

Policy Brief

A Wasted Landscape

Delhi's Bhalswa
at the Intersection of
Urbanism and Ecologies

Gunraagh Singh Talwar

Water Seekers' Fellow 2021





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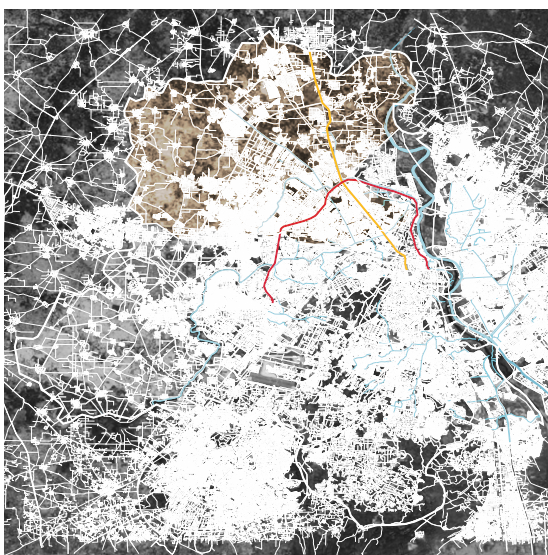
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PREFACE



Bhalswa in Delhi.

Source: ESRI Satellite



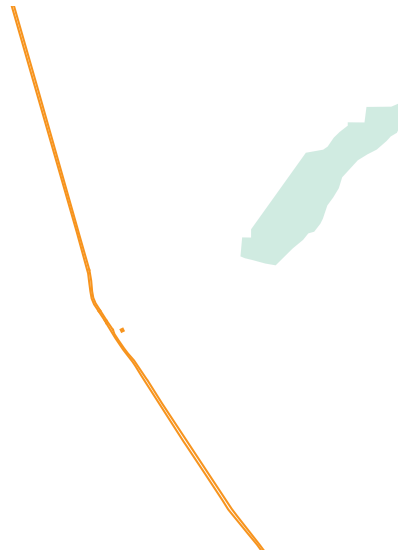
Bhalswa in North Delhi.

Source: ESRI Satellite

Home to over 200,000 people, Bhalswa-Jahangirpuri is a town in the north of Delhi. Known today primarily for its dumpsite, Bhalswa was once home to a lush wetland ecosystem around its historical horseshoe lake. Although left out of Delhi's historical development, it was included as a part of the city during its modern evolution. In this, it was zoned in 1962-1981 as Delhi's green belt, in 1981-2001, an agricultural area, and in 2001-2021, it was an urban area. However, it was also designated as a site for a sanitary landfill, which, owing to unchecked growth, has turned into a towering dumpsite in the last decade. This has destroyed its ecosystem, contributing to the worst living conditions in the city.

With water being susceptible to toxins from the dumpsite, and other solid wastes generated by resident communities, Bhalswa's hydrologies are especially vulnerable. The impact is empirically observable at its lake, with significant loss of biodiversity, especially along its western front. The lake's east, in stark contrast, is a vivid lakefront with public amenities and year-round footfall. The dichotomy presents a simple understanding that communities and ecologies can coexist with proper infrastructural development and resource management. A deeper dive into the lake through this case study highlights pain points contributing to its current state. Finally, as the city finds itself transitioning between masterplans, this brief ponders upon remediation strategies for the landscape.

HISTORY



The historic landscape



Bhalswa Today

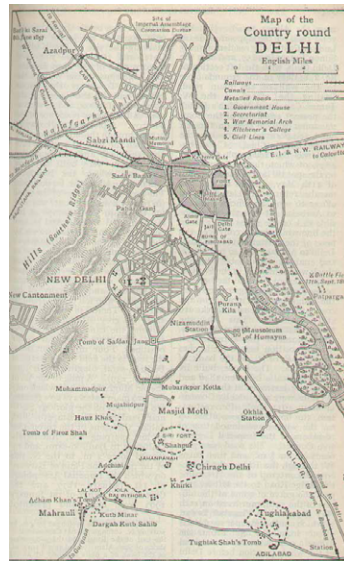
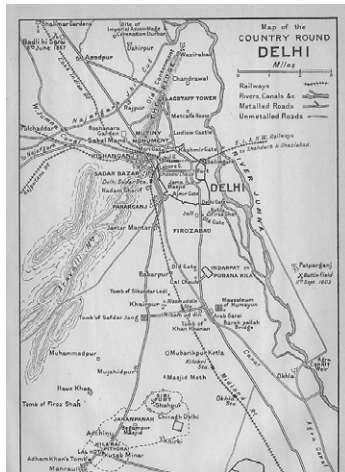
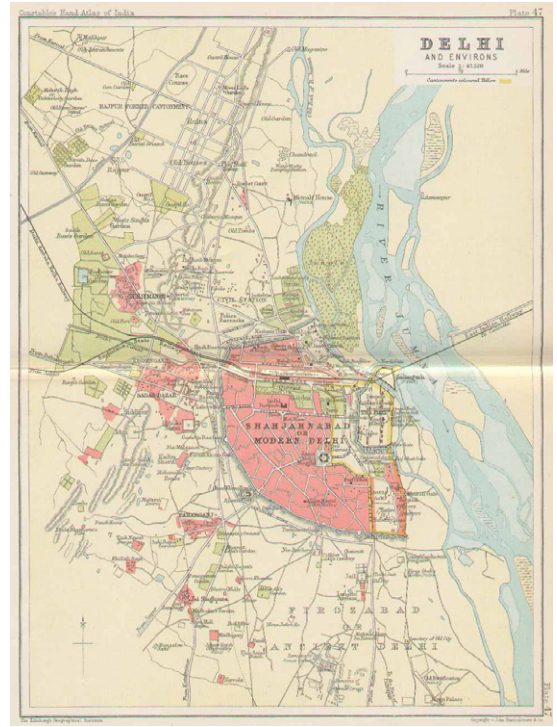
The earliest existing record of Bhalswa's relation to the historic cities of Delhi is a sixteenth-century Lodhi-era monument along the GT Karnal Road called Maqbara-e-Paik, a mausoleum to the messenger. A better understanding of the larger landscape comes through the 1807 Sketch of the Environs of Delhi by F.S. White. The sketch renders two great lakes connected to the Yamuna in the east. Of these, only one remains today. This is the Bhalswa Horseshoe lake. The landscape brought a rich wetland ecosystem, remnants of which continue to exist even to date. White also captures the villages of Bhalsooh (Bhalswa), Jahangeerpor (Jahangirpuri), and Mukundpur, surrounding the wetlands.



Source: Guerrieri (2017)

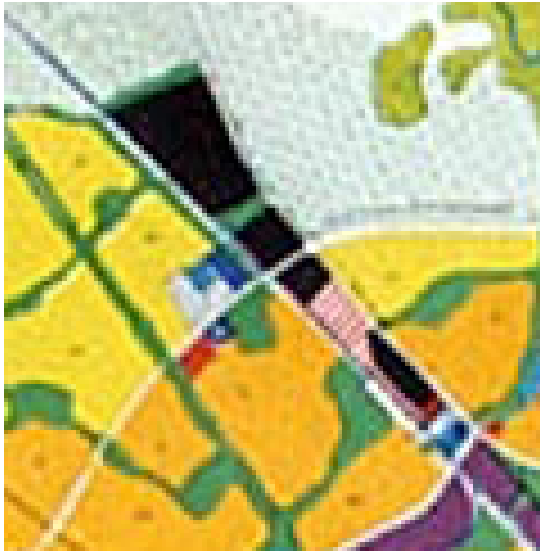
Following this, Bhalswa finds no cartographic mention as subsequent maps focus on the Mughal and Imperial cities of Delhi. In supporting the growing city, however, the northern part finds a developing infrastructural system. A turning point from the ecological standpoint is between Murray's 'Map of the Country Road' (1924) and Delhi and Vicinity (1962), where the Najafgarh Jheel Cut is termed as the Najafgarh Drain, a name it still holds.

BHALSWA THROUGH THE AGES



Source: (Guerrieri 2017) and (Alday and Gupta 2018)

EVOLUTION



Bhalswa in the first masterplan
Source: (DDA 1962)



Bhalswa in the second masterplan
Source: (DDA 1996)



Bhalswa in the third masterplan
Source: (DDA 2007)

Bhalswa finds itself included in the free nation's capital through its first master plan (Delhi Development Authority [DDA] 1962), where the city's development limits fall just short of the area along its Ring Road. An area that is neither in the city nor far enough to be a part of its 'Ring Towns', Bhalswa was in the city's inviolable green belt of agricultural land. This period also introduces Bhalswa with the Bhalswa dairy farmwards and a new demographic, occupation, and subspecies - the cattle. The inviolable aspect found itself soon shattered when "cut-up and low-lying land" around the Old Khadar floodplain was reclaimed by hygienically conducted sanitary earth fills with garbage" (DDA 1962).

The following masterplan, introduced in 1981 for 2001, reinforced this logic. Considering Bhalswa as an area beyond development limits, it allotted 70 acres of land to develop a sanitary landfill. While the plan acknowledges the

lack of an essential “water prevention layer” (DDA 1996) in an existing dump-site at the ring road near Sarai Kale Khan, it finds the development to be “satisfactory” (DDA 1996) While the plan does not lay adequate emphasis on the city’s natural features, it does seek the development of water bodies in the urban extension as “major lung spaces and to attract migratory birds and for improving the micro-climate” (DDA 1996). Two contradictory forces emerge at Bhalswa - the development of the sanitary landfill and the acknowledgement of the Bhalswa lake in the development plan.

DESOLATION



The Bhalswa Dumpsite



Bhalswa 2001

Source: Google Satellite



Bhalswa 2021

Source: Google Satellite

for the city as a global metropolis and a world-class city (DDA 2007). For this, the city expands its urban limits. Allocating a green belt in its peripheries, it considers everything inside these limits to be “urbanisable land” (ibid.). Bhalswa was subject to rapid housing development through optimised land utilisation. This brought forth an array of authorised and unauthorised developments leading to a densification of the area. Although the plan sought the integration of unauthorised colonies in mainstream development, informal settlements of Kalandar Colony, Vishwanath Puri, and Basant Dada Patil Nagar still lack basic sewage infrastructure and water supply.

The third master plan acknowledges a waste management concern assuming serious proportions due to increasing population, urbanisation, changing lifestyles and consumption patterns (DDA 2007). Projecting the city's waste to grow to upwards of 15,570 tonnes by 2021, it understands that a “major part of solid waste, especially non-biodegradable, has to be disposed of in sanitary landfills” (ibid.) In its sensibilities, a suggestion for a “buffer zone of ‘no development’ around landfill sites” (ibid.) was made, though this does not find recognition at Bhalswa. The period experienced an unprecedented landfill growth, exceeding capacity in its midterm and soaring to a monumental 62M high. With unchecked growth and unmonitored waste disposal, the landfill isn't really a landfill anymore. As Atin Biswas, from the Centre of Science and Environment, claims, “landfills are scientifically engineered sites, where non-hazardous and non-reactive waste is used to fill or level the land. They're designed so that waste dumped does not percolate into the groundwater. This is not the case in Delhi. The national capital has dumpsites – where garbage is literally dumped.” (Munjal 2021). While this reality exists on-ground, it reflects poorly on North Delhi's Zonal Development plan, where the dumpsite's extents are marked as ‘District Park’ in an oversimplification of fact.



Events of the dumpsite's collapse in August, 2021



Bhalswa in the Zonal Development Plan

Source: DDA (2007)

THE NEED FOR REMEDIATION



Bhalswa today

Illustration: Ipsita Choudhury

Today, after decades of environmental degradation, Bhalswa's landscape is a living apocalypse (Alday and Gupta 2018). Breathing here is injurious (Lava-kare 2020), with hazardous air pollution levels year-round. Groundwater is no different, with nitrate concentrations over thirty times the acceptable limits.

The dumpsite calls for remediation, a process that is yet to be actioned. Following judicial rulings, current efforts involve reducing the dumpsite's height. As a strategic action, the municipality has scooped out legacy waste and toppled it on the side. Although lower in height, these new formations often lack adequate supporting strength. In the last two years alone, two incidents of the dumpsite collapsing over surrounding settlements have damaged public and private property. Leachate from the dumpsite flows untapped, reaching people through the very drainage they rely on.

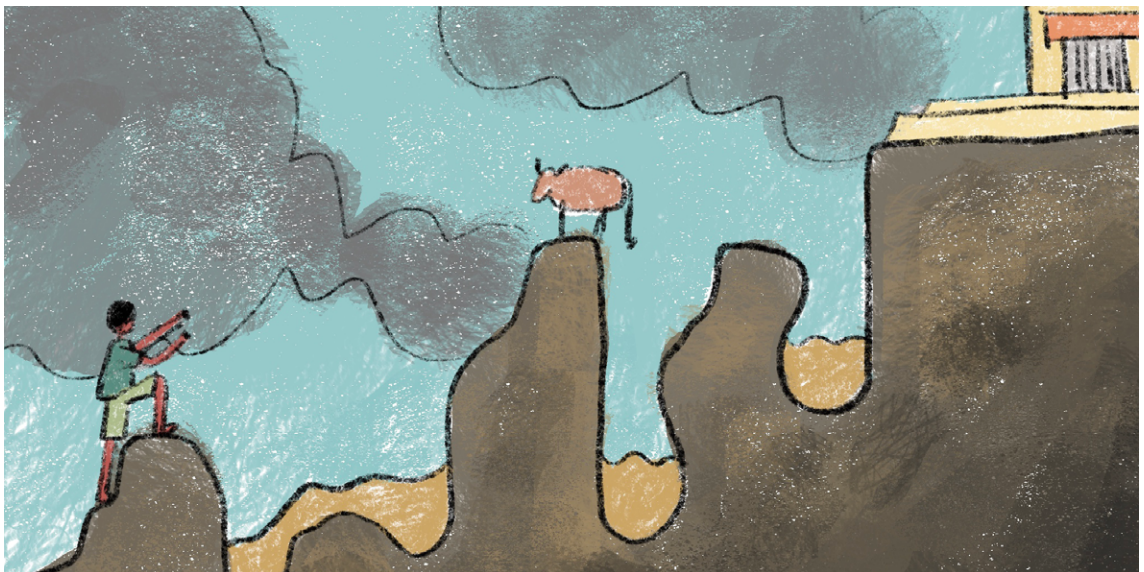


Groundwater Concerns
Illustration: Ipsita Choudhury



Basic Infrastructure Concerns
Illustration: Ipsita Choudhury

Efforts to decrease its volume, a more significant indicator of the problem, is nowhere to be seen. While shifting incoming waste to a newer landfill in Narela may be a preemptive solution, is this not giving birth to another Bhalswa?



Roadblocks to a Better Bhalswa
Illustration: Ipsita Choudhury

TOWARDS A BETTER BHALSWA



Informal Settlements by the dumpsite

Illustration: Ipsita Choudhury

In making the city's fourth master plan, the Delhi Master Plan 2041, the city is moving to a renewed vision. This one is to "Foster a Sustainable, Liveable and Vibrant Delhi" (DDA n.d.). In this, the draft plan devises six objectives to achieve its goals. For the first time, the city's development themes are not split as programs but devise themes towards development. This shows promise of integrated development but must also reflect in development policies so initiated. If the DDA's fourth master plan is to be enacted, it should reflect holistically in the zonal development plan and by-laws that are to emerge later.



Legacy waste from the dumpsite is a physical risk to the landscape



Solid wastes from settlements post a concern to the historic lake

The development of the zonal development plan has special value in fostering a better Bhalswa. The current zonal development plan, as approved in 2010, reflects poorly on the aspirations and ideals that should go into the remediation of a degraded landscape. Herein, it has the potential not to be a blind appropriation of the overarching master plan but to add value by contextually rooting the set guidelines and providing development suggestions. This, however, is not possible without establishing a dialogue with existing communities and stakeholders in the area.

The drafting of the localised plan invites the possibility of the synergy of bottom-up and top-down administrative planning. It must be understood that Bhalswa, although in a larger zone P-II, is of great concern to the city's overall health and security. It should therefore be treated with the importance it has missed through the previous development plans. If the future master plan acts as a remedial measure of a landscape that has been a playfield in the past three, considerable attention is required. A suggested way forward is to call for rooted neighbourhood improvement plans to support an immediate action plan for Bhalswa.

This sets in motion the need for another exercise - the setting up a dialogue between administrative departments for the area. In the case of Bhalswa, while the land is primarily owned and operated by the DDA and DUSIB, public facilities and infrastructure, including that of the dumpsite, are administered by the North MCD. Herein, caught amidst political interests and separation of powers, concerns raised for the area are often turned into a political blame game. Neither the North MCD nor the DDA has taken any accountability in actioning prevalent solutions on healthcare or sanitation. The future master plan is technologically empowered, utilising GIS systems to develop its land-use plan in the first instance. If implemented in the localised development, this can override overlaps and ensure accountability for development. While the land use map may be a governing policy, overruling administrative authority is also of the essence.

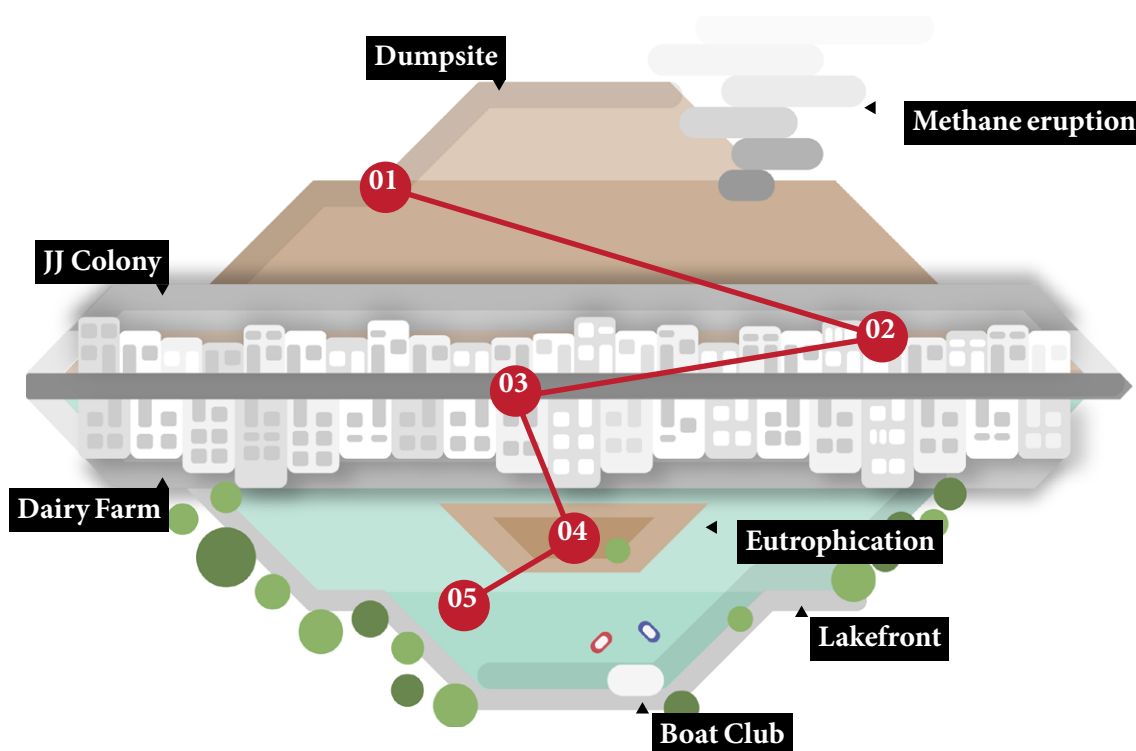
IMMEDIATE ACTION

The Delhi State Wetland Authority [DSWA] is expected to soon release its first draft for notification for the city's lakes. The first phase recognises the Bhalswa Lake, amongst others such as Sanjay Lake and Hauz Khas as wetlands. This promises protection against future deterioration. According to an article in Hindustan Times, the draft will mention a zone of influence for each wetland, including its buffer zone, enabling recreational activities like cycling and walking while restricting commercial activities, including grazing. Further, is the intent of developing long-term plans for the wetlands, including revival and long-term maintenance. Manu Bhatnagar, a part of the panel, speaks of the Bhalswa lake as "(it) was once comparable to the Naini Lake in Nainital, now suffers from excess sewage dumping. Each water body has specific problems that will need a specific solution" (Gandhiok 2022).

With empanelled experts working towards the goal, the DSWA shows certain promise in its intent for the wetlands' remediation. The revival of Bhalswa lake involves an in-depth study of the landscape and working through its pain points.

Since early 2020, Better Bhalswa has been working to uplift the urban situation through on-ground engagement and research. Through the holistic understanding of the landscape, proposed is a set of 5 propositions in making a better Bhalswa.

A Five Point Proposition for Landscape Remediation



01

Leachate and Legacy Waste



Even when it does not rain, for the most part, the dumpsite acts as an over soaked sponge - its organic matter decaying and leaching out toxins. This leachate is a predominant waste and polluting agent for Bhalswa's landscape. The North Delhi Municipal Corporation (North DMC) is currently trammelling the dumpsite to generate inert soil, a resource that it does not have a viable solution for aside from filling low-lying areas in the city. Arguably, the city's low-lying areas are also parts of the several wetlands that the DSWA is currently seeking to protect. As an unsustainable practice, with no alternative solution, the dumpsite's inert soil presents a significant concern as a supplement to its volume. Since 2020, Better Bhalswa has been working on small placemaking initiatives, pioneering sustainable building through material innovation. One outcome, is the use of the earthbag technique, where the inert soil, stabilized with a minor percentage percentage of quicklime, is compacted in jute bags, and used for urban furniture, fenestration. This is a viable alternative, as it has the potential to develop urban furniture, landscaping, and playscapes. Another alternative recommendation is prototyping construction blocks for mainstream construction or, as pavers. This requires significant R&D, but it can prove a viable solution for dumpsites across the nation if successful.

02

Waste Management



As discussed in earlier sections of the brief, waste management at Bhalswa proves to be a constant challenge owing to the difficulty in administering behavioural change management in an area with communities living by the city's waste sink. The area also lacks much-needed waste management infrastruc-

ture, such as operating waste reclamation centres, or dhalaos. In such instances, waste produced by resident communities ends up accumulating in public space, posing a severe health and safety hazard. Waste often also ends up in stormwater drains, polluting the potent resource. Here, infrastructural development and community sensitisation are of great relevance. Waste management through public placemaking is a tactical yet practical solution.

03

Stormwater



Connecting the landscape's highest point – the dumpsite's peak, to its lowest point – the horseshoe lake, are Bhalswa's stormwater drains. Rainwater flowing from the dumpsite carries leachate through the drains, flowing through informal settlements of Kalandar and Shraddhanand Colony and the Bhalswa dairy farms. Ultimately, the water ends up untreated into the lake, where the nutrient rich waste leads to a loss of biodiversity in a process known as eutrophication. The North DMC's responsibility is to check the dumpsite and maintain a lining to prevent the flow of leachate-rich water into the landscape. At the informal settlements, nonprofit organization efforts, especially from Chintain, where the organization is working to help communities develop kitchen gardens is commendable. This is substantiated with rainwater harvesting and stormwater management can serve well in preserving the rich resource.

04

Wastewater



While informal settlements lack basic wastewater management infrastructure, Bhalswa also contributes several other wastes, an abundant resource being cow dung at the Bhalswa dairy farms. This nitrate-rich substance accumulates

at the lakefront, creating so-called 'dung islands' where there should've been wetlands. Though sanctions are a means to check the same, dung at Bhalswa has no alternative endpoint. In closing this loop, suggested are ideas of co-operative industries working with dung. Dung to log machines is a cost-effective and viable solution to managing this waste in the absence of a proposed biogas plant.

Next is the concern of wastewater management in the area, as suggested in the SWM Rules 2016 and the Delhi MPD 2041, decentralised systems can be well adopted. Suggested locations for these include a 2-hectare plot of land at the lakeside currently reserved for the storage of mobile toilets by the DUSIB.

05

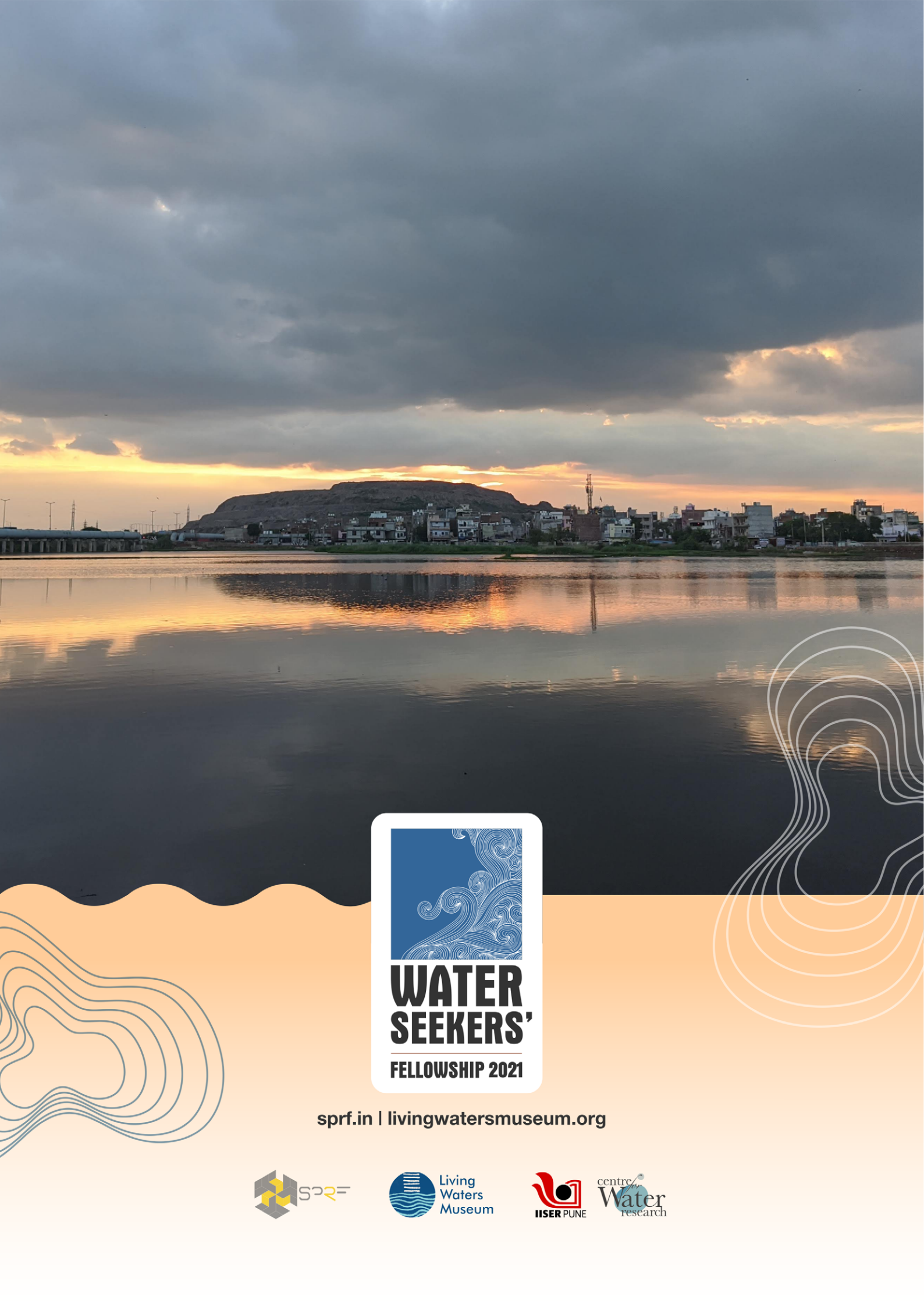
Lake Remediation



Although the DWSA's proposed action plan will focus on Lake Remediation, the plan's enactment and enforcement is an eventual case. As a landscape requiring immediate relief, potentially frugally developed constructed wetlands, such as those in the case of Hauz Khas lake, can be effective pilots. Public cleaning attempts for the lake by organisations like Karwaan Mission are commendable, but cleaning on the western front requires adequate machinery and equipment.

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