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A prospective management plan for delimiting insitu exposure of workers within typified material recovery facilities

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Statement of the Problem: Material Recovery Facilities (MRFs) serve as an intermediate process in the ex situ management of municipal solid waste and the indiscriminate dumping into sanitary landfills. The Solid Waste Rules, 2016 paves way for systematizing such facilities in order to operationalize the 2016 recommendation by the Ministry of Housing and Urban Affairs under the Solid Waste Management and Handling Manual that recognizes dhalaos or masonry storage depots or area level waste collection centers as unhygienic, environmentally unsafe and unsuitable for secondary waste collection. However, the initialization of MRFs are at a seminal stage, presents immense formative scope that brings worker health discourse at a centre stage and recommends suitable measures that would inform municipal bye-laws governing the management and operation of these sites.

Objectives: 1. The objective of the proposed study is to explore the current status of implementation of guidelines for MRFs with respect to the recommended standards in Delhi. 2. To create exposure profiles and understand the pathways of exposure of waste workers engaged in sorting activities within established MRFs categorized on the basis of its structural and operational formalization. 3. Develop a multi-pronged approach to make suitable recommendations to enhance current design standards and operating protocols for MRFs targeted at the reduction of exposures and ensure worker safety.

Methods: The study proposes to follow a mix of methods to triangulate and achieve the intended outcomes. A landscape analysis of the prevalent frameworks and the current implementation paradigms under the existing bye-laws through the review of policy documents to make epistemic and ontological inferences followed by interviews with stakeholders will be done. Personal exposure measurements would be carried out on MRF workers (for a statistically significant sample size) to analyze their occupational exposures to PM2.5, and toxic heavy metals (THMs). Situational assessment of operational MRFs in the city of Delhi using interviewer administered quantitative and qualitative questionnaire with waste workers and other stakeholders involved in the process will be carried out.

Significance of Study: Generate evidence-based recommendations to assess and improve occupational health of waste-workers within ultra-local spaces vital to the overall waste-management conundrum in urban centres alongside environmental justice discourses.