WATER FOR PEOPLE

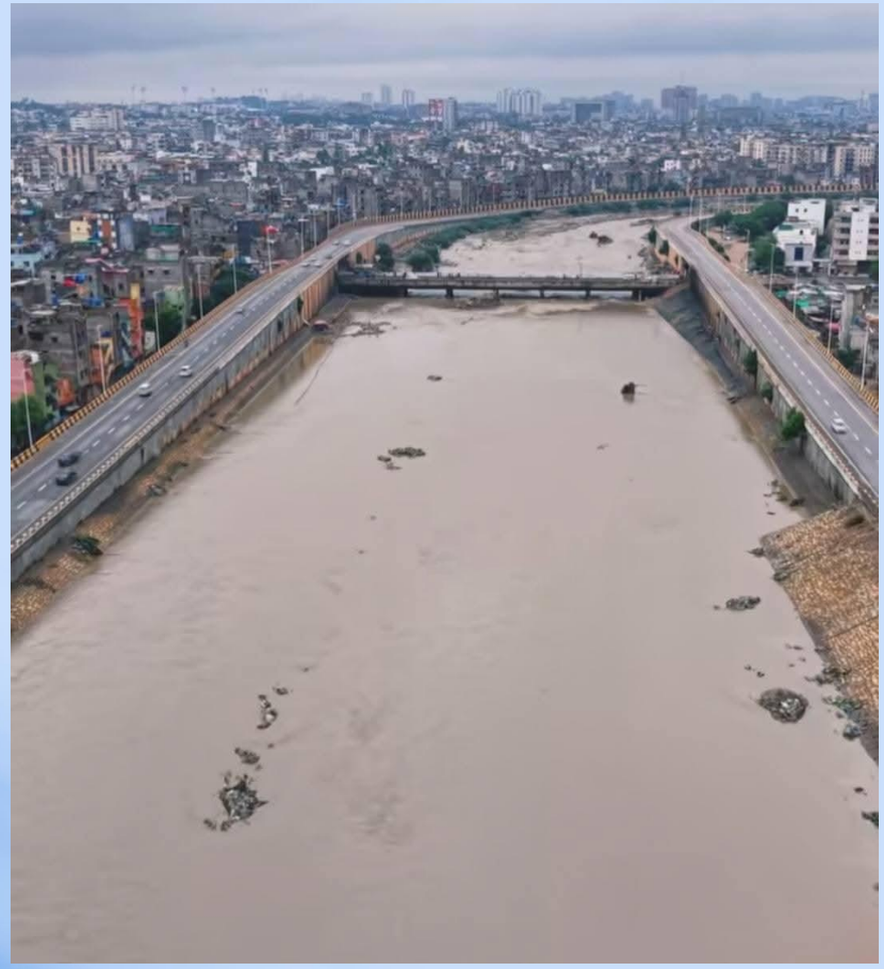
URBAN DRAINAGE AND FLOODS

The City of Karachi has an inadequate drainage system - This is owing to some of the following factors:

- The drainage system is outdated, broken and has been reduced in capacity due to encroachment and illegal construction on the drains
- The drains are chocked/ overflowing with solid waste and sewerage –
- The two main Nadis of Karachi, Lyari Nadi and Malir Nadi have not only become dumping grounds for sewerage but excessive sand dredging has eroded their banks.
- Karachi has experienced unprecedented heavy rainfall over the last few monsoon
- Insufficient planning and a lack of coordination between the administrative groups governing Karachi has made the problem worse

Urban flooding

- leads to immobility in the city, shutdowns and blockages
- Major damage to infrastructure such as roads and bridges
- About 350 million gallons of untreated sewage and industrial waste is dumped into the city – as it does not make it to treatment plants
- Increase of outbreaks of typhoid, dengue and water borne diseases
- Environmental degredation



Lyari River

Malir River

Nala choked with garbage

The greater ‘Karachi Sewerage Plan’

The greater ‘Karachi Sewerage Plan – S-III Project’ was approved in 2007

The treatment plants were to separate liquid from solid waste and treat the liquid sewerage to purify it enough for reuse, or for dumping it into the sea.

However, work on TP-I and TP-III is close to completion, while the work on TP-II, TP-IV & TP-V has not even begun.

At S-III project site, the project discharges approximately 400 MGD in to sea.

These plants are strategically positioned in high density and high activity areas.

IMPEDIMENTS OF S-III PROJECT

1. Delays and construction halts (owing to pending approvals)
2. Unprecedented inflation since 2020. Cost increases over time
3. Consensus not reach between the Federal and provincial governments over the stages of project
4. Lack of resources machinery/trained personnel

Karachi Water and Sewerage Board Impediment

1. Karachi receives 920 MGD water from Indus & Hub to be distributed across 27 districts.
2. The aging infrastructure of water and sewerage, high percentage of NRW, (non revenue water)
3. lack of capacity building and infrastructure training, account for lack of efficiency.

Integrated Strategy for urban drainage and flood control

If Karachi is to overcome its drainage, flooding and environmental damage issues, we must act urgently, putting together solutions that are sustainable, environmentally friendly and cost effective.

It has now become essential for an integrated approach to be acquired by all stakeholders, planners and developers.

1-KW&SB S-III Project

2-SSWMB

3- SEPA

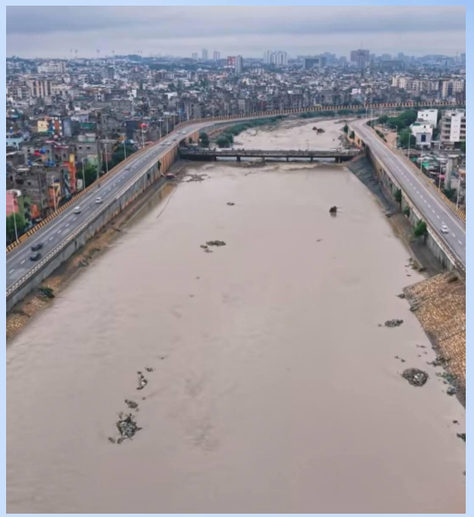
4-MoMA

5-CCP

6-GOS

7- Port & Shipping

Nala choked with garbage



Lyari River

Malir River

Urban Flooding

Suggestions:

Improved Drainage and Rain Water Management - Cleaning and distilling of Hallahs, Upgrading the current systems, constructing water retention basins, making water pumping stations, creating smart water grids and Desalination plants

Integrated Urban Planning – Develop an improved city wide drainage plan – determining flood prone zones, Ensure coordination among agencies like KMC, DMCs, KDA, SBCA, and WASA to avoid overlapping or contradictory work and GIS mapping and hydrological modeling to design effective drainage networks.

Control Encroachment and Construction: Removing encroachments along the Nullahs, heavily enforcing zoning and building codes and establishing buffer zones along key nullahs such and Orangi and Gujjar

Environmental Restoration – Restoring the mangroves, constructing and engineering coast barriers for protection, heavily regulating sand mining practices

Adapting Climate Friendly Initiatives – Integrate climate friendly designs in our urban planning, Investing in creating more green spaces

Managing Waste and Pollution – Upgrading our waste management systems, forbidding the dumping of waste into Nullahs and creating policies and resources to reduce pollution overall

Development and Planning – Improving flood forecasting, creating more accurate flood plain maps, heavily regulating construction in flood prone areas

Data and Technology – Implementing methods that have been used in smart cities – such as public space integration, smart drainage systems, sponges, including climate resilient planning ideas for the city

All these suggestions, can only come together and become solutions once we also strengthen the laws and policies surround this issues, create public awareness, and bring together stakeholders to collaborate work together to create a better more resilient city.