

Combat Plastic Entering in Kanpur City, Uttar Pradesh, India Marine Environment

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Abstract : The city of Kanpur is located in the terrestrial plain area on the bank of the river Ganges and is the second largest city in the state of Uttar Pradesh. The city generates approximately 1400-1600 tons per day of MSW. Kanpur has been known as a major point and non-points-based pollution hotspot for the river Ganges. The city has a major industrial hub, probably the largest in the state, catering to the manufacturing and recycling of plastic and other dry waste streams. There are 4 to 5 major drains flowing across the city, which receive a significant quantity of waste leakage, which subsequently adds to the Ganges flow and is carried to the Bay of Bengal. A river-to-sea flow approach has been established to account for leaked waste into urban drains, leading to the build-up of marine litter. Throughout its journey, the river accumulates plastic – macro, meso, and micro, from various sources and transports it towards the sea. The Ganges network forms the second-largest plastic-polluting catchment in the world, with over 0.12 million tonnes of plastic discharged into marine ecosystems per year and is among 14 continental rivers into which over a quarter of global waste is discarded. 3.150 Kilo tons of plastic waste is generated in Kanpur, out of which 10%-13% of plastic is leaked into the local drains and water flow systems. With the Support of Kanpur Municipal Corporation, 1TPD capacity MRF for drain waste management was established at Krishna Nagar, Kanpur & A German startup- Plastic Fisher, was identified for providing a solution to capture the drain waste and achieve its recycling in a sustainable manner with a circular economy approach. The team at Plastic Fisher conducted joint surveys and identified locations on 3 drains at Kanpur using GIS maps developed during the survey. It suggested putting floating 'Boom Barriers' across the drains with a low-cost material, which reduced their cost to only 2000 INR per barrier. The project was built upon the self-sustaining financial model. The project includes activities where a cost-efficient model is developed and adopted for a socially self-inclusive model. The project has recommended the use of low-cost floating boom barriers for capturing waste from drains. This involves a one-time time cost and has no operational cost. Manpower is engaged in fishing and capturing immobilized waste, whose salaries are paid by the Plastic Fisher. The captured material is sun-dried and transported to the designated place, where the shed and power connection, which act as MRF, are provided by the city Municipal corporation. Material aggregation, baling, and transportation costs to end-users are borne by Plastic Fisher as well.

Keywords : Kanpur, marine environment, drain waste management, plastic fisher

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