Infrastructure, informality and the political ecology of urban water in Old Dhaka, Bangladesh

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Abstract

Global South cities such as Old Dhaka face persistent challenges in providing basic urban services, including drinking water, sanitation, electricity, and waste disposal. Access to these services is unequal, with limited resources disproportionately directed toward high-income neighborhoods. This article argues that such inequalities are not simply technical failures but are rooted in colonial and postcolonial governance regimes that continue to frame water as a commodified resource rather than a fundamental right. Drawing on ethnographic research in Old Dhaka, the article examines how residents rely on a dense landscape of informal practices involving water vendors, religious institutions, and neighborhood networks to secure everyday supply amid the shortcomings of formal provision. These informal practices do not constitute an alternative to state provision; rather, they operate alongside and through the state, compensating for infrastructural neglect while reproducing unequal power relations. Using a political ecology lens, and informed by a postcolonial perspective, the article shows how urban water governance both constrains and enables residents' capacities to secure dignified access to water. It contributes to urban political ecology debates by demonstrating how informality simultaneously sustains everyday survival and entrenches inequality in postcolonial cities.

Keywords: political ecology, water scarcity, informal water practices, urban governance, post-colonial perspective

Résumé

Les villes du Sud, comme le Vieux Dhaka, sont confrontées à des difficultés persistantes pour fournir des services urbains essentiels, tels que l'eau potable, l'assainissement, l'électricité et la gestion des déchets. L'accès à ces services est inégal, les ressources limitées étant concentrées de manière disproportionnée dans les quartiers aisés. Cet article soutient que ces inégalités ne sont pas de simples

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défaillances techniques, mais qu'elles sont ancrées dans des régimes de gouvernance coloniaux et postcoloniaux qui continuent de considérer l'eau comme une marchandise plutôt que comme un droit fondamental. À partir d'une recherche ethnographique menée dans le Vieux Dhaka, l'article examine la coexistence de deux systèmes d'approvisionnement en eau interdépendants : un système formel géré par la Dhaka Water Supply and Sewerage Authority (DWASA) et un système informel géré par les résidents à faibles et moyens revenus par l'intermédiaire de vendeurs d'eau, d'institutions religieuses et de réseaux communautaires. Ces pratiques informelles ne constituent pas une alternative à l'État ; elles fonctionnent en parallèle et par son intermédiaire, palliant le manque d'infrastructures tout en reproduisant des rapports de pouvoir inégaux. À travers le prisme de l'écologie politique et une perspective postcoloniale, cet article montre comment la gouvernance urbaine de l'eau, tout en limitant ou en renforçant, la capacité des habitants à accéder dignement à cette ressource. Il contribue aux débats sur l'écologie politique urbaine en démontrant comment l'informalité, tout en assurant la survie quotidienne, perpétue les inégalités dans les villes postcoloniales.

Mots-clés: écologie politique, pénurie d'eau, pratiques informelles liées à l'eau, gouvernance urbaine

Resumen

Las ciudades del Sur Global, como la Ciudad Vieja de Dacca, enfrentan desafíos persistentes para la provisión de servicios urbanos básicos, como agua potable, saneamiento, electricidad y gestión de residuos. El acceso a estos servicios es desigual, y los recursos limitados se destinan desproporcionadamente a los barrios de altos ingresos. Este artículo argumenta que estas desigualdades no son simplemente fallas técnicas, sino que tienen su raíz en regímenes de gobernanza coloniales y poscoloniales que siguen considerando el agua como un recurso mercantilizado en lugar de un derecho fundamental. Basándose en una investigación etnográfica en la Ciudad Vieja de Dacca, el artículo examina la coexistencia de dos sistemas hídricos interconectados: un sistema formal, regido por la Autoridad de Abastecimiento de Agua y Alcantarillado de Dacca (DWASA), y un sistema informal, gestionado por residentes de ingresos bajos y medios a través de proveedores de agua, instituciones religiosas y redes comunitarias. Estas prácticas informales no constituyen una alternativa a la provisión estatal; más bien, operan junto con el Estado y a través de él, compensando la negligencia infraestructural y reproduciendo relaciones de poder desiguales. Desde una perspectiva de ecología política y con base en una perspectiva poscolonial, el artículo muestra cómo la gobernanza urbana del agua limita y facilita la capacidad de los residentes para garantizar un acceso digno al agua. Contribuye a los debates sobre ecología política urbana al demostrar cómo la informalidad sustenta la supervivencia cotidiana y afianza la desigualdad en las ciudades poscoloniales.

Palabras clave: ecología política, escasez de agua, prácticas informales en el uso del agua, gobernanza urbana

1. Introduction

"We would not be able to survive if the approximately twenty mosques in East Jurain and South Shahjalalbagh did not supply fresh water through deep tube wells," remarked Shahanara[2], a resident of East Jurain in Old Dhaka. As she spoke, men, women, and children stood in line with plastic containers, quietly reaffirming the indispensable role that mosques play in the everyday struggle to secure drinking water. By eight in the morning the queue had already grown long. It was the peak hour of the day. People waited under the open sun with no shade and nowhere to sit. Tempers occasionally rose; many women worried about returning home in time to complete domestic work. I noticed that the bottle I had brought with me was almost empty. With no alternative source nearby, I

[2] All the names used in this article are pseudonyms.

joined the line. Several people offered to let me fill my bottle without waiting, but I chose to remain, continuing our conversation from within the queue.

An elderly man standing beside me recalled a recent breakdown of the mosque's deep tube well. During that period, residents had to walk to a more distant mosque, increasing the time, labor, and money required to obtain water. He lived with his son's family, he explained. Both his son and daughter-in-law worked outside the home, so as a retiree he had assumed responsibility for collecting water while his wife cared for the grandchildren. Carrying heavy containers back to the house, however, was physically exhausting.

When I asked whether they received municipal supply, he nodded. They had a connection from the Dhaka Water Supply and Sewerage Authority (DWASA), but since moving to the area they had never experienced continuous service. He and his wife kept taps open in the kitchen and bathroom to fill buckets whenever water was available. Yet this water was undrinkable. They allowed sediments and dirt to settle and skimmed clearer water from the top for washing and bathing. On days when the odor was overwhelming, he admitted, they simply avoided bathing. For drinking and cooking, the family depended almost entirely on mosque water.

Because there were young children in the household, he needed to make the trip twice daily—once in the morning and again in the evening. What might appear as a simple act of collection thus structured the rhythm of the entire day, redistributing labor along lines of age and gender. He further noted that private vendors and small businesses provided door-to-door delivery, but these options remained beyond the family's reach given their limited financial resources.[3]

Such scenes are neither exceptional nor temporary. They illustrate how water access in Old Dhaka is organized through a dense web of informal institutions that function alongside—and through—the state, compensating for infrastructural failure while simultaneously normalizing it. This article examines informal water systems in Puran (Old) Dhaka, particularly those organized through mosques and water vendors, to understand how low- and middle-income residents navigate chronic water inequality. These systems function simultaneously as a response to and a critique of the state's inability to deliver equitable urban services. Informal water practices are not merely stop-gap solutions to infrastructural failure; they are the primary mechanisms through which marginalized urban residents assert their right to water in a city whose infrastructures were never designed to serve them equitably.

Building on political ecology, this article conceptualizes informality as a form of governance rather than an absence of regulation. As TD Wilson (2011) argues, informality should not be understood as a marginal, temporary, or residual phenomenon existing outside the formal economy, but rather as a structural and enduring component of contemporary capitalism, especially in the Global South. She emphasizes that informality is actively produced through regulation, deregulation, and governance failures, rather than emerging solely from individual survival strategies (Wilson, 2011). In Old Dhaka, informal water systems are embedded within state infrastructures, shaped by unequal power relations, and sustained by historical patterns of exclusion. They reveal how governance operates through selective neglect as much as through formal provision. I conducted fieldwork to understand how people are coping with the water crisis, as no such research had previously been carried out in this area.

Utility services—including water, sanitation, electricity, and waste disposal—are essential to urban survival. Among these, access to potable water remains one of the most critical. Yet residents

[3] Fieldnotes in Old Dhaka

of Old Dhaka face recurring challenges of water scarcity, contamination, flooding, and waterlogging—conditions that have intensified in recent years (Mohuya *et al.* 2025). Low-income communities routinely pay higher prices for inferior water services than their wealthier counterparts, demonstrating that water inequality is not primarily the result of physical scarcity but of deteriorating infrastructure, exclusionary governance, and historically produced socio-spatial inequalities.

These inequalities cannot be understood without paying attention to Dhaka's colonial past. More than two centuries of colonial rule profoundly reshaped the city's relationship with water. Colonial administrations introduced modern water infrastructures not simply to improve public welfare, but to consolidate political authority, regulate rivers, and facilitate extractive economic agendas. Water was transformed from a shared resource embedded in local ecologies and customary practices into a commodified object managed by technocratic institutions (Hossain, 2020; Zillur & Lahiri-Dutt, 2011). This shift entrenched enduring hierarchies of access, limiting low-income residents' claims to water and producing an uneven urban geography that persists today.

The central argument of this article is that state institutions—particularly the Dhaka Water Supply and Sewerage Authority (DWASA)—continue to reproduce colonial-era hierarchies by privileging elite interests while systematically marginalizing low-income populations in urban water distribution. In response, residents of Old Dhaka engage in collective improvisation practices that constitute everyday forms of resistance (Scott 1985). These practices do not replace state-led water provision; instead, they operate in conjunction with it, compensating for infrastructural neglect while revealing the blurred boundaries between formal and informal governance. Through this lens, the article shows how informality simultaneously enables survival and sustains inequality, offering critical insights into the political ecology of urban water in postcolonial cities.

2. Methods

The article draws on qualitative ethnographic research conducted in Puran Dhaka between January and December 2023 as part of a PhD project at the University of Sydney (Misty, 2025). In addition to intensive fieldwork during this period, I maintained regular contact with key participants following its completion and conducted follow-up interviews via telephone. The follow-up interviews provided opportunities to clarify emerging themes, verify interpretations, and document subsequent developments related to water access and governance.

Puran Dhaka was selected because of its historical significance, ageing water infrastructure, high population density, and persistent drinking water access inequalities. Puran Dhaka is known as the "place of 52 bazaars and 53 lanes" due to its intricate network of narrow lanes and bustling marketplaces. It is filled with dilapidated buildings and a complex maze of open sewerage lines due to the absence of an underground drainage system (Haiher *et al*., 1998). Moreover, its residents suffer from a host of environmental and infrastructural challenges, including extreme traffic congestion, mosquito infestation, and severely inadequate urban amenities. The absence of open green spaces and recreational areas means that residents, especially children, lack safe places to play or spend their leisure time. Additionally, unplanned urbanization, frequent road repair works, and poorly maintained or clogged sewerage systems have resulted in perennial waterlogging and severe dust pollution during the dry season, compounding the everyday struggles of residents and reflecting broader failures in urban governance and planning (Chandan, 2022).

Much of the existing literature on Southern urbanism, however, centers on slums as the defining feature of cities in the Global South (Arabindoo, 2011; Banerjee, 2022; Gilbert, 2007). Scholars have critiqued how the cities of the Global South have been "perceived, understood, mapped,

and created" (Arabindoo, 2011: 639; Gilbert, 2007: 698) through the dominant lens of slum typologies. This prevailing focus has obscured the heterogeneity of urban experiences and dwelling practices (Banerjee, 2022), limiting the recognition of alternative or hybrid forms of residence. The relative lack of scholarly and institutional attention to Puran Dhaka was another important reason for its selection as the study site.

The primary sources of urban water supply in metropolitan areas typically include surface water, groundwater, and, in some cases, harvested rainwater (Niemczynowicz, 1999). Historically, Dhaka was famously described by colonial historian James Taylor (1840) as the "Venice of the Orient," due to its extensive network of canals, ponds, and wetlands (Ahmed, S.U., 2003; Chowdhury & Shahidul, 2011; Dani, 1962). However, rapid urbanization, unplanned growth, and an ever-increasing population have drastically altered this hydrological landscape. Surface water sources, such as lakes, ponds, and wetlands, have steadily disappeared, filled in, or been encroached upon to make way for new developments, rendering these once-abundant resources either inaccessible or severely polluted (Amin, 2014). As a result, urban residents no longer consider the remaining lakes or water bodies suitable for drinking, despite their continued use for washing or bathing.

Field observation and conversation with DWASA officials found that the primary sources of water in Puran Dhaka are the DWASA network, which includes household connections, standpipes and recently introduced water ATM booths, as well as informal suppliers such as private water vendors and mosque-based deep tube wells. None of these sources offers water free of cost except the DWASA installed standpipes. While DWASA originally installed standpipes to provide free water to low-income communities, these are rapidly being phased out and replaced by water ATMs, which require payment. Even in high-income areas, DWASA often supplies water through mobile water tanks, albeit at subsidized rates, reinforcing a tiered system of access that privileges the affluent. Thus, the notion of free and universal access to water has eroded, replaced by a commodified and stratified system of water provision that mirrors broader inequalities within the city.

The study area, Puran Dhaka (Figure 2), falls within the jurisdiction of Dhaka South City Corporation and encompasses eight administrative areas: Lalbagh, Hazaribagh, Chowkbazar, Bangsal, Gendaria, Kotwali, Wari, and Sutrapur, as shown in Figure 1 (Islam, 2012. Despite facing chronic water-related challenges, Puran Dhaka has received comparatively limited attention from government agencies, local and international NGOs, and academic researchers. This relative neglect makes it a critical yet underexamined site for investigating urban water insecurity. The selection of Puran Dhaka allows for a granular analysis of both the technical performance of water supply systems and the institutional dynamics that shape access, particularly for low-income communities. It also creates space to investigate grassroots strategies and informal practices through which residents attempt to assert their right to water.

Data were collected through participant observation, semi-structured interviews, informal conversations, and document analysis. A total of 30 (thirty) respondents were selected using a combination of snowball and purposive sampling techniques, focusing on individuals aged 15 to 70 who are actively engaged in economic activities, including both formal and informal work as well as household management. In addition, interviews were conducted with politically influential community members, such as the local ward commissioner and councilor, as well as NGO workers and government officials, to gather a broader range of perspectives and to corroborate the narratives provided by women respondents. Participant observation involved accompanying residents during water collection activities and documenting everyday water-use practices in homes, mosques, and public spaces. Interviews were recorded where consent was provided and supplemented with detailed field notes. Secondary data were sourced from published and unpublished materials, including

documents retrieved from libraries, archives, and online sources. Data were analyzed thematically using an iterative coding process informed by political ecology and postcolonial theory, focusing on the relationships between infrastructure, power, inequality, and informal water practices. Ethical approval for the research was granted by the University of Sydney Human Research Ethics Committee, and all participant names used in this article are pseudonyms.

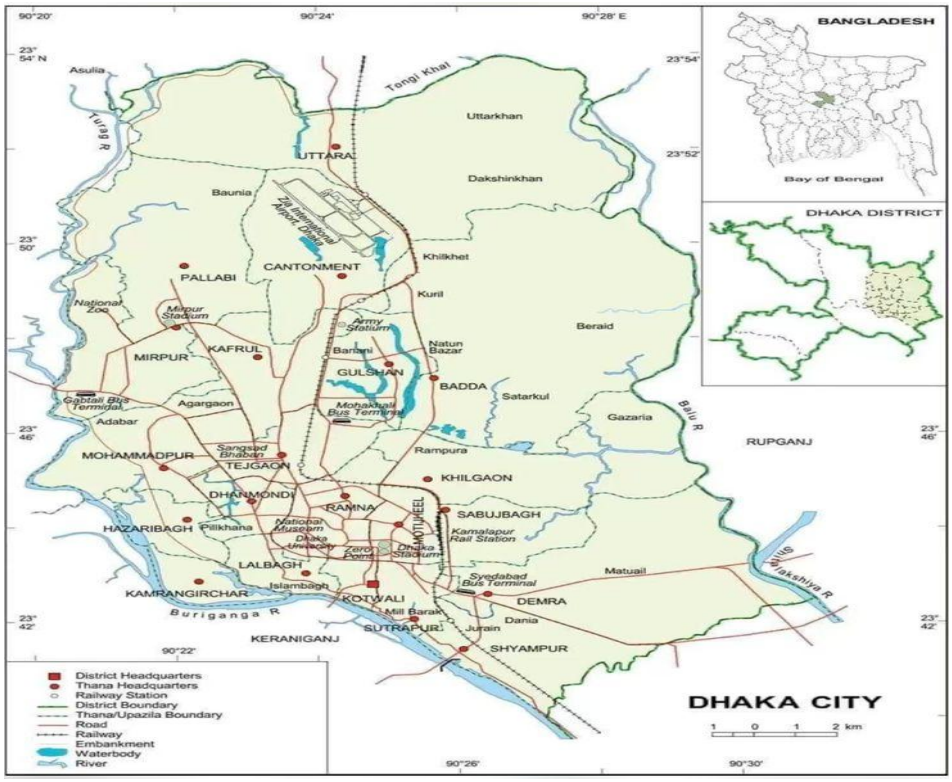

Figure 1: Map of Dhaka city. Source: Islam, S. (2012)

3. The political ecology of unequal urban water access

Political ecology foregrounds how water scarcity is frequently produced through social and political processes, rather than arising from natural limits alone (Swyngedouw, 2009; Linton & Budds, 2014). This perspective is particularly important in postcolonial contexts such as Bangladesh, where colonial-era infrastructures, legal regimes, and institutional arrangements continue to shape contemporary struggles over access and control. In cities such as Dhaka, these historical legacies intersect with neoliberal urban development and climate change, reproducing water insecurity in ways that disproportionately affect low-income communities. Political ecology therefore provides a critical lens for examining how power operates through water—not only in its distribution and governance, but also in its material forms and social meanings.

Water distribution in Dhaka is not governed solely by hydrological processes but by hydro-social dynamics that reflect political decisions about how problems are defined, which solutions are prioritized, and whose needs are recognized (Roth *et al*., 2014). Access to water is mediated through

intersecting structures of power, including class, gender, and social position, producing uneven experiences of water insecurity even within the same neighborhoods or households (Swyngedouw *et al.,* 2002; Budds & Sultana, 2013; Sultana, 2011). These disparities reveal that water insecurity is not simply a technical or infrastructural problem, but a matter of social justice and political marginalization.

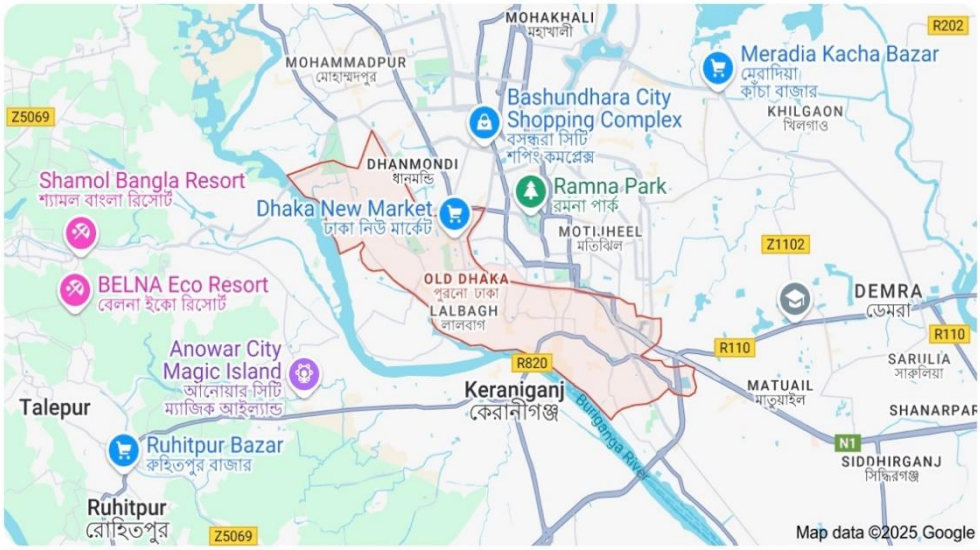

Figure 2: Puran Dhaka (marked in red). Source: Map of Old Dhaka (2019)

Political ecology conceptualizes these dynamics through the notion of the hydro-social cycle, in which water and society are co-produced (Swyngedouw, 2009; Linton & Budds, 2014). Transformations within this cycle are never neutral: they benefit certain groups while disadvantaging others. As Truelove (2019) argues, water serves as a lens through which broader patterns of urban exclusion become visible, particularly in cities where informal settlements and low-income populations are systematically marginalized from state provisioning systems. Comparative research from Mumbai, Accra, Guayaquil, and Flint, Michigan demonstrates that chronic urban water insecurity is rarely the outcome of ecological scarcity alone; rather, it reflects deliberate political and social processes that privilege some population while rendering others invisible or disposable (Truelove, 2019).

In Dhaka, the political ecology of water helps to explain why scarcity disproportionately affects the urban poor, even in areas located close to state infrastructure. During fieldwork in Puran Dhaka, residents repeatedly described how infrastructural neglect shapes everyday experiences of deprivation. One of my interlocutors explained that when communities complain about acute shortages[4], DWASA officials commonly propose the installation of deep tube wells (DTWs) as a temporary remedy and ask residents to provide land for the facility. In an area as densely built and land-scarce as Puran Dhaka, however, such a requirement renders the proposal unworkable; the

[4] Fieldnote from Old Dhaka

promise of intervention effectively becomes a mechanism for deferral. This response, however, also fails to address the underlying problem: the area's primary water pipes—over 140 years old—have not been repaired for decades and remain fractured in multiple locations. As a result, households receive minimal water, often visibly contaminated and foul-smelling, particularly during the summer months when demand peaks. As she remarked, "We can't even wash our faces with that water."[5]

By contrast, water infrastructure in Dhaka's newly developed and affluent neighborhoods is maintained with speed and efficiency. In affluent neighborhoods such as Gulshan, Banani, Baridhara, and Dhanmondi, nearly all households are connected to water and sewerage services, whereas coverage in lower-middle-income areas such as Rayer Bazar, Bashabo, Jurain, and Mirpur ranges between 50 and 75 per cent (Siddiqui *et al.,* 2000). Low-income zones—including Mirpur, Hazaribagh, Mohammadpur, Kafrul, and Tejgaon—are characterized by ageing infrastructure, frequent leaks, minimal maintenance, and recurrent service disruptions. By contrast, Gulshan experiences only about ten reported leaks per month, underscoring stark infrastructural inequalities (Shams *et al.,* 2016). This disparity is evident even within individual buildings. For example, Marjina Begum,[6] a landlord interviewed during fieldwork, could afford bottled drinking water delivered directly to her home, while her tenants—far less financially secure—struggled daily to secure sufficient water for basic needs. Such cases illustrate how unequal access is structured not only across neighborhoods but also within shared living spaces, reinforcing broader patterns of urban inequality.

The intersection of wealth and authority is further illustrated by Hazi Sheikh Kamal, a businessman who has provided free water through a privately installed DTW for over fifteen years. Residents expressed gratitude, contrasting his initiative with other affluent households that drilled wells exclusively for private consumption. Although such actions mitigate immediate hardship, they also reveal how the capacity to exit failing public systems is unevenly distributed. Scarcity thus becomes a socially produced condition shaped by regulatory loopholes, selective enforcement, and infrastructural prioritization that favor the powerful (Swyngedouw, 2009; Truelove, 2019). Responsibility for provision shifts from guaranteed entitlement to personal resources, patronage, or benevolence.

This pattern intensified with governance reforms framed under the language of "good governance." The restructuring of DWASA through the WASA Act of 1996 promoted autonomy and corporate management as remedies to rapid urbanization and service deficits (DWASA, 2025). This reform was promoted as a technical solution to urban crises such as rapid urbanization, service delivery failures, and infrastructural deficits. Scholars, however, argue that good urban governance has frequently been implemented through neoliberal frameworks that privilege efficiency, market-based mechanisms, and public–private partnerships, while obscuring power relations, informality, and entrenched inequalities. As a result, governance reforms often depoliticize urban water provision by treating access as a managerial problem, rather than as a site of historical injustice and ongoing injustice and ongoing material struggle (Obeng-Odoom, 2012, 2012b, 2013, 2017). Such neoliberal policy interventions resonate with De Soto's argument that the entrepreneurial potential of the informal economy is constrained by excessive state regulation and bureaucratic barriers (Wilson, 2011).

In practice, DWASA's governance remains highly centralized. Decisions about water allocation and service delivery are made by a small circle of bureaucrats and technical experts,

[5] Fieldnote from Old Dhaka

[6] Fieldnote from Old Dhaka

excluding both staff and the urban poor. Interviews with officials and NGOs confirm that agenda-setting privileges elite stakeholders while marginalizing low-income residents, echoing patterns established under British colonial administration, where urban civil bodies concentrated authority among elites (Anand, 2017). This exclusionary governance produces systemic inequities in access, reinforcing social hierarchies embedded over centuries.

4. Informal water networks as sites of resistance and governance

Early conceptualizations of the informal sector, such as the International Labor Organization's Kenya Report, framed informality as a residual sphere characterized by ease of entry, small-scale operations, labor-intensive technologies, and weak regulation (ILO, 1972). While this categorization was intended to inform policy interventions, subsequent critiques have shown that it also functioned as a political tool through which states could evade responsibility for service provision to the urban poor (Bromley, 1979). Rather than existing outside the state, informal economies often emerge through regulatory neglect, selective enforcement, and deliberate political accommodation.

From this perspective, informal practices are not merely compensatory mechanisms that emerge when formal systems fail. Rather, they are produced and shaped within governance arrangements that determine who can access resources, under what conditions, and at what cost. Consequently, portrayals of informality as a simple "gap-filling" mechanism (Rondinelli & Kasarda, 1993), or De Soto's (1989) influential characterization of informal activities as having licit ends pursued through illicit means, underestimate the extent to which the boundaries between legality and illegality are themselves socially and politically constructed. De Soto argued that excessive state regulations and bureaucratic barriers prevented the poor to exercise their entrepreneurial capacity. His view of informality primarily as a regulatory problem has been widely criticized by the political ecologists and urban scholars as it overlooks the power relations, inequalities and governance practices (Roy, 2005, p.148; Gilbert, 2002, p.2).

A political ecology approach pushes this argument further. Informality becomes integral to the making of hydro-social order. The rapid expansion of water vending across the Global South during the era of privatization and cost recovery in the 1990s did not represent a withdrawal of the state; it reflected a reconfiguration of state power that commodified access while outsourcing risk to marginal populations (Sarkar, 2020). In Dhaka, residents secure water through negotiations embedded in what Hackenbroch and Hossain (2012) call the survival politics of public authorities, where tolerance, patronage, and intimidation operate simultaneously.

Everyday strategies such as purchasing from vendors, storing rainwater, or collecting from mosques therefore express both agency and constraint. They resonate with Appadurai's (2004) capacity to aspire, Bayat's (1997) quiet encroachment, and Gandy's (2008) microspheres of negotiation, yet they also reveal the limits of these practices in transforming structural exclusion. Informal actors—*dalals (*brokers), *mastaan* (local strongmen), religious institutions, neighborhood leaders—are deeply entangled with bureaucratic authority. Their presence reflects a longer genealogy of mediated rule in which governance is exercised through delegated intermediaries rather than universal provision. Informality, in this sense, is not temporary; it is institutionalized.

This entanglement becomes visible in the differentiated ways regulations are applied. As Roy (2009) argues, informality is calculated: elite violations are regularized while the survival practices of the poor remain perpetually vulnerable. Yiftachel (2009) similarly observes that legality is unevenly distributed, functioning as a resource monopolized by those with political leverage.

Fieldwork in Puran Dhaka illustrates how this operates in practice. Dilara, a small-scale vendor, purchased water from a mosque and resold it locally. Her ability to operate depended on routine payments of *chanda* (subscription) to local strongmen and police. When a newly posted constable—reportedly aligned with a rival trader—threatened to confiscate her equipment, she shifted to door-to-door delivery. The move reduced direct harassment but intensified labor and uncertainty. Meanwhile, larger businesses with political backing continued to violate regulations openly without sanction. Dilara's experience demonstrates that informality is not a fixed legal status. It is a condition produced through everyday decisions about whose claims are protected and whose remain revokable.

Comparable patterns appear elsewhere. Nowak's (2019) study of Maputo shows vendors operating in a permanent grey zone, essential yet unauthorized, visible yet precarious. In Dhaka, vendors perform a similar function: they compensate for unreliable DWASA supply while being excluded from formal planning and subject to extortion.

Through a political ecology lens, these networks are simultaneously infrastructures of survival and technologies of rule. They mitigate the consequences of state neglect while reproducing dependence on patronage, discretionary enforcement, and personalized authority. Informality, therefore, is not evidence of governance failure; it is a constitutive feature of a hydro-social regime in which inequality is continuously made and managed.

5. Negotiating power and access: everyday water governance in old Dhaka

Drawing on ethnographic fieldwork, this section examines the informal strategies through which low-income residents negotiate access to water in conditions of chronic infrastructural exclusion. In Puran Dhaka, informal water vending constitutes a central component of everyday survival and an integral part of the city's water governance landscape. One common sight is trucks loaded with water gallons operated by hawkers or water vendors, who deliver water directly to households. These vendors typically source water from wells, commercial connections, or household piped networks, operating from small kiosks or through mobile distribution systems.

Consumers may purchase water directly at these kiosks or rely on vendors who transport it using rickshaws, bicycles, pushcarts, or motorized vehicles. These decentralized and labor-intensive arrangements contrast sharply with large private or DWASA-operated tankers, which primarily serve wealthier neighborhoods and households with the capacity to store large volumes of water. The coexistence of these systems reveals a bifurcated urban water regime in which access is structured by class, infrastructure, and political influence.

Rather than operating outside state authority, these informal practices are deeply entangled with formal governance structures. Vendors rely on tacit permissions, selective enforcement, and negotiated relationships with local officials, police, and intermediaries to sustain their operations. In this sense, informal water vending does not merely compensate for state failure; it actively participates in the everyday governance of water by redistributing supply through socially mediated channels. Access to water in Dhaka is thus not determined solely by physical infrastructure or hydrological availability, but by residents' capacity to navigate a fragmented governance environment shaped by power, regulation, and inequality.

Local mosques

During an interview, Marjina Khatun explained that her family does not rely on water vendors but instead receives drinking water from the local mosque. Their domestic aid collects two 5-liter gallons daily, sufficient for their small household. They pay 600 BDT (approximately US$5) monthly

for the water and an additional 50 BDT (less than a USD) for the assistance. This practice is common across Dhaka, where religious institutions—especially mosques—receive special government permission to install DTWs and distribute water. Due to Dhaka's rapidly declining water table, such permissions are tightly regulated, yet mosques remain exempt and operate without restrictions. In areas like Puran Dhaka, approximately 20 mosques across neighborhoods such as Shahjalalbagh, Rahmathbagh in Dania, Nabinbagh, Nobarun Gali, and parts of Shonir Akhra and Shyamoli provide water via DTWs (Alam, 2019). Many residents, despite having DWASA piped connections, prefer mosque water due to complaints of contamination, odor, and irregular supply from the formal network. As one-woman collecting water remarked, "Even when household water looks clean, we don't trust it."[7] According to Mrs. Khatun, the mosque tap is open twice daily, from 7:00 am to 11:30 am and 4:00 pm to 10:30 pm, ensuring reliable access for the community.

Marjina Khatun, the owner of a five-story building, resides on the top floor along with 12 other tenant families. When I inquired further about the household water collection system, she offered to take me to one of her tenants' apartments on the fourth floor. There, I met Sheuli Begum, a woman in her mid-fifties who lives with her two sons and a daughter. Marjina had earlier mentioned that Sheuli's husband had passed away the previous year while working in Malaysia, leaving the family in a precarious financial situation. Since then, Marjina has been offering support to help them manage. Sheuli welcomed us into her modest flat, where we sat on a small sofa in the cramped living room. Several water gallons and buckets were lined up in the narrow corridor, indicating the household's daily struggle to secure water. As we began our conversation, Sheuli shared that her sons had taken up part-time work alongside their studies to help sustain the family after their father's demise.

Upon learning the purpose of my visit, Sheuli Begum explained that the water supply in her building is highly irregular, typically available only late at night or in the early hours of the morning. To manage this, they always keep the tap open with a bucket placed underneath and remain alert throughout the night to collect as much water as possible. However, the poor quality of this water renders it unsuitable for drinking or cooking; therefore, it is reserved for cleaning, bathing, and laundry purposes. Her sons, who leave for work early in the morning, are unable to fetch water from the local mosque, and she does not feel safe sending her 15 year-old daughter alone. Unable to afford paid help, Sheuli walks to the mosque herself to collect two five-liter gallons of water each day. Although the mosque is nearby, carrying the heavy gallons back leaves her exhausted. Her daughter usually waits at the building entrance to help carry them up the four flights of stairs. Watching Sheuli recount this daily struggle, I could see the toll it had taken, both physically and emotionally.

To conserve their limited supply, Sheuli Begum and her daughter have begun drinking less water so that her sons—who bathe at work and occasionally bring home a gallon of water—can have more. Sheuli also spoke about how repeatedly climbing four flights of stairs is affecting her health. When I asked why she had not filed a complaint, she replied, "I am a widowed tenant without money. Who would listen to me?" She emphasized that only landowners have the authority to raise such issues with officials. Her financial constraints also prevent her from relocating to areas with a more reliable water supply. As I was leaving, she made a quiet but powerful request—that I write about the struggles of families like hers so that those in power might finally take notice of their hardship and act to improve water right in her community.

After leaving Sheuli Begum's flat, I asked Marjina Khatun to take me to the nearest mosque where residents collect water. We arrived at Al Aqsa Masjid around 7 pm. There, I saw a man seated

[7] Fieldnote from Old Dhaka

at a table (Figure 3), recording the number of water gallons being distributed and collecting payment. He introduced himself as Belal, the mosque's *Muazzin,* who manages the water distribution on behalf of the mosque. Belal explained that the mosque incurs approximately 50,000 BDT (approximately US$409) in monthly electricity bills and relies solely on donations and subscriptions from local elites. To sustain operations, they charge residents a small fee for water. When asked about his earnings, he explained that his salary as a *Muazzin* is minimal, so he supplements his income by working as a money collector and offering Quran lessons to children in the neighborhood.

I spoke with several individuals collecting water from the mosque and found that nearly all of them were satisfied with the water quality. They reported that the water was clean enough to drink without boiling and expressed appreciation for the mosque's support, despite having to pay a small fee. In contrast, they voiced strong dissatisfaction with the DWASA supply, describing it as unfit for drinking, bathing, cooking, or even cleaning. One interlocutor, Junayed (Figure 4), shared that using DWASA water for laundry would turn white clothes black. He expressed deep gratitude for the mosque's role in providing clean water, noting that without it, their lives would be even more difficult. When I explained the purpose of my fieldwork, Junayed willingly posed for a photograph and earnestly asked me to take steps to improve their water situation, assuming I had the authority to make a difference.

Figure 3: Water collection practice in Puran Dhaka local mosque. Source: Author

Figure 4: Junayed collecting water from a local mosque for his household. Source: Author

Among the crowd, I met Dilara, a water delivery worker. She and her husband, who drives the rickshaw carrying the water gallons, have been in this line of work for the past five years. Together, they deliver approximately 30 gallons of water daily, earning around 4,500 BDT (US$37) monthly. Dilara shared that no one in their *moholla* (neighborhood) drinks directly from DWASA taps due to poor water quality. Water delivery is physically demanding, especially in buildings without elevators, where they must carry heavy gallons up multiple flights of stairs. The work becomes even more grueling during hot or rainy weather. During monsoon floods, her husband often struggles to pull the rickshaw, and Dilara helps him push it. They also collect their household water from the same mosque. Despite the hardship, Dilara was satisfied with the water quality.

Marjina Khatun informed me that the mosque committee comprises locally influential and politically connected elites. Each household in the area contributes a monthly subscription of BDT 200 (less than US$2), which the committee uses to manage mosque operations. For larger expenses, they rely on donations from wealthy community members. During my fieldwork, the committee was

headed by businessmen affiliated with the ruling political party. However, in a follow-up phone conversation, Marjina noted that after the change in political power on August 5, 2024, shifts occurred within the mosque committee and other local institutions.

Although initially difficult to contact, I eventually spoke with Mr. Barakat, a current committee member. He explained that the mosque receives no government funding to cover the salaries of the *Imam* and *Muazzin*, or to maintain the facility. Recognizing the community's urgent needs, the committee secured approval to install a DTW, covering the setup cost themselves. Revenue from water sales is used to cover all mosque-related expenses, including salaries, electricity, maintenance, and some social welfare initiatives. When asked about financial accountability, Mr. Barakat confidently stated that all income and expenditure are overseen collectively by the committee, leaving no room for mismanagement or corruption.

The initiative by the mosque committee to support residents in the face of state-led inequality and infrastructural neglect resonates with Prouse's (2018) notion of *digital auto-construction*, an expansion of Holston's (1991) concept of *auto-construction*. Holston originally described how the urban poor in the peripheries of Brasília and São Paulo responded to exclusionary state planning by building their housing and infrastructure. The "auto" prefix signifies this grassroots creation of urban space in the absence of state support. Holston (1991, p. 448) argued that through this process, residents not only construct physical infrastructure but also reconfigure their self-perceptions, developing self-images of competence that resist historically imposed narratives of inferiority. However, as both Holston and Prouse emphasize, such acts of infrastructural improvisation are not politically neutral; they are socially, spatially, and politically complex processes that may either foster new political subjectivities or reinforce existing hegemonic structures.

Auto-construction amidst resources crisis is a common mechanism in many other cities. In the face of delayed and overcrowded trains in Tokyo, commuters develop workarounds—using the time to get work done on their laptops, or to rest or text friends, carrying scooters they can use to cover short distances not reached by train—illustrating how improvisation becomes a routine method of adaptation (Fisch, 2018). An ethnographic study in Southeast Asia by Max Hirsch (2016) documented how air passengers responded to the shortcomings of budget airlines by forming dense, decentralized support networks involving ticket vendors, private taxi operators, and airport touts. These ad hoc arrangements—what Kleinmann (2019) refers to as "lighter systems"—operate parallel to state infrastructure, serving populations that the formal system fails to accommodate, often beyond the state's regulatory reach (Gordillo, 2019).

Similarly, the local mosque committee engaged in a form of *auto-construction* by establishing an improvised water delivery system to support the community while sustaining mosque operations. This initiative also created a livelihood opportunity for the *Muazzin,* who—despite prevailing cultural expectations in Bangladesh that discourage religious figures from engaging in commercial activity—was able to earn a supplemental income by managing water distribution from within the mosque premises. This dual role enabled him to fulfill his religious commitments while meeting his economic needs. Locals expressed gratitude for the initiative, often contrasting it with the state's inadequate response to the water crisis. During peak summer months, residents wait for hours to collect water, underscoring the importance of such community-led solutions. However, the mosque committee—comprising mainly local elites—also exerts both symbolic and practical power by positioning itself as a benevolent authority. While there is little financial transparency or auditing, residents, burdened by chronic scarcity, tend to overlook potential misuse of funds in favor of continued rights to water.

The vignette from my fieldwork helps illustrate this dynamic. During a follow-up phone conversation, Marjina Khatun informed me that the newly formed mosque committee had raised the price of water. While the initial rate was relatively affordable, the committee justified the increases by citing rising electricity and maintenance costs. As the initiative remains a local, privately managed system—dominated by politically influential figures—its operation also reproduces local hierarchies. Residents, while dependent on the mosque's water, must maintain respectful relations with committee members to ensure continued access.

As previously discussed, the British colonial administration strategically encouraged informal service systems for the urban poor to ensure basic order without full inclusion. A parallel can be drawn to the state-led development of Brasília's periphery documented by Holston (1991), which accommodated construction workers, low-ranking employees, and informal laborers while excluding them from central urban zones. Similarly, in Dhaka, state-led investments are increasingly favoring the development of "new" Dhaka, with modern infrastructure—spaces that are unaffordable for the urban poor. Meanwhile, areas like Puran Dhaka continue to absorb low-income populations, effectively reproducing spatial and social exclusion under the guise of urban progress.

Water vending businesses

For more than three months of regular field visits to Puran Dhaka, I became a familiar face in the neighborhood, particularly among local women. During one visit, an informant offered to take me to a private water vendor's office after I expressed curiosity about the trucks, I often saw delivering water gallons (jars) to homes and offices in the area (Figure 5). The vendor operated out of a small, newly constructed one-story building. In the front room, a man was seated at a desk surrounded by cabinets. I introduced myself and explained the academic nature of my research. Initially cautious and mistaking me for a journalist, he eventually allowed a supervisor to show me around, though I was not permitted to take any photographs. According to the vendor, they held government authorization to install a DTW and sell water commercially. He stated that they paid an annual fee for water extraction rights and that their purification system was subject to regular government inspections. I was shown the purification setup and observed rows of gallons waiting to be filled and dispatched via trucks to various destinations.

Private water vending businesses are widespread in Dhaka, catering primarily to offices, corporate establishments, banks, retail outlets, and affluent households due to their relatively higher prices compared to other sources. One of the earliest and most successful examples is *Tiash*, a pioneering private water vendor that began operations in 1997 in Puran Dhaka. Starting with just 53 customers, *Tiash* rapidly expanded to 1,500 consumers within a year, remarkably without any formal advertising or marketing (Haiher *et al.* 1998). The company delivered water in containers to homes and private offices, with deliveries arranged through advance orders. Due to the scale of their operations and the volume of water required, *Tiash* established their extraction and processing facility outside Dhaka, transporting the purified water into the city.

Figure 5: Gallons used in water delivery by private vendors, Source: Author

Another water vending business available in Puran Dhaka is the water ATM booths operated by DWASA (Figure 7). Interactions with the local people of Puran Dhaka revealed that previously many standpipes were installed in various locations, allowing people to collect water for free easily; however, this is no longer the case. DWASA is supposed to ensure pure drinking water for all, but their free-standing water dispensers are being replaced with paid water ATM booths. DWASA has set up 297 ATM booths across the capital in collaboration with the US-based Drink Well organization. Together, they plan to set up 500 ATM booths to provide clean water. People must pay 80 paise (less than a US cent) per liter and can collect water from 8:00 a.m. to 4:00 p.m. Consumers need an RFID card at the cost of 50 BDT (less than a USD), like a bank's ATM card, which they can insert into the machine to automatically dispense clean water, and if the card runs out, they can reload it from the booth (Islam, 2023).

In Dhaka, nearly 300,000 families collect water from the booths, and 1,200,000 liters of water are sold daily from these booths (The Business Standard, 2023). The ATM booths directly extract groundwater and use a purification process. People can drink this water directly, so the demand is increasing daily. The booths were initially installed for the city's low-income residents, but now, even middle-income people collect water from them. One of the informants from a private water delivery business I had previously interviewed told me that DWASA ATM booth storage gallons are not cleaned regularly. Therefore, the clean water gets contaminated. Officials claimed they are cleaned

regularly, but I found a different picture. When I visited one of the ATM booths, I noticed that the environment was poorly organized and in need of sweeping and cleaning, including the taps and gallons (Figure 6).

Figure 6: DWASA Water ATM booths, Source: Author

While DWASA promotes the water ATM initiative as a solution to urban water insecurity, many human rights organizations have criticized the scheme for deviating from the agency's fundamental responsibility—to ensure equitable right to clean drinking water for all residents of Dhaka. Given DWASA's ongoing struggle to meet rising demand with limited infrastructure and financial resources,

critics argue that such commercial ventures risk institutionalizing inequalities and may further incentivize profit-seeking behavior over public service delivery.

Figure 7: DWASA Water ATM booths, Source: Author

There is growing concern that these ATM initiatives, rather than strengthening the overall water supply system, could entrench corruption and irregularities. By opening new avenues for revenue generation, DWASA may prioritize revenue over broader structural improvements to the water infrastructure, instead shifting its focus to maximizing returns from privatized mechanisms. Moreover, residents fear that individuals may hoard water from ATM booths and resell it at inflated prices, further exacerbating inequality. Field conversations revealed that the cost of ATM-dispensed water had nearly doubled within a year—from 40–45 paise (BDT 0.40–0.45; approximately US$0.005–0.006) per liter to 80 paise (BDT 0.80; approximately US$0.010)—raising questions about transparency and affordability.

The pricing model also raises questions of fairness and double taxation. While DWASA charges BDT 16 (less than a US$) per 1,000 liters of piped water at the household level, the effective rate through ATM booths is significantly higher, suggesting that citizens are being charged twice for a basic necessity. During an interview, a local zonal engineer of DWASA confirmed ongoing plans to expand the number of ATM booths in densely populated areas. However, such moves increasingly reflect a gradual shift toward the commodification of water, undermining DWASA's mandate and contradicting the constitutional promise of water as a public good and a human right in Bangladesh.

Household resellers and private initiatives

Another informal strategy through which low-income residents secure water in Puran Dhaka is reliance on small-scale private vendors. These vendors typically operate within low-income neighborhoods and cater to households that opt for the cheapest available sources, avoiding more expensive commercial suppliers. Prices vary according to the purification methods and technologies employed. In some cases, vendors use rudimentary techniques—such as boiling, basic filtration, or purification tablets—to improve the appearance of water quality and justify its sale. Attempts to trace the origins of vendors' water sources were often met with evasive responses. Nonetheless, field observations suggest that water is commonly drawn from household connections, shared hydrants, or direct taps from the utility network, frequently without formal purification.

I first learned about these vendors through conversations with a couple living in a privately owned informal settlement. The husband worked as a street hawker, while the wife was employed as a domestic helper for nearby households. They welcomed me into their modest dwelling and described daily routines marked by long working hours, from early morning until dusk. Much of their income was remitted to their home village, where their children lived with grandparents.

Given these time constraints, they explained, queuing at nearby mosques for drinking water was impractical. Instead, they relied on bottled water purchased from a private vendor who delivered directly to their home. Although this option was relatively expensive, they considered it essential for safeguarding their health. A few years earlier, the husband had suffered a severe and prolonged episode of diarrhea that rendered him unable to work for several days. A physician attributed the illness to contaminated drinking water. Since then, the household had relied exclusively on vended water for drinking and cooking.

Their dwelling was not located near any mosque or DWASA standpipe, further limiting alternative sources of potable water. As a result, the couple carefully rationed their resources, reserving purchased water for consumption while using DWASA tap water—often visibly contaminated and foul-smelling—for cleaning and bathing. When asked about the odor of the tap water, the wife responded with quiet resignation: "We just have to manage with what we have." Her response encapsulates the everyday compromises through which low-income residents navigate a deeply unequal urban water regime.

As the conversation unfolded, several neighbors gathered, most of whom worked as domestic helpers, garment workers, day laborers, or small-scale vendors. For these households, financial constraints strongly shaped water access strategies. While DWASA water was cheaper than vended alternatives, its poor quality frequently compelled residents to incur additional costs for safer water. In contexts of urban precarity, time itself emerged as a scarce resource, further complicating access. What became apparent was not merely a question of affordability, but one of survival through the careful rationing of water quality. Social stigma also played a significant role. Some residents associated the use of DWASA water for drinking and cooking with shame. During the discussion,

several women openly criticized a nearby household that relied on tap water for consumption, socially ostracizing the woman from that family, who remained visibly isolated and declined to speak. This interaction illustrates how water insecurity is not only material but deeply social, producing hierarchies and exclusions within already marginalized communities.

Alongside private vending, another informal system observed in the study area was household-level water reselling, often structured through non-monetary exchanges between neighbors. Because only a portion of residents had direct connections to the municipal network, many relied on neighbors—typically those with larger storage capacity or more reliable connections—for access. Among low-income residents, water was frequently obtained from relatively affluent households. According to Bangladeshi social norms, demanding payment from economically disadvantaged neighbors is considered inappropriate. Instead, water is often exchanged for labor or services: poorer neighbors may assist with household chores such as washing dishes, sweeping, or doing laundry. Domestic workers, for example, commonly collect water from or bathe at the homes where they are employed.

These arrangements, however, are selective and conditional. Access depends on social proximity, perceived respectability, and ongoing reciprocal obligations, revealing the fragility of informal water rights. Rather than signaling generosity alone, such exchanges reflect the precarious moral economies through which water access is negotiated in the absence of reliable state provision.

Improvised strategies for water access

Besides the above-mentioned practices, residents of low to middle income communities often rely on everyday improvisations to secure access to water. These practices include drawing water from leaking DWASA pipelines where formal connections are unavailable, sharing limited water sources with neighbors, and negotiating access through landlords, local intermediaries, and public officials. Meanwhile, some middle-class households install suction pumps to draw water directly from municipal mains, despite the practice being illegal. Such modifications, occasionally undertaken with the tacit approval or involvement of DWASA personnel, illustrate the entanglement of formal and informal water systems. They also reflect broader forms of improvised governance through which residents seek to secure essential services within a structurally unequal and exclusionary urban environment.

In the study area, the strategies residents employ to access water are strongly shaped by their socio-economic position. As Sultana (2011) argued, control over water is primarily determined by ownership of land and technology; however, the right to water is shaped by broader socio-political and relational dynamics. In this sense, it is essential to distinguish between control and access. While some individuals or groups possess both, others may only have access without any real control over the resource. Examining these practices provides deeper insight into how structural inequalities shape the everyday improvisations that different groups employ to access water, depending largely on their financial capacity. In Bangladesh, financial status plays a far more decisive role than religion or ethnicity in determining access to water.

One of the most widespread strategies for accessing water in Dhaka is the use of suction pumps. Despite being illegal, suction pumps are commonly employed across socio-economic groups to draw water directly from the main supply lines. Since the residents rely on sufficient pressure to fill their underground reservoirs and pump water to overhead tanks, they began puncturing holes into the pipelines. They connected small PVC pipes to divert more water directly to their homes, damaging the main infrastructure in the process. This practice not only damages the pipes—causing fractures

that allow dirt and sewage to enter the system—but also leads to widespread contamination. Although local linemen are responsible for identifying and penalizing such infractions, many overlook them in exchange for bribes. During fieldwork, I encountered numerous households operating multiple suction pumps, yet both DWASA officials and residents were hesitant to speak openly, fearing potential consequences if the issue were made public.

These ad-hoc responses are symptomatic of institutional failure, where the formal governance mechanisms are either absent, ineffective, or complicit. Residents, in turn, rely on informal channels to ensure the delivery of services. Thus, the struggle for water becomes not only a technical issue but also a negotiation of power—where "pressure" is both a hydraulic and socio-political term—revealing the deep entanglement of governance, inequality, and infrastructure in urban water systems (Anand, 2017). A political ecology perspective does not consider the struggle for water merely as a technical issue of infrastructure and supply but also as a negotiation of power.

Another strategy frequently used by all groups of people is the informal arrangement involving corrupt government officials, highlighting how state actors often misuse their bureaucratic authority for personal gain. This pattern mirrors practices in other postcolonial cities, such as Mumbai, where street vendors routinely pay *hafta* (bribes) to operate (Anjaria, 2006). A telling example from my fieldwork illustrates how informal negotiations substitute for formal procedures: an NGO official recounted how a colleague faced prolonged delays while following the formal process to secure a DWASA water connection. Upon learning of this, the informant introduced him to a lineman and advised him to make a payment upon completion. The connection was installed promptly after a bribe of BDT 1,000 (around US$12) was paid—an amount the lineman later expressed dissatisfaction with, stating that he typically charges more. Although the NGO background may have moderated his response, the interaction highlights how personal networks and unofficial payments are often essential for navigating essential services.

Similarly, politicians play a pivotal role in facilitating marginalized communities' right to water, often in exchange for votes and political allegiance. Many of my interlocutors, particularly residents of private slums, reported voting for candidates who promise tangible benefits to their groups. While such promises are frequently forgotten after the election, during campaign periods, politicians attempt to demonstrate responsiveness by facilitating connections to essential services. Beyond voting, slum residents are mobilized to participate in political rallies and processions, creating the illusion of broad grassroots support. As Anand (2011, p. 551) aptly observes, "Elected representatives are often evaluated and re-elected based on their success at extending urban infrastructure (water, electricity, and roads) into their settlements."

This dynamic reveals a clientelist exchange, where infrastructure becomes a political tool rather than a guaranteed right. The behaviors of local politicians and complicit bureaucrats can be understood through the lens of "insecurity and dependency relations" (Hackenbroch & Hossain, 2012), where both the state and the urban poor operate within systems of mutual but asymmetrical reliance. In addition to leveraging political patronage, marginalized groups access water through kinship networks, support from local NGOs, and collective action strategies that reflect broader patterns of improvisation and negotiation in the context of urban informality.

In conversations with residents waiting in queues outside local mosques, many described the strategies they employed to cope with poor water quality. A common practice was to store DWASA water in buckets or large containers and allow sediment to settle before carefully drawing cleaner

water from the surface. Others added *fitkari* (Potassium Alum[8]) to improve water clarity for household tasks such as washing, cleaning, and, in some cases, cooking. Nevertheless, most residents avoided drinking DWASA water unless no alternative source was available.

When asked whether they boiled water to make it safe for consumption, many respondents explained that they lacked a regular household gas connection or could not afford the additional fuel costs. As a result, they preferred to reserve available gas for cooking meals rather than boiling water. During fieldwork, I did not observe the use of household water filtration systems among low-income households. Financial constraints, limited living space, and the recurring costs of maintenance appeared to make such technologies inaccessible for many residents.

In contrast, middle- and high-income households generally relied on commercially available water filtration systems. Many middle-income families reported boiling water before passing it through household filters as an additional precaution. Wealthier households often used more sophisticated filtration technologies, including systems directly connected to the municipal water supply. These differences illustrate how socio-economic status shapes not only access to water but also the capacity to improve its quality. The uneven distribution of such technologies reflects broader inequalities in the capacity to secure safe drinking water within Dhaka's urban water regime.

6. Conclusion

In the postcolonial era, entrenched inequalities in water access have not only persisted but, in many cases, intensified. Governance frameworks inherited from the colonial period have facilitated the proliferation of informal systems, which serve dual purposes: they enable marginalized populations to access essential resources, such as water, while simultaneously preserving state authority by diffusing dissent. Although the United Nations formally recognizes water as a fundamental human right, rights-based frameworks tend to focus narrowly on physical access, often neglecting deeper issues of power, redistribution, and control over water resources (Obeng-Odoom, 2012). Without addressing structural inequalities, political interests, and institutional accountability, such rights discourse risks depoliticizing water governance and reinforcing existing socio-economic injustices rather than achieving substantive water justice (Obeng-Odoom, 2012).

Over time, low-income residents in urban contexts such as Puran Dhaka have developed a range of improvised strategies to assert their right to water and other essential services. These include manipulating leaky pipes, deploying suction pumps, bribing corrupt officials, and leveraging political, social, or kin-based networks. Such practices operate alongside the informal provisioning provided by water vendors, local mosques, and household-level resellers, existing in parallel to the formal system managed by DWASA.

These informal practices are not merely temporary stopgaps that compensate for state failure; rather, they persist with the strategic tolerance—or even tacit support—of state institutions. Consequently, the informal sector has become an integral, albeit unregulated, component of urban water governance. Given the widespread reliance on, and monetization of, these services, there is an urgent need for mechanisms that regulate the informal sector to ensure that all paying users, regardless of socio-economic status, receive safe and reliable drinking water.

[8] A type of chemical compound that is commonly used in water purification (Helmenstine, 2022).

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