

Reducing the Pollution of Mithi River: A Waste Disposal Intervention

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Water may be a crucial part of our lives: whether or not we're cooking, cleaning, washing, or drinking, we tend to acquire contact with water in many forms every day. We assume it to be clean and safe, but harmful bacteria can even contaminate drinking water. These harmful bacteria aim at breeding and multiplying in our water systems (World Health Organization, 2016). One of the leading causes for this is **stagnation**—water remaining stationary for an extended period of time. Standing water, before stagnating, acts as a breeding ground for harmful bacteria and becomes stagnant (Swachh Bharat Mission, 2020). Malaria imposes a tremendous socio-economic burden on humanity and, with six other diseases, accounts for 85% of the global infectious disease burden. About 2020 million people are exposed to the risk of contracting malaria throughout the globe. In the Southeastern Asian Region of WHO, of 1.4 billion people living in 11 countries, 1.2 billion (mostly living in India) are exposed to the risk of malaria. However, Southeast Asia contributed to only 2.5 million cases globally to the burden of malaria. Of this, India alone contributed 76% of the total cases (Ashwani, et al. 2007).

This paper focuses on slum dwellers living along the Mithi River, Maharashtra, and directly using the river for their garbage and subsequently, causing small pockets of water to be obstructed and stagnate. Water Stagnation is also a significant contributor towards the foul stench in and around the community. The ultimate goal of this paper is to understand the behavior of the people of the community with respect to garbage disposal and design a solution that will allow the residents of the area to live hygienically without the presence of unpleasant smell and sight. Using various research tools such as surveys, interviews and brainstorming, insights from people of the society and the target group were taken to tackle the need of the hour and wishes. The main insights found throughout this study are that domestic waste is disposed of in the river because there is no proper trash pick-up for the community. The band-aid solutions without planning are not a holistic approach to stop the waste disposal in the river. Maharashtra Governmental plans have not been able to conduct slum rehabilitation or the construction of riverfront to make the project self-sustainable yet.

Lastly, it discusses designing a solution that will help understand and provide a system to encourage the proper usage of waste disposal elements. The proposed solution involves an artificial plant with solar panels that will be a part of a bigger recreational environment along the river bank. This plant works by tracking the amount of garbage being collected in the community bins and along with smart technology it translates this information to the solar pot in order to start or stop its functioning. The solution aims at being sustainable by including the use of solar energy to improve the living conditions of the slum. The solar plant's main features are light-weight, portable, camouflaging and low on maintenance. This system will grow in the future by incorporating various activities such as cultural events, health drives, word of mouth,

social media, tourism as well as celebrity endorsement promoting wellness of the city. It can be promoted in schools and colleges for teenagers during orientation lectures to make them more sensitive towards pollution of natural resources. We expect that this product and system design will certainly help people of the community gradually increase their proper usage of garbage bins and indulge in a healthier community mindset.

How often are the drinking systems maintained and cleaned?
63 responses

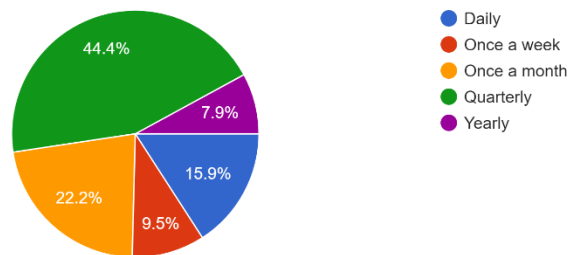


Figure 1 Comparison of the maintenance of drinking water systems

Keywords- Water stagnation, sustainability, domestic waste, Urban slums in Mumbai, India

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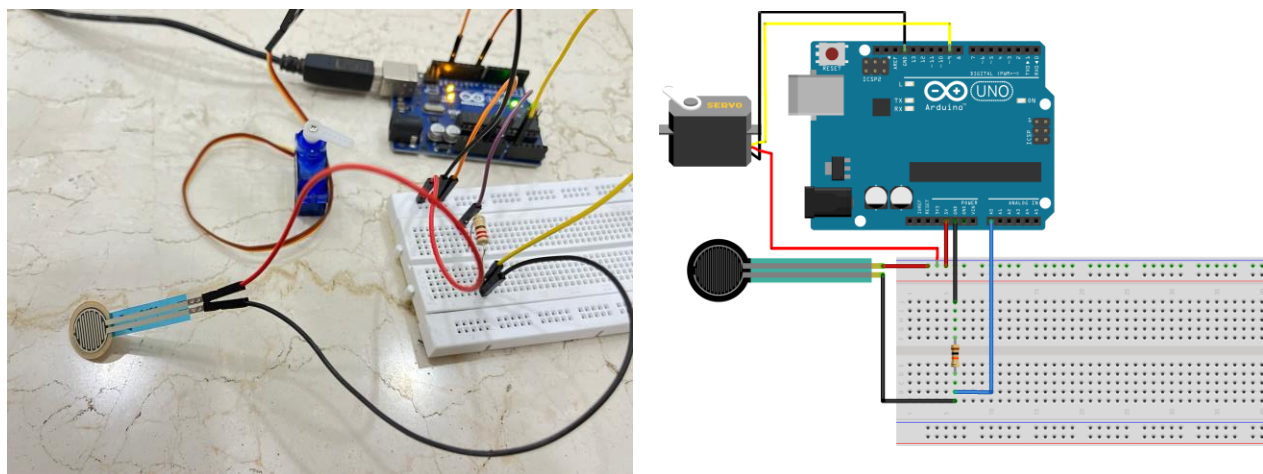


Image 1 Technology involved in the making of the Solar-plant