

**DESIGN IMPACT >>>>
>>>>>>>>>>>> MOVEMENT**

A Social
Initiative by



UNMANAGED WASTE STREAMS AT BENGALURU LAKES



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THEME: WASTE MANAGEMENT



UNMANAGED WASTE STREAMS AT BENGALURU LAKES

STAKEHOLDER

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Core Issue

Trash booms deployed along stormwater drains near Agara Lake and Madivala Lake intercept large volumes of floating waste before it enters the lakes. However, the inflow is highly contaminated with mixed organic and hazardous medical waste. This not only complicates waste segregation but also creates unsafe working conditions and limits the long-term impact of the intervention.

Constraints

- Mixed waste composition (plastics entangled with wet waste) makes manual segregation labor-intensive and inefficient.
- Hazardous medical waste (needles, syringes, broken bottles, blood-stained textiles) poses direct health risks, even when protective gear is used.
- Protective equipment like waders is expensive and still does not fully safeguard against unsafe exposure.
- No monitoring or accountability mechanisms exist to trace illegal dumping into rajakaluves.
- Non-recyclable plastics, especially PU foams, currently have no downstream pathways and typically end up in landfills.

Context

Urban lakes in Bengaluru act as receivers of stormwater mixed with unmanaged waste streams. Despite interventions such as trash booms, the absence of segregation, hazardous waste management, and accountability frameworks reduces their effectiveness. Worker safety is compromised, and long-term sustainability is challenged by the absence of circular solutions for non-recyclables like PU foams. Addressing these interconnected challenges requires both systemic and technical exploration.

Groundwork to be considered

- Waste characterization at rajakaluve inlets, understanding the composition, volume, and variability of inflows.
- Occupational safety frameworks for waste interception teams, including design and cost-effectiveness of protective gear.
- Methods for monitoring and accountability in waste disposal into stormwater drains.



Groundwork to be considered

- Material science approaches for extending the shelf life or re-purposing non-recyclables like PU foams.
- Environmental and health risk assessments related to hazardous waste presence in lake systems.

Existing Systems

- Trash booms intercept floating waste but lack integrated technology mechanisms for segregation or safe handling.
 - Learn more: [Watch](#)
- Current reliance on costly protective waders leaves safety gaps in exposure management.
- Waste disposal into rajakaluves remains unmonitored, with no deterrents against illegal dumping.
- PU foams and other low-value plastics are diverted directly to landfills without reuse strategies.

Additional Information

- **Waders:**
 - Full-body waterproof overalls with boots attached.
 - Materials: PVC, neoprene, or rubber.
 - Types: chest waders (most common), hip waders, thigh waders.
 - Limitation: protects legs/torso from water, but not from puncture hazards (needles, glass).

