

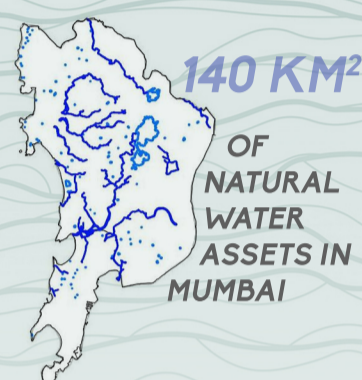
Sponsored Thesis Project Competition on "Re-imagining Urban Rivers"

Revitalizing the Nullahs of Mumbai

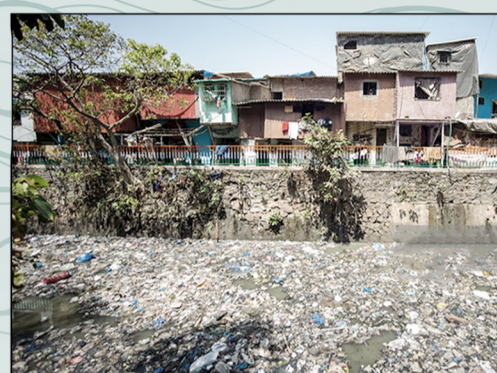
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What are Nullahs ?

Nullahs were originally natural watercourses or rivers. Connected to the sea and thereby the tides, these water bodies regulated groundwater levels and assisted in dispersing water from the land in case of heavy rain.



Sadly, these watercourses or rivers have unfortunately abused making it open sewage drains, taking our effluents out into the sea.



Moreover, Mumbai's SWDS network, meant only to carry rainwater, is connected with illegal sewerage lines.



It's filled with :



Directly felt near :

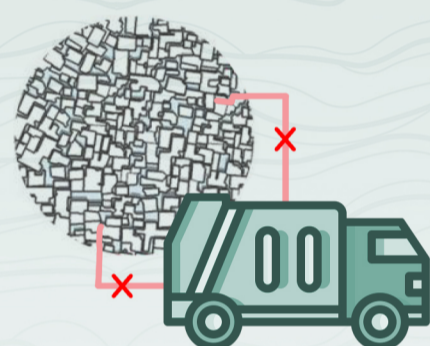
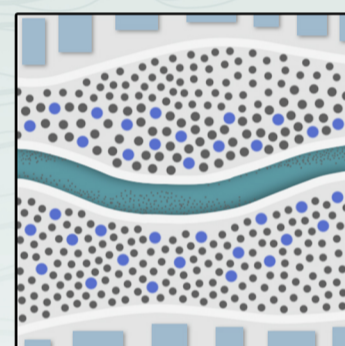
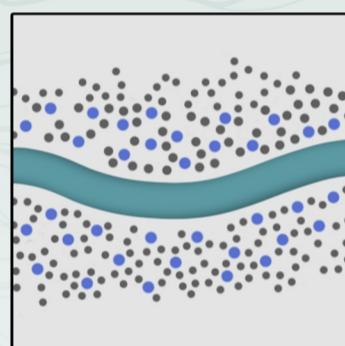
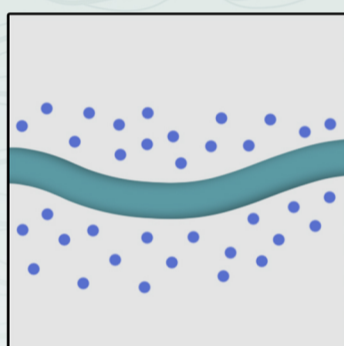
This makes
Heat in the ocean ↑
Climate Change ↑



93 % of
total waste
found in
the Ocean
is Domestic
Waste

107 Nullahs in the west directly opens into Arabian Sea without any filtration.

Who throws the garbage into the nullah ?



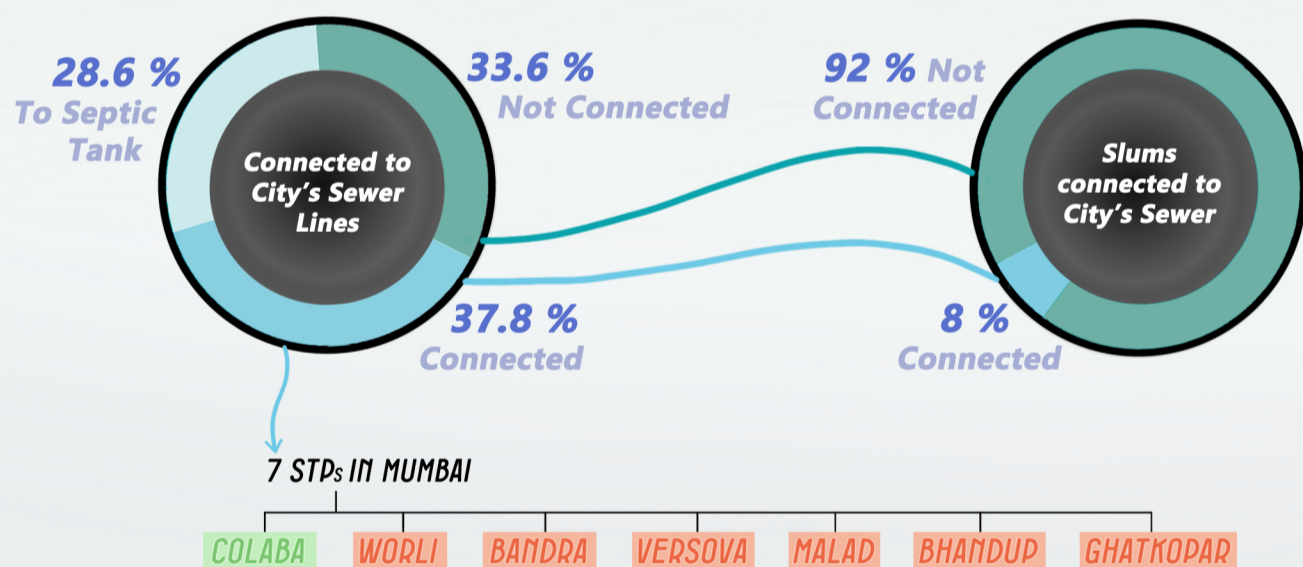
Tight Fabric
No Grabage Services possible

As no space; people resort to throwing garbage into the nullah.

According to the BMC Survey, over 76,400 sewage lines have been illegally connected to SWDs, open nullahs and creeks.

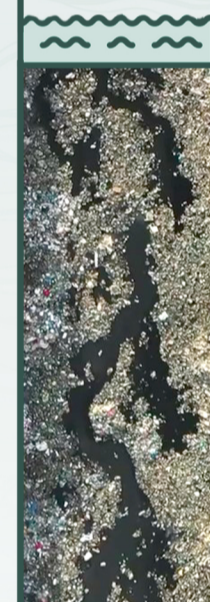
Koli Settlements near nullahs for fishing was adjoined by Informal Settlements in 1890s. As other parts of the city developed they have become today's slums

Sewage Disposal Analysis of Mumbai :

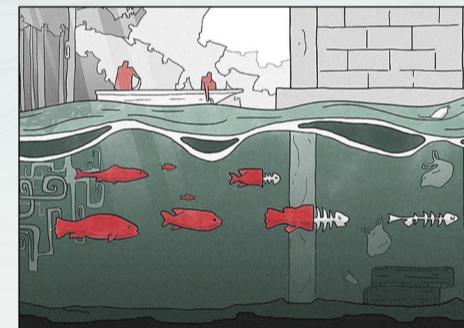


Everyday 80 - 110 Tonnes of waste gets directly thrown into the Nullah

This has end up as a floating sheet of garbage on the nullah.



IMPACT
On Ecology



IMPACT
On Slum Dwellers



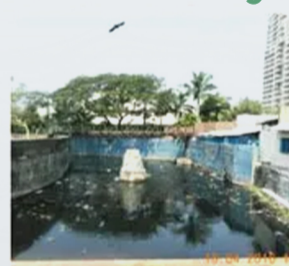
IMPACT
On City

Choking at one point, affecting the other parts.

Except the one in Colaba, the remaining STPs are currently not fully equipped to purify the quantum of sewage water coming and continue to discharge polluting effluents into creeks.

Just Cleaning not a solution :

Before Cleaning After Cleaning Now (In a week)



Instead of solving / cleaning the oceans and rivers, If we focus on the source of the pollution which are these nullahs and people living besides them !

Then, the results will be automatic and be seen quickly !

Change with Circular Economy :

The 3Ps of the system:

People (Society)
Planet (Environment)
Profit (Economy)

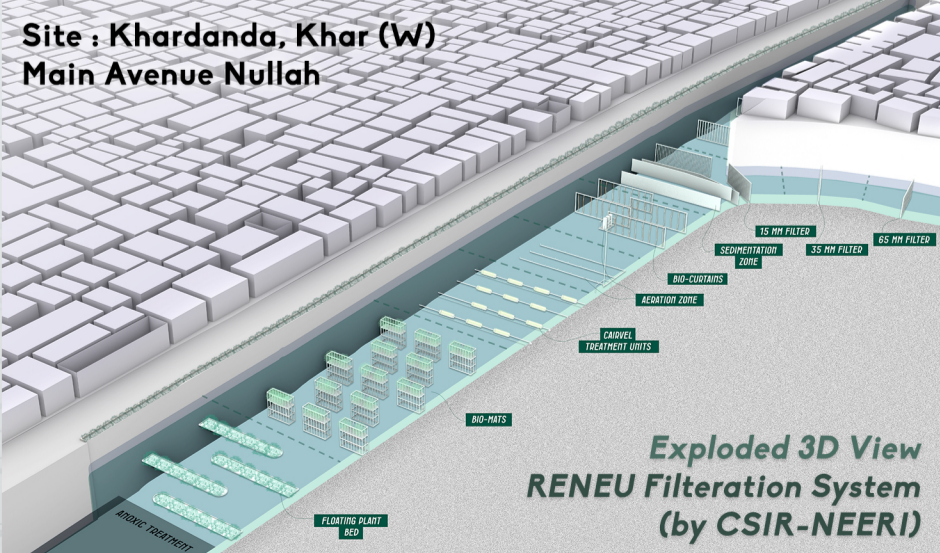


A program where Environmental Problems gets solves, the people get facilities as well as the Gov. earns.

Approach :

The intervation is designed to be MODULAR, so that the problem is solved with multiple layers throughout the city where the situation of Slums and Channelized Nullahs filled with Garbage and Sewage exists !

1. NULLAH WATER TREATMENT



RENU Filtration System runs across Nullah with only Anoxic Tretment covered and ECO STPs placed at existing Illegal Sewage Lines connected to Nullah.

2. COMMUNITY FACILITY PROVISIONAL CENTRE

Programs

Waste - to - Incentive Exchange Program

Students In Exchange of Stationery	Working Man / Woman In Exchange of Bus / Train Passes	Household Woman In Exchange of Fruits & Vegetables	Senior Citizens In Exchange of Medicines
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+ Polyclinic + Community Toilets + Roof Top Area



The Structure sits on a Transfer Girder, so no part of the Structure affects the flow of Nullah. Also MODULAR for all types of widths.