, and Alexandria in Egypt illustrate that sustainable waterfront regeneration combines economic vitality, cultural heritage, and environmental resilience. This highlights the potential of waterfronts as social hubs and catalysts for local and regional economies (Üzümcüoğlu & Polay, 2022; Ragheb et al., 2024; Zaki & Hegazy, 2023). The Turag riverfront in Dhaka exhibits a similar case where unplanned development hinders its diverse potential. This study therefore aims to identify economic activities, examine challenges faced by local businesses and propose a framework for enhancing sustainable business opportunities.

II. Reviews

"Waterfront" typically refers to the area where water meets land, encompassing the interface between aquatic environments and adjacent terrestrial regions, which is influenced by both natural phenomena and human activities (Üzümcüoğlu & Polay, 2022). In a similar vein, within an urban framework, a waterfront is characterized as the section of a city that adjoins a body of water, which may include a river, sea, or lake (Hussein, 2014). The regions in question frequently engage in vibrant activities that influence both their ecological and social importance. Their functionality and appeal for common or public use have become increasingly significant (Giovinazzi & Moretti, 2010).

The sustainable development of a city necessitates a harmonious balance among environmental considerations, social dynamics, and economic activities; in this context, waterfronts can serve a pivotal function. When effectively managed, they have the potential to enrich a city's identity, improve livability, and bolster overall resilience (Ragheb & El-Ashmawy, 2020). Natural water features provide sensory and psychological advantages that facilitate relaxation and enhance social interactions (Timur, 2013). Water contributes to a sense of visual tranquility, auditory liveliness, tactile engagement, and psychological rejuvenation (Omen, 2007). Additionally, it plays a crucial role in climate regulation, noise reduction, and the enhancement of recreational activities.

Research on Bangladesh's waterfront has largely concentrated on spatial design, ecological

functions, and hydrological rehabilitation. The design led economic aspects of waterfront are neglected. A study on Sylhet waterfront redevelopment emphasized urban planning and spatial identity, overlooking employment, income, and business outcomes (Tanjima, 2020). The Bhairab River initiative assessed sustainability but overlooked financial viability and business regeneration (Roy, 2020). Narayanganj canal repair utilized water-sensitive urban design, omitting economic indicators (Chowdhooree & Aziz, 2023). A study on ecosystem service site appropriateness found environmental and social benefits, but no financial ones (Parvez et al., 2024). Recent studies on nature-based frameworks emphasize ecological resilience and spatial organization over economic contributions (Zaman et al., 2024). These literatures indicate that Bangladeshi waterfronts are often seen as aesthetic or ecological assets rather than a venue of diverse economic opportunities.

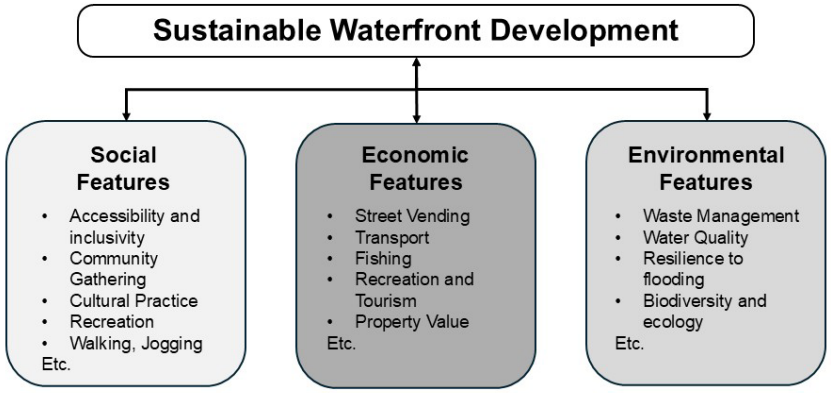
Urban waterfronts are vital for branding, tourism, and spatial change. The economic benefits of these programs are not well studied. An international assessment emphasized the importance of water features in urban areas but found no evidence of economic benefits, SME growth, or job creation (Benabbou et al., 2022). A study explored governance, heritage, and ecology, omitting financial flows and investment results (Taufen & Yocom, 2021). The Qiantang waterfront and Cairo's Mamsha promenade studies focused on citizen perception and public value, omitting economic factors (Wang et al., 2020; Elsaman et al., 2022). Barcelona's reconstruction narrative prioritizes spatial factors rather than financial ones (Benach & Font-Casaseca, 2025). Case studies in Jeddah examined the social, cultural, and economic impacts (Al-Saud & Goussous, 2023), and one study also quantified the impact using input–output and cost–benefit analysis frameworks (Gbban et al., 2025). In Southeast Asia, developments often rely on environmental or symbolic factors rather than systematic financial planning (Permana et al., 2017). Global patterns indicate a similar gap in understanding the economic effects in Bangladesh, though this is not empirically verified.

Urban waterfronts present significant opportunities for economic and business development owing to their strategic positioning and potential for mixed-use real estate. Redevelopment often increases property values, enhances public-private investment, and generates employment in sectors such as hospitality, retail, and transportation (Desfor & Laidley, 2011). Effective place-making and regeneration projects enhance urban competitiveness, attracting local and international investors (Hasson & Ley, 2014; Benabbou et al., 2022; Gbban et al., 2025). Therefore, rather than just their visual appeal and social significance, waterfronts are progressively acknowledged as valuable economic resources. Revitalized waterfronts have the potential to create job opportunities, draw private investment, and enhance property values. International examples, such as Kyrenia in Cyprus, illustrate the potential for historic harbors to be revitalized in order to foster creative economies and tourism (Üzümcüoğlu & Polay, 2022). Similarly, Jeddah's waterfront exemplifies the integration of green infrastructure with public-private partnerships, aimed at leveraging economic opportunities while maintaining cultural identity (Zaki & Hegazy, 2023). Additionally, the case of Alexandria's El-Anfoushy promenade demonstrates how the application of smart technologies and heritage-based tourism strategies can enhance local economies while promoting sustainability (Ragheb et al., 2024).

The literature reviewed underscores the significance of economic vitality within modern sustainable waterfront frameworks. The functional features from the literature are illustrated in figure 1, along with the aspects for sustainable development of waterfronts based on the three case studies for descriptive presentation.Urban waterfronts provide various benefits across functional, social, environmental, and economic aspects. When designed and managed holistically, these spaces can evolve into dynamic, multifunctional environments that promote commerce, tourism, cultural identity, and ecological resilience.

Figure 1

Activities and Features of Sustainable Waterfront Development



While regeneration centered literature frequently emphasizes socio-cultural value, accessibility, and visual coherence of waterfronts (Djukić et al., 2020; Al-Saud & Goussous, 2023), there is a notable lack of research focused on revenue generation, financial tools, or SME frameworks. Moreover, environment focused studies emphasize ecological uplift and water-sensitive infrastructure, but they often too neglect economic performance (Zaman et al., 2024; Chowdhooree & Aziz, 2023). This is also seen in recent research linking nature-based planning to spatial justice neglects the aspects of business formalization and employment multipliers (Parvez et al., 2024). Which highlights the need for study focusing on economics and bussiness for waterfront development. Therefore, the foundation of this study is established by the critical literature gap that pertains to the economic prospects of sustainable waterfront development and the concepts associated with it.

III. Methods

Initially, literature review was done on the topics such as waterfront, waterfront development, economic aspects of waterfront, sustainability, and sustainable waterfront development for the conceptualization. This study employed a qualitative research design combining semi-structured interviews and observation checklist to explore prospects and challenges of economic activities for sustainable waterfront development in Dhaka.

A checklist was prepared to identify the activities performed daily, and the facilities available on the selected locations at the Turag riverfront, Dhaka. This intensive field observation was carried out to identify the activities and facilities of the site area in September 2024 to determine economic potential and possibilities. Additionally, semi-structured interviews were conducted with key stakeholders consisting of formal and informal business to gather qualitative insights into the waterfronts' economic dynamics and business situation. The participants were selective using purposive sampling to represent various business types and these interviews explored business challenges, governance issues, infrastructure gaps and vision for future development.This included 12 interviews, aligning with scholarly standards suggesting that code and meaning saturation often reachedbetween the 9th to 16th interview (Hennink et al., 2016). While smaller samples also enhance depth and validity in qualitative research (Crouch & McKenzie, 2006). Thematic analysis was employed to identify recurring themes and patterns focusing on business challenges, infrastructure and governance from the interviews transcript.The list of respondents, their roles or business types and years involved with the waterfront are summarized in table 1.

Table 1

List of Semi-structured Interview Respondents

Respondent	Role or Business Type	Years of Involvement
1	Hawker (Street Food)	5+
2	Rickshaw Puller and Local Resident	25+
3	Boat Operator (Engine Boat)	2+
4	Shop Owner (Seasonal Vendor, toys, tea stalls etc.)	10+
5	Shop Owner (Juice and drinks)	7+
6	Boat Operator (Paddle Boat)	2+
7	Boat Operator (Paddle Boat)	3+
8	Shop Owner (Tea Stall)	5+
9	Laborer (Goods loading/unloading)	3+
10	Shop Owner (Tea, snacks and groceries)	5+
11	Hawker (Street Food)	5+
12	Rickshaw Puller	10+

For anonymity, the 12 respondents in analysis are identified by their number and sometimes their business. For both checklist and interview the reliability was ensured by consistent use of the exact same checklist across different observation points, while validity was enhanced by triangulating field observation data with interview insights and secondary literatures. Data from both observation and interviews were analyzed thematically focusing on activities, facilities and challenges for business development in aligning with the three aspects of sustainability.

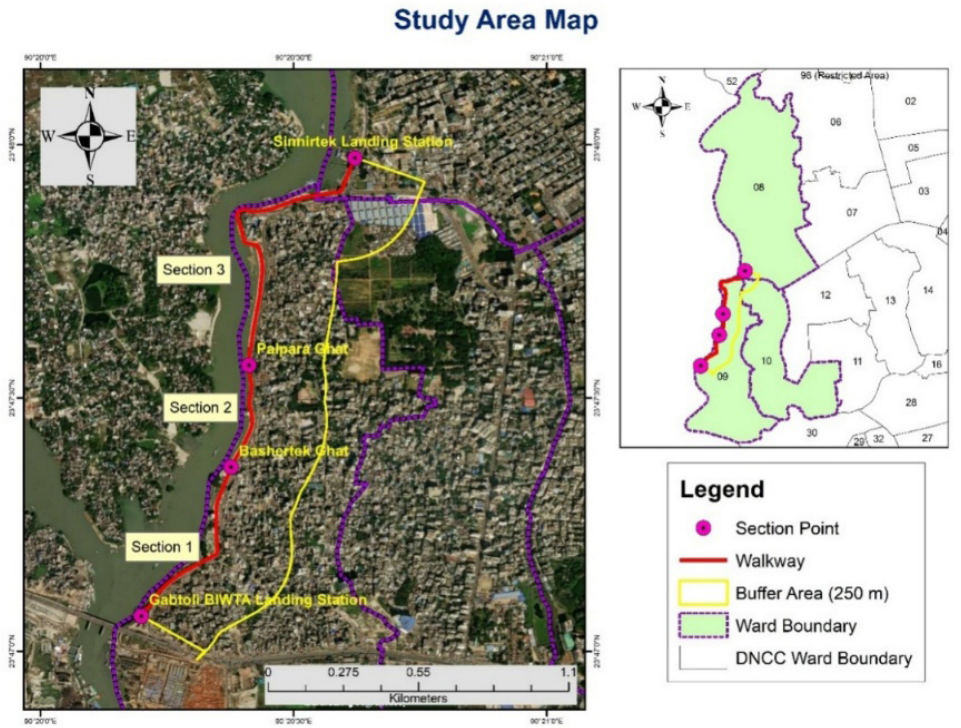
Study Area

For this study the Turag, a peripheral river of the Dhaka city was selected (Figure 2). The Turag originated from the Bangshi River, converged with the Buriganga River at Mirpur in Dhaka, which is one of the prime rivers in this region (Whitehead et al., 2018). The Bangladesh Inland Water Transport Authority (BIWTA) nearly constructed 20 km walkway and along the Turag River (The Financial Express, 2023).

Dhaka city is surrounded by major 4 rivers namely Balu, Buriganga, Shitalakshya and Turag. Turag is a prominent river in the area, rising from the Banshi River and flowing through the district of Gazipur before joining the Buriganga at Mirpur in the district of Dhaka. It flows along the northern part of the Dhaka city. The Turag spans 75 km, of which 2.15 km are selected within the study area. It begins at Gabtoli BIWTA Landing Station (23°47’5” N 90°20’12” E) and ends at Sinnirtek Landing Station (23°47’58” N 90°20’34” E). Turag is the upper tributary of the Buriganga River. Rapid change in land use through conversion of agricultural land to urban areas along the river was observed from the study. Due to industrial and commercial activities close to the riverbanks, the Turag River is severely contaminated. For this study purpose the selected area is divided into the 3 sections under the 4 section points, which are Gabtoli BIWTA Landing Station, Bashertek Ghat, Palpara Ghat and Sinnirtek Landing Station.

Figure 2

The Selected Study Locations of Dhaka's Waterfront



IV. Results and Discussion

The Turag riverfront consists of diverse activity and host diverse facilities; the study observed the existence of those activity and facility and combined it with insights of local business to develop vivid illustration of the riverfront can be described for analyzing the prospects and challenges to fulfil objective of the study. The study findings are result of combining extensive field observation with in-depth data from interviews which provide crucial context and stakeholder perspective on economic activities and potential.

The activities at the Turag riverfront were intensively observed from 7 am to 9 pm, which revealed a broad array of activities along the Turag riverfront, encompassing transportation, commercial and business, lifestyle purposes, recreational uses, several types of water use, and trash management. Figure 3 shows these diverse lists of activities observed.

A significant portion of the activities are directly linked to the local economy, with street vending, fishing, freight handling and restaurants constituting the foundation of economic prospects for the beneficiaries of the waterfront area shown in table 2.

Figure 3

Activities at the Turag riverfront; (a)Boating for Recreation, (b) Leisure and resting, (c) Bathing, (d) Freight handling, (e) Street vendor, (f) Local raw produce business, (g) Wood scrap and firewood, (h) River crossing via boats and (i) Fishing

Table 2

Existing Activities Observed along the Turag Riverfront

Activity Type	Observed Activities
Transportation	Commuting (workers, students, groceries), freight traffic (trawlers, bulkheads), boat crossings
Business and commercial	Street vending (fruits, snacks, tea stalls), restaurants, fishing (nets, hooks), blacksmiths, bamboo selling, cement and brick unloading/loading, firewood trade, rickshaw stands
Lifestyle and recreation	Walking, jogging, gossiping, resting in shade, kite flying, boat rides, afternoon leisure, community gatherings
Water Use	Bathing, swimming, washing clothes, washing utensils and nets, collecting water, car washing
Environmental and waste management	Dumping of waste, collection by city authorities/community groups, dredging for sand and erosion control
Cultural/Religious	Prayers at mosques, informal music sessions, cultural gatherings during festivals/functions

Moreover, interviews also confirmed the current regular crowd is not favorable for business growth or development. As the transportation, commercial and business activities are mostly at their peak in specific seasons and are timebound, catering to weekends and religious function oriented crowds, while other activities like freight handling and small shops like tea stalls are regular crowds mostly consisting of laborers and truck drivers, forming current functional backbones.

Facilities across the four-section studied varied which reflect disproportionate development efforts existing. While the basic infrastructure such as walkway and boat service for river crossing exists, other facilities like designated vendors, sanitation facilities and parking which are aid to development of economic activity are still limited. The facilities observed are summarized in table 3.In the interviews respondent 5 mentioned that the walkways were made only 2 years prior but due to lack of maintenance it is deteriorating day by day while accumulating waste. While Respondent 4 associated walkway with mugging incident and leads to people avoiding the walkway. So, the walkway is failing in its purpose. Respondent 7 and 8 noted lack of public toilet facilities to be a discouraging factor for potential visitors. Respondents 7 and 12 highlighted that lighting was crucial for safety and attraction. Respondents 3, 6 and 7 stated how although boat services were active, it was fragile with no regulation to grow. Almost majority of the respondents mentioned the need for cleanliness. Although facilities exist at some scale due to lack of maintenance, regulation and safety concerns they are not utilized at full potential which limits the waterfronts' ability to facilitate structured business and economic growth.

Table 3

Existing Facilities Observed at the Turag Riverfront

Facility Type	Observations
Accessibility	Walkways (2.44–3.05m wide, discontinuous in some sections), boat crossings available
Amenities	Seating, waste bins, toilets (unevenly distributed, absent in some areas)
Commercial Support	Street food stalls, restaurants, hotels (limited, concentrated mainly in Section 2)
Public Services	Lighting (partial coverage), kiosks (not always functional), BIWTA Eco Park (Section 2 only)
Social/Cultural Spaces	Playgrounds, mosques nearby, open spaces for gathering
Transport Facilities	Ferry decks, informal rickshaw stands, freight handling zones

The analysis of sustainability indicators shows there are some aspects addressed still, but major lacking in ecological restoration, structured governance and equitable access. Moreover, the economic dimension of sustainability is underdeveloped, while there are some small businesses and informal trades continue, there is little evidence of major tourism oriented or structured support for business development. The informality and illegality of the business on the riverfront strip was verified in the interviews. Respondent 5 mentioned how BIWTA every year or two removes illegal shops formed, but they rebuilt shortly after, keeping the cycle of illegal and informal practices. Moreover, due to lack of safety there is active discouragement working against potential visitors or tourists. The concern regarding waste management was as prevalent as safety, along with mention of environmental issues, Respondent 3 mentioned that river water attracted the visitors in a greater extent. However, due topoor quality of river water and odor in winter and summer seasons very few visitors visit Turag riverfront during that period.

Table 4

Key Sustainability Indicators Existing in the Turag Riverfront

Dimension	Key Observations
Social	Public accessibility for all groups, but lack of inclusivity for women, elderly, and disabled (no ramps, discontinuous walkways).
Environmental	Severe water pollution, absence of habitat restoration, partial waste management, erosion control limited.
Economic	Informal businesses (vendors, fishing, boat transport) active; limited tourism-oriented facilities; no structured SME zones or investment incentives.

Business Perspective on the Challenges

Based on the 12 interviews with key stakeholders, four major challenges were identified that hinder the growth of business and economy of the Turag riverfront, which includes informality and lack of security, inadequate infrastructure, environmental degradation, and weak governance. These challenges highlight both immediate constraints on business activities and long-term barrier for economic growth.

Lack of Security and Informality

Informal shops and vendors dominate the waterfront's economy, but their lack of recognition makes their livelihoods uncertain. While respondent 1 a local hawker felt they faced no problem and accepted the varying flows of visitors and local labor and truck drivers as customer base. While other respondents emphasized the risks of informality and its uncertainty. Respondent 5 a roadside shop owner reported BIWTA's sudden eviction issues, while, on the other hand respondent 10 another shop owner favored formalization to reduce harassments. However, a fear that formalizing will lead to displacement of the locals also exists. Then there is actual concern for safety, where the issue of safety and security was termed by respondents 3, 7 (Boat operators) and respondent 5 (Shop owner) as the core reason behind the area and business not being able to grow, the fear of mugging and snatching also deters possible visitors and tourists. Combined, this is a crucial challenge for the business to be able to operate while also to be able to get enough customers to grow.

Inadequate Infrastructure

Respondents repeatedly addressed the absence of crucial visitor or touristoriented facilities such as lack of public toilets. Lack of safety infrastructure like quality street lights and CCTV was also mentioned by respondents 12. Respondent 5 mentioned how even local guards are helpless in front of armed muggers. So, there is a need for dedicated guard posts or security infrastructure to develop the riverfront. Respondent 3, a boat operator also highlighted the absence of supporting facilities like repairing and fueling for boats. Despite freight activity being the regular one, there was no dedicated design for freight handling. Infrastructure is crucial for functioning of business and relevant activity to make economy grow.

Environmental Degradation

Water quality due to pollution and waste disposals were identified as deterrent for both visitor and business. Respondent 4 a shop owner mentioned if the water quality were good, visitors would also visit in non-rainy seasons. Linking ecological restoration to business growth. Similarly, another boat operator, respondent 7, pollution and waste accumulations discourage the higher paying customers to visit the area. These underline that environmental concerns are inseparable for economic potential.

Weak Governance

Almost all respondents highlighted the fact that there was absence of any responsible authority

along the waterfront contributing to waste mismanagement, safety and security crisis. It was noted although the land area is owned by BIWTA along with the ghat or stations, BIWTA takes very little action to manage and regulate the area overall and which limits business to grow. Respondents also suggested cooperatives or new management authorities for the businesses to realize the highest economic potential of the riverfront.

Framework for Enhancing Economic Opportunities

The Turag riverfront shows multifunctional characteristics, where informal practices sustain livelihoods but remain under optimized for business development. To realize the economic potential requires learning from global experiences where successful waterfront regeneration has combined the aspects of sustainable development. Table 5 lists three such international cases from around the globe with relevance to challenges of Turag waterfronts development.

Table 5

Global Example of Successful Waterfronts Development

City and Country	Development Project / Program / Initiatives	Purpose Relevance
Kyrenia, Cyprus	Revitalization of historic harbor integrating cultural tourism and small creative enterprises	Demonstrates how formalizing informal activities and linking them to tourism strengthens local identity and creates employment.
Jeddah, Saudi Arabia	Jeddah Waterfront Development Project with Public-Private Partnership	Shows how infrastructure investment and PPPs enhance competitiveness, raise land values and boost tourism oriented businesses.
Alexandria, Egypt	El-Anfoushy Promenade Regeneration with smart technology and heritage based tourism	Highlights integration of heritage site and environmental restoration to diversify business opportunities and attract higher value visitors.

Note. Üzümcüoğlu & Polay, 2022; Zaki & Hegazy, 2023; Ragheb et al., 2024.

The international cases include Kyrenia in Cyprus, Jeddah in Saudi Arabia and Alexandria in Egypt that shows how integrating informal formal economy, Public Private Partnership (PPP) led infrastructure projects and heritage based ecological restoration can diversify urban business opportunities and enhance competitiveness. (Üzümcüoğlu & Polay, 2022; Zaki & Hegazy, 2023; Ragheb et al., 2024). Figure 3 shows a diagram for a four point framework synthesized by taking insights from the analysis, the three case studies and addressing existing national and local policies.

1. Economic Opportunities from Informal Activities

The prevalence of informal businesses along the Turag riverfront, for example, street vendors, small restaurants, and river-based trade demonstrates the area's embedded economic role. These activities, although unstructured, contribute directly to livelihoods and local circulation of income. A parallel can be drawn with the Kyrenia waterfront in Cyprus, where revitalization of historic harbors integrated cultural tourism and small creative businesses, resulting in increased employment and strengthened local identity (Üzümcüoğlu & Polay, 2022). Similarly, formalizing and supporting small businesses along the Turag, through designated vending zones, training, and micro-credit support, could upgrade informal economic activity into structured urban entrepreneurship. In the interviews diverse types of business including shop owners, hawkers and boat operators at the riverfront expressed interest in formalizing to reduce sudden harassment and eviction risks, hoping for better stability. The small businesses and boat operators both suggested that business and investment in restaurants and recreation facility will lead to more customers in the area and also benefit them.

2. Infrastructure Development and Competitiveness

Facilities across the Turag riverfront remain uneven, limiting economic potential. Essential infrastructure such as sanitation, lighting, and organized vending spaces is either absent or fragmented. International experience demonstrates that investment in facilities can yield high economic returns. For example, Jeddah's waterfront development in Saudi Arabia integrated green infrastructure with public–private partnerships (PPPs), enhancing the city's competitiveness, raising land values, and increasing tourism footfall (Zaki & Hegazy, 2023). For Dhaka, the introduction of PPP models could ensure better maintenance of facilities while creating new business opportunities. Here, respondent 3 a boat operator noted specific facilities like boat repair and fueling facility would help boats to be dedicated to this location and help in more business. Also, necessary security facilities were also crucial for developing sense of safety for business to be able to target consumers.

3.Sustainability and Long-term Gains

Although ecological sustainability at the Turag remains weak due to pollution and habitat loss, the waterfront has long-term potential to generate economic and environmental synergies. Lessons from Alexandria's El-Anfoushy promenade show that combining smart technologies, heritage-based tourism, and environmental restoration can simultaneously attract visitors and sustain local economies (Ragheb et al., 2024). Applying such strategies in Dhaka such as improved waste management, ecological restoration, smart kiosks for services, and heritage-linked cultural corridors could diversify income streams while improving environmental resilience. Respondents tied visitors or tourists not increasing despite the infrastructure developed to declining attractiveness due to visible pollution and poor water quality. One rickshaw pullet, respondent 12 stated that he wishes that the Turag riverfront area becomes like Hatirjhil, which is a lake based park in Dhaka, with highlighting organized development and cleanliness.

4. Governance and Policy Implications

The absence of structured governance and reliance on voluntary community initiatives limit the waterfront's ability to maximize its economic role. There were multiple mentions in the interview of BIWTA not being present and responsible enough, and there being no authority to regulate business in the surrounding and guide in overall development.To tackle this negligence, it is necessary to learn from the best international practices and focus policy alignment. Embedding waterfront regeneration into national frameworks such as the Bangladesh Delta Plan 2100 and the Detailed Area Plan (2022–2035) can provide institutional support for integrating economic planning with environmental restoration (The Financial Express, 2023). This approach would enable waterfronts like the Turag riverfront to evolve into multi-use economic corridors, balancing local livelihoods, urban branding, and resilience.

Figure 3

Framework for Realization of Economic Opportunities in Development of Urban Waterfront

To demonstrate the applicability of the proposed framework, table 6 summarizes the key economic prospects observed and reported along with corresponding challenges identified by stakeholders and strategies outlined according to the four-point framework to address these challenges. This highlights how practical intervention per the framework can possibly direct towards unlocking the waterfronts economic potential while ensuring sustainability.

Table 6

Prospects, Challenges and Framework Strategies for Turag Riverfront

Prospects	Challenges	Strategies based on Framework
Existing informal shops and vendors are present as economic foundation (Sustaining daily livelihood)	Informality and recurrent eviction threats	Business formalization Introduction of vending zones, licensing and microcredit to stabilize livelihood and reduce harassment
River transport and boating services development (For transport and recreation based economy)	Lack of safety, regulations, absence of repair and refueling facility	Infrastructure via PPPs Develop better docking stations and facilities, public toilets, lighting and security posters to attract business and users
Building on freight and logistic activities (Goods handling, labor intensive commerce)	Unorganized freight docking area, weak labor security	Infrastructure improvements For business designated freight handling and logistic facility with better safety and security for labors
Tourism and leisure based enterprise development (Visitor and tourist activity present but limited)	Severe pollution, odor and waste mismanagement discourage visitors	Environmental restoration Implement waste management system, ecological rehabilitation and heritage linked tourism initiatives.
Community-based small business and labor economy development (Seasonal business and small local service providers)	Absence of clearly defined responsible authority and governance	Governance and policy Establish a dedicated management authority or cooperative model and prioritize waterfronts linking with Delta Plan 2100 and DAP (2022-2035)

The analysis revealed that the Turag riverfront's economic potential is heavily constrained by structural issues of governance, regulation, security and infrastructure. Overcoming these challenges therefore is crucial for transforming the economy for sustainable development of the waterfront into and vibrant and competitive economy for which a framework was proposed for better strategizing the solutions or interventions.

V. Conclusion and Implications

This research on the Turag riverfront highlights its multifaceted nature, showcasing the intersection of various social, environmental, and economic activities. The waterfront plays a crucial role as a public space, yet much of its utilization is informal and focused on basic needs of the local people. Street vending, fishing, goods handling, and small eateries are prevalent in daily life, providing livelihoods while lacking organized support. The findings suggest that while the economic aspect of sustainability is still lacking, it has significant potential to turn the Turag into a catalyst for urban regeneration and inclusive growth. Global best practices show that economic vitality is essential, serving as a core element of sustainable waterfronts. Case studies from Kyrenia, Jeddah, and Alexandria demonstrate the formalization of informal businesses, the role of infrastructure and public-private partnerships in enhancing competitiveness, and the potential of eco-tourism and smart technologies to create lasting economic and environmental benefits. Integrating these lessons with Bangladesh's policy

frameworks, like the Bangladesh Delta Plan 2100 and the Detailed Area Plan (2022–2035), can enhance institutional support for the economic revitalization of the Turag. The study's findings, grounded in stakeholder perception and observational data, highlight three key implications. First, it is crucial to integrate waterfront regeneration into national economic and urban planning strategies. Targeted investments in SME incubation, PPP incentives, and tourism-led development are essential for waterfronts to enhance the city's economic competitiveness. Secondly, planning considerations should focus on facilities like vending areas, sanitation, lighting, and organized transport hubs, as these foster both short-term and long-term business prospects. Third, community implications include enhancing the informal economy via training, micro-credit, and inclusive design can empower locals and mitigate displacement, promoting equitable waterfront development. In summary, the Turag riverfront has the potential to transform from its current informal vibrancy into a well-organized, sustainable waterfront economy that harmonizes social inclusion, environmental care, and economic growth. With thoughtful planning, investment, and governance, the Turag can exemplify sustainable waterfront development in Bangladesh, integrating economic growth with community resilience and urban identity. Further research should focus on the economic viability and social impact of the proposed framework, including detailed market analysis and comparative study of informal to formal business transition models.

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