ABSTRACT

Open Burning of Household Waste in Rural Kutai Kartanegara, East Kalimantan: A Mixed-Methods Study

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Background: Open burning of household waste is practiced by an estimated 48–67% of Indonesian households, more often in rural areas, and poses respiratory health risk. Evidence is mostly national or urban; few studies pair household data with stakeholder explanations in rural villages. We studied Kutai Kartanegara, East Kalimantan, a field-learning site without a community waste facility (TPS3R).

Objective: To assess household waste management practices and explore stakeholder-reported barriers and needed support

Methods: We conducted a mixed-methods study in June 2026. Ninety household representatives, drawn from 1,446 households, completed a questionnaire. The sample size was determined using the Lemeshow formula and allocated proportionally across four hamlets, with participants recruited by convenience sampling. Direct observations were also recorded. A focus group discussion (FGD) with 18 stakeholders (village officials, Village Consultative Body members, Posyandu [integrated health post] leaders and cadres, and health-center staff) was held to validate and contextualize the survey findings. FGD transcripts were thematically coded.

Results: Most households (92.2%, n = 83) burned waste in their yards, 5.6% (n = 5) recycled or composted it, and 2.2% (n = 2) used waste-officer collection. Open containers were used by 90.0% (n = 81) of households, and burning near homes was observed. FGD participants reported that there was no nearby final disposal site (TPA) and that a TPS3R proposal had stalled. Fee-based neighborhood collection existed but had no disposal destination. Participants perceived burning as the only practical option and called for district-level support.

Conclusion: Open burning was the dominant practice, and stakeholders attributed it mainly to the absence of disposal infrastructure, although individual determinants were not assessed. Pairing household surveys with FGDs revealed system-level barriers, suggesting that village-level programs alone are insufficient. District-level TPS3R advocacy and exposure monitoring should follow.

Keyword : Keywords: household waste; open burning; mixed methods; focus group discussion; East Kalimantan