

# Water and Mumbai - The Museum of Solutions

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The Museum of Solutions is an interactive children’s museum in Kamla Mills, Mumbai with the aim to empower children to build a better world together through hands on experiences based on the real world. The Museum is built on the universal values - celebrating learning, share knowledge, think collaboratively, dream together and make mistakes. The Museum is based on some of the UN Sustainable Development Goals - ones that children resonate with. The Museum is 100,000 square feet and the Museum itself is spread across 4 floors. The Museum itself is environment friendly, with the terrace being a space for rainwater harvesting, wind and solar energy and sustainable activities such as gardening and composting.

The Museum has a strong interest in Youth Action and being child led. In 2019, I was selected as a member of the Children’s Panel. I first received a form via school, to apply for the Children’s Panel. The [form](#) had a few instructions - “Think out of the box. Be open to new ideas and discussions. Think critically and Speak your mind honestly.” Some of the questions in the form were - “If you were to change one thing about your education, what would it be?” and “How would you cut an apple without a knife or a blade?” which required us, applicants, to use our critical thinking and creativity. The second and final round was an interview with a member of the core team at MuSo. At the interview, I recall discussing issues that bothered me and how I wanted to create real change. The Children’s Panel consisted of 30-35 children, across schools of Mumbai, who met once a month at the office - participating in, and giving our feedback on the exhibits and activities the Museum had curated. The team would then, rework their prototypes and incorporate our feedback into the design and content of the Museum. The Panel Meets at MuSo continued till February of 2020, till COVID-19 hit. However, I stayed connected with the Museum online. I conducted an interview with the writer, photographer and founder of Humans of Bombay, Karishma Mehta - for the Museum of Solutions’ social media page, and continued my engagement with the Museum online in 2021. In 2022, when the lockdown was discontinued and schools began opening up - I visited the MuSo Bandra Office, twice a week. Since I was the only child continuing to work with the Museum, I had a lot more responsibility. I worked closely with the design team, gave feedback and helped remodel exhibits and sparks and created a few of my own - like the asynchronous [‘Everyone is an Entrepreneur’](#) spark. I too, had to test out the activities I made by trying it out with children and presenting it to the team of directors and designers.



MUSEUM OF SOLUTIONS CHILDREN’S PANEL

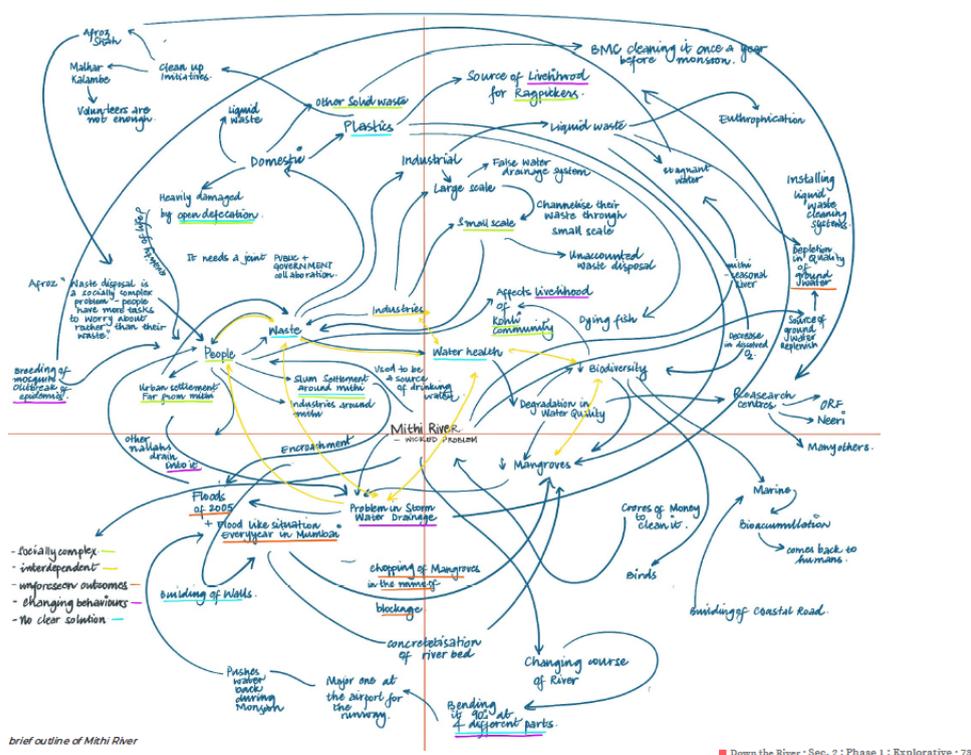


At the Museum of Solutions, each exhibit has a central theme - *Water, People + Planet, Mental and Physical Well-being and Sustainability + Me*. Each activity is further classified into 1 of 3 activities. Spark, which are short impactful activities that give children a quick dive into problem solving and

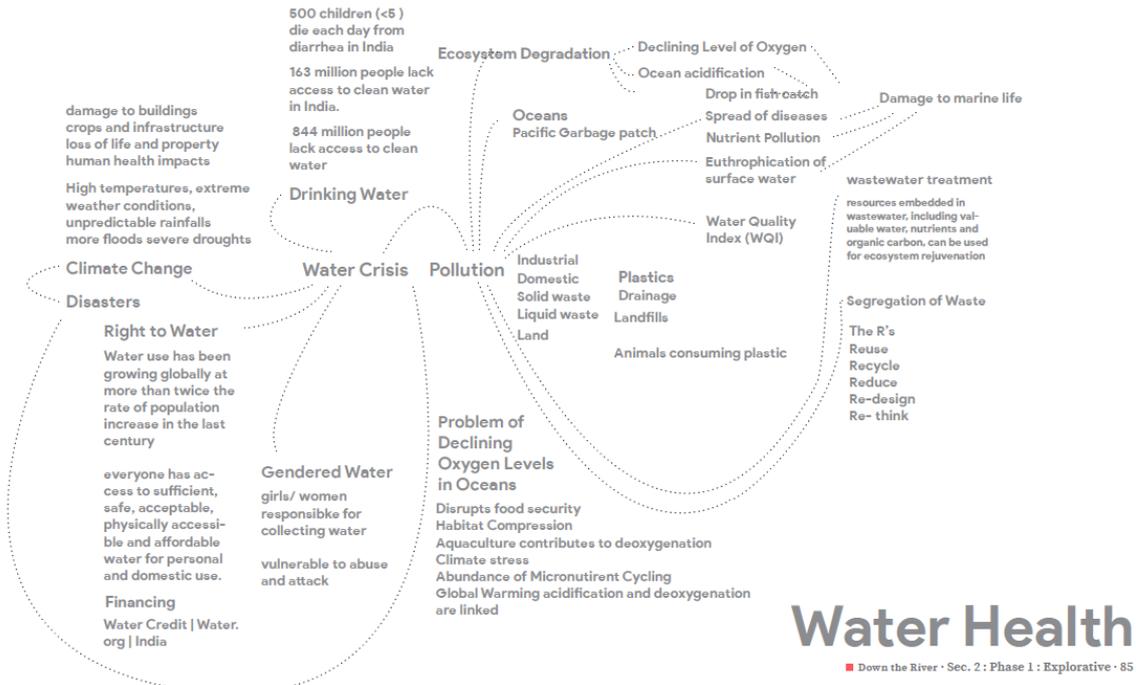
reflection. Missions, which are longer exploratory missions that allow children to take a deeper look at the issues that concern them and collaboratively develop solutions. Quests which are longer fellowships in the form of transformative experiences that allow children to learn by doing in a real-world setting.

A project that I found out about through MuSo was the Sassoon Dock Arts Festival initiated in 2017, to revive the 142 year old Sassoon Dock and it's rich heritage. Over thirty artists from around the world have given the Sassoon Dock, home to Mumbai's traditional Koli fishing community, a colourful makeover as part of the Street Art Urban Art Festival. The Sassoon Docks include large portraits, art installations and sculptures of Koli fisherfolk -- believed to be Mumbai's original inhabitants and whose goddess Mumbadevi lends her name to the city -- and brightly painted murals representing women from the community. The Koli Fishing community, now face an uncertain future due to pollution and climate change. Commercial fishing involving large corporations and the destruction of mangroves form another threat to the Koli Community's survival.

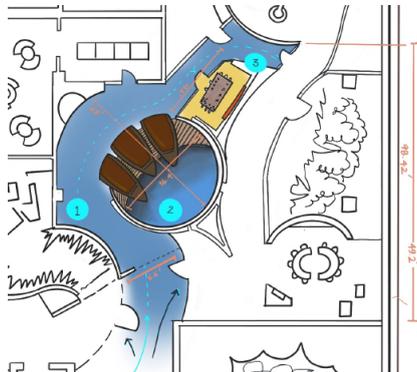
This is why I chose the theme Water, especially contextualised with Mumbai. An exhibit that introduced me to this theme was the Mithi River Exhibit aimed at SDG 6 and 14.



- Mumbai faces water shortage for 4-5 months in a year when the rainwater gets consumed.
- Most of our drains, drain into Mithi River, earlier - a river, currently - a nallah, supposed to be - a storm water drainage, long back - a source of drinking water.
- Mithi meets the Arabian sea at Mahim Bay, which means, all the liquid & solid, domestic & industrial waste goes directly to the ocean.
- Of all the waste that enters Mithi River, 93% is domestic waste, 7% is industrial.
- Choking of the Mithi River led to Mumbai Floods of 2005.
- Mumbai's famous flamingos habitat - Thane creek is now full of untreated sewage. The BOD (Biochemical oxygen demand) level is supposed to be 30 mg/L to be at a safe standard. The BOD in a sample from the Thane Creek, was found to be at 78 mg/L. It ranges between 2,000-5,000 mg/L for effluent discharge point, however, these results show the sample had over 24,000 mg/L. - Environmentalist, Nandakumar Pawar.



The River - Mithi, forms the narrative thread of the entire gallery. The river originates at the foot of the forest and enters the Arabian Sea after flowing through the city. This Mithi River Exhibit is to study and understand the damage done to the river to address the arising problems of water with hands-on experiences, interactive decision making exhibits and narratives.

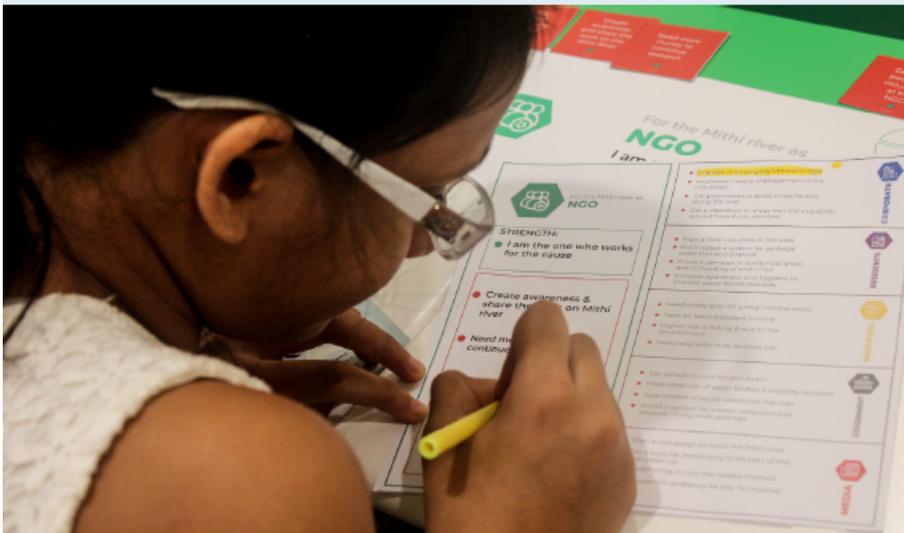


The children start their journey by mapping the Mithi River on the map of Mumbai and learn how it now looks like a drain, instead of a river. The children are then contextualised by a quick game where

they are shown pictures of a Nallah and the Mithi River and they have to segregate them. The children then sit in a prototyped boat, wearing virtual reality goggles creating a simulation of being in the river. A video journey is narrated by the river to help children visualise and understand the Mithi River. Through a hologram and filters, children can see themselves as the river and understand the pollutants (household waste, open defecation) and their damage. The effects on the biodiversity is depicted through an illustration made with invisible ink allowing children to illuminate different parts with a torch to reveal the different stories of pollution. To test the different levels of water pollution, an activity using science was incorporated. Four substances with varying pH levels were tested with pH paper that contained secret messages once the substance was tested.



The exhibit is culminated through a a 6 player board game where each player assumes the role of a stakeholder and works collaboratively with others to solve problems affecting the Mithi river - to understand the complexity of the issue and learn how collaboration can help in solving problems holistically.



Another exhibit that revolved around the theme of 'Water' was one named 'Unheard Voices.' This involved 3 booths. The first booth was a telephone booth with an audio aid - a story on the daily life of a rag picker. In the audio, the ragpicker talks about how his livelihood is centred around picking up plastic waste from the Mithi River and he emphasises on the drastic change the Mithi river has witnessed over the past 50 years - by recalling his childhood days. The second booth is also a telephone booth conversation with a personified mangrove. This sheds light on the effects of human activities such as deforestation and pollution on the biodiversity and the mangroves of Mumbai. The last booth was an interaction with Malhar Kambe. Malhar Kambe, started the Dadar beach clean-up in September 2017. After a year, he realised the waste in the beach comes from the Mithi River which

brought on the Mithi River Cleaning Initiative at Mahim Creek every week.



Another water-related exhibit was the World of Plastics. The highlights of this exhibit was a walkthrough art installation made out of garbage recreating the Arabian Sea - known as the Plastic Tunnel.



In 2022, being the only child in the MuSo thinktank - I ideated the content with the team and developed the 'microplastics' spark consisting of a video, water-plastic filtration activity, culminated with a 'postcard' - as a reflection of the child's learning. I also assessed and evaluated the Water Detective workshop. Inspired by Malhar Kambe, I have been attending beach-cleanups around Mumbai. Working closely with the design team, I also had a say in the overall appearance and features of the museum. I recall once expressing my opposition to the inclusion of a waterfall in the Museum, primarily because of concerns regarding excessive water consumption and wastage.

MuSo themselves aim to help water pollution. The design team have incorporated only low flow taps in each MuSo Lab, and in each bathroom at the Museum. By installing flash tanks, MuSo recovers the energy from hot water or steam that would have otherwise been wasted, and converts it into usable power or heat. MuSo uses a myriad of energy saving and sustainable devices - they even considered reusing tap water in the toilet flush known as 'greywater recycling', but it doesn't prove to be the safest, especially for children. Additionally, the Museum also incorporates rainwater harvesting as part of its sustainable practices.

# The Museum of Solutions

Children's Panel - June 2019

In the last Children's Panel meet, we took children through prototypes of few exhibit ideas followed by an ideation and feedback session.



## Plastic Tunnel

Children walked through a tunnel full of everyday waste plastic, which sensitized them about the scale of the plastic pollution.



## Story of stuff

Children understood how the ordinary everyday objects are made, where they come from and what happens to them once they are used.



## Dump it right!

Children learned about segregation and recycling of waste through different video games.



## Ideation

A discussion and feedback session in which, children came up with many interesting ideas to develop this gallery in the museum.



## COMMENTS

What I can do better:

- Build on this, do active work now connecting with the Koli community - make a film etc. do beach cleanups
- Make the connection and flow better.

What I need help with:

- Structure
- Report Format - not make it like an essay.
- How to maximize the resources and make a main idea for this.