

BAVKHALS

VASAI'S 200-YEAR WATER LEGACY UNDER THREAT

Bavkhals are excavated waterbodies in Vasai-Virar's urban landscape. These 200–400 years old, ponds built by local communities to manage water security in semi-arid conditions.

Community Heritage and Traditions

Bavkhals are ancestral water resources around which everyday community life existed. These private or community owned ponds provided water access to support rural livelihoods, recharge groundwater, and served as hubs for recreation, religious and cultural activities.



Community-built pond, 'Bavkhal' restores the hydrological and ecological balance of urban landscapes



Every St. John's Day, the Bavkhal becomes a gathering place for the village's traditional swimming competition.



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- 560 bavkhals mapped by Aga Khan Agency for Habitat India till December 2025
- Bavkhals restored through community action and technical support from Aga Khan Agency for Habitat India

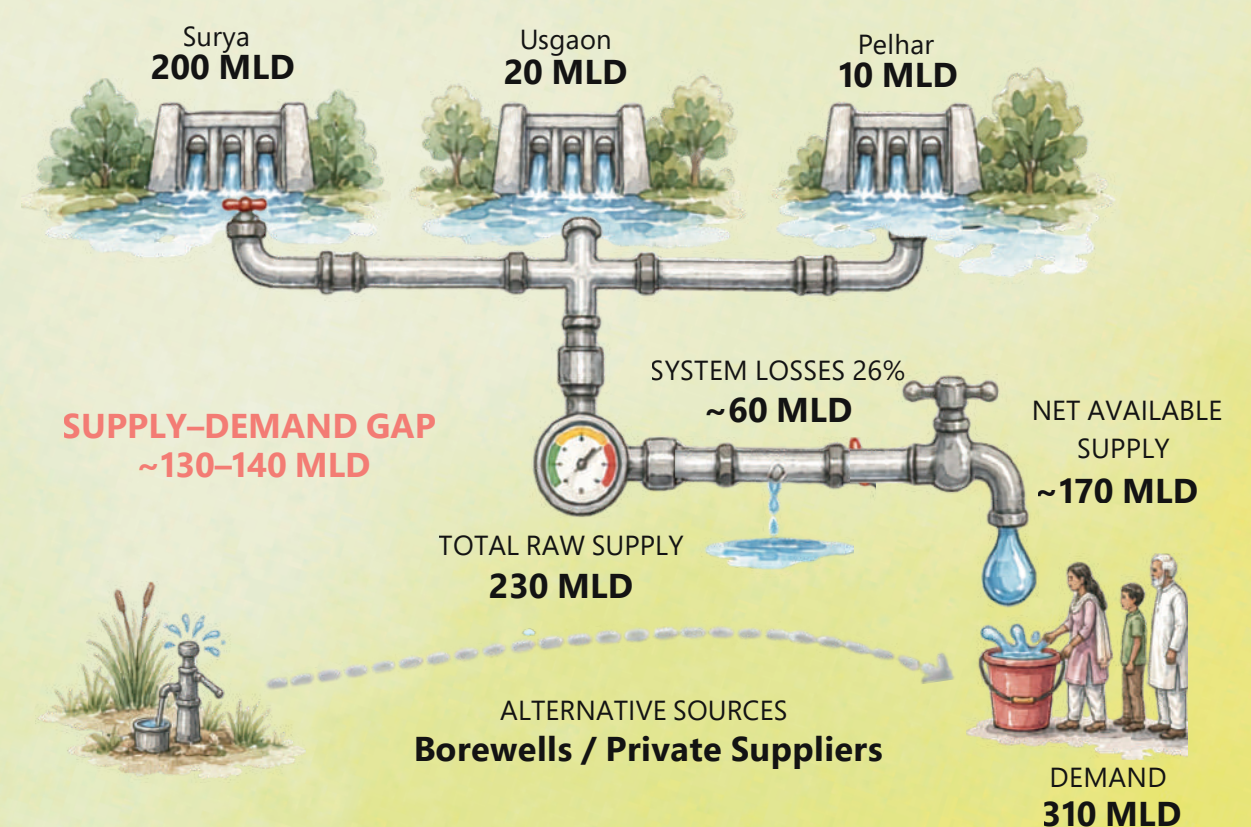


HOW VASAI-VIRAR'S GROWTH LEFT BAVKHALS BEHIND?

As Vasai-Virar urbanized, agriculture declined and development increasingly encroached on bavkhal spaces. With reduced community use, many bavkhals were neglected—facing pollution, dumping and siltation—leaving their future increasingly uncertain.



WHERE DOES VASAI-VIRAR GET ITS WATER?



BAVKHAL

AS A LIVING WATER SYSTEM



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The India Pond Heron, commonly spotted near bavkhals, is among the many bird species that rely on these wetlands



Restored bavkhal create a cooler microclimate, reduce urban heat, and strengthen local water resilience



Native vegetation such as mango and tamarind line the bavkhal's edges, supporting a rich and diverse ecosystem



HYDROGEOLOGY OF VASAI-VIRAR

The 380 sq. km landscape of Vasai-Virar in Palghar district is shaped by **weathered basalt**, a porous layer that acts as the primary aquifer, enabling natural groundwater recharge.

Soil Type:

Coastal: Calcareous soils
Plains: Black soils
Hilly Regions: Loamy

Rock Type:

Predominantly Basalt (Deccan Traps)

Coastal: Alluvium soils
Eastern Hilly Regions: Bauxite

WHY CONSERVATION OF BAVKHALS MATTERS FOR VASAI-VIRAR?

66.3% of Vasai-Virar's population is connected to municipal piped water. The remaining 33.7% of residents rely on borewells and private suppliers for their daily water needs. Considering the minimum bavkhal size of 20 × 20 ft, each pond can store around 2,00,000–3,00,000 litres of water. This illustrates the crucial role bavkhals can play in improving groundwater levels and enhancing local water security, particularly in coastal areas of Vasai-Virar where access to a piped water connection remains limited.

Restoration of 605 bavkhals (mapped till July 2026) has the potential to create an additional 121–180 MLD of water storage capacity, equivalent to the city's current water supply deficit.



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MY BAVKHAL HEALTHY BAVKHAL

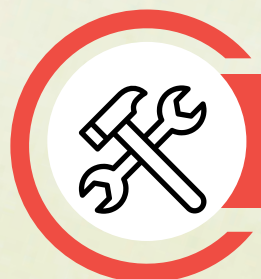
The 'My Bavkhal, Healthy Bavkhal' campaign by the Aga Khan Agency for Habitat India built on community efforts, providing technical expertise and civic recognition. Restoration efforts supported through the campaign focused on edge restoration, desilting, planting native species around bavkhals, and curbing waste disposal.



Technical support and scientific planning from AKAH India to restore and conserve the ponds



Practical solutions for algae control, silt removal, and debris management



Guidance on community-driven strategies to ensure regular upkeep

“Cleaning our bavkhals is an investment for our village's future. Through desilting, we have expanded the ponds' capacity to hold water and overcome our seasonal water shortages. Bavkhals recharge groundwater and ensure our community has access to clean drinking water year-round.

Janet Dias, resident of Papdy village

STEWARDSHIP SUCCESS STORIES

Restoration through Care & Knowledge

Community-led desilting of ponds expanded storage capacity to secure year-round clean drinking water. Native fish species were introduced to maintain potable water quality naturally.



Community-managed Solar Powered Water Purification

Solar-powered aeration installed by the community keeps the bavkhal clean, while CCTV surveillance helps prevent illegal dumping and pollution.



Powering Change through Grassroots Activism

Community advocates for the reclassification of traditional ponds in the official documents from "wasteland" (potkharaba) to heritage waterbodies.



RESTORATION OF BAVKHAL: SIX SITES, THREE INTERVENTIONS

Desiltation of Bavkhals

Desiltation was carried out on six bavkhals led by local tribal communities. Water was pumped out, followed by silt removal, and repurposed as manure for nearby neighbourhoods.



Edge Restoration

To prevent soil erosion along the edges, biodegradable jute nets were laid along the slope. The net stabilizes the soil through a nature-based solution.



Plantation of Native Species

Native species such as neem, black jamun, and fresh mangrove were planted surrounding the bavkhal, supporting biodiversity and strengthening the microclimate.

