Environmental Engineering and Management Journal

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu

"Gheorghe Asachi" Technical University of Iasi, Romania

DEVELOPING PARTICIPATORY OCCUPATIONAL HEALTH, SAFETY, AND ENVIRONMENTAL (HSE) STRATEGIES FOR SMALL-SCALE AND UNDER-RESOURCED WASTE BANKS

Fidyasari Kusuma Putri[1*], Binaridha Kusuma Ningtyas[2], Lyya Supriono[1], Annisa Rahmadina[1]

[1]*Program of Professional Engineering, Universitas Jember, East Java, Indonesia, 68121*
[2]*Department of Government Science, Universitas Muhammadiyah Jember, East Java, Indonesia, 68121*

Abstract

The absence of a systematic Occupational Health, Safety, and Environmental Protection (HSE) framework remains a barrier to the sustainability of community-based environmental initiatives, particularly in urban areas underserved by formal waste services. This study aimed to develop a participatory HSE implementation strategy tailored to the operational realities of a small-scale waste bank branch in Jember Regency, Indonesia. The data were collected through field observations, semi-structured interviews, SWOT-based questionnaires, and focus group discussions (FGDs), ensuring community involvement throughout the process. Results show that existing HSE practices are informal, fragmented, and dependent on individual initiative, with limited infrastructure and no institutionalized procedures. SWOT analysis positioned the case in a turn-around quadrant (IFAS: –0.116; EFAS: +0.431), highlighting the need to strengthen internal capacity while utilizing external opportunities. Four strategic priorities were identified as provision of collective personal protective equipment (PPE), practical HSE training, simplified standard operating procedures (SOPs), and cross-sector partnerships. To guide implementation and ensure continuous improvement, the strategy was structured within the Plan–Do–Check–Act (PDCA) framework. The study contributes a replicable and context-sensitive model for improving occupational safety and enhancing the socio-ecological resilience of under-resourced waste bank branch systems through participatory planning.

Key words: community participation, Indonesia, informal sector, SWOT, waste bank

Received: July, 2025; Revised final: September, 2025; Accepted: November, 2025

* Author to whom all correspondence should be addressed: E-mail: fidykp.teknik@unej.ac.id; Phone: +62 812-3391-2858