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Research Article

APPLICATION OF IPCC MODEL IN METHANE EMISSION POTENTIAL EVALUATION IN SELECTED LANDFILLS OF TAMIL NADU

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Abstract: In India it is observed that more than 90% of Municipal Solid Waste (MSW) is disposed on land without taking any specific precautions. Methane emission from landfills amount to 6 to 20% of total methane emission from the anthropogenic sources. It is highly imperative to assess the landfill methane (CH_4) emission from such sources. Application of models for inventorying and replicating the methane emission to the wide area is crucial and critical for determination of the management practices required to be followed to mitigate global warming. Different models *viz.*, IPCC, Theoretical First Order Decay model (FOD) and USEPA regression models were available for assessment. Out of the available quantification techniques, the model two and three need extensive data on number, size and quantity of waste deposited in landfills of respective areas. The Chennai population according to 2011 census was recorded as 4.68 million, from this source, the total amount of MSW generated is 2738 tonnes per day, out of this only 1826 tonnes per day reaches landfill sites. Based on IPCC model, the Methane generated in Chennai region is estimated as 0.010 Tg/yr and is having a perfect agreement with seasonal integration flux. The required information not enough in available in India for fitting parameters in FOD and USEPA regression models. The scope for the IPCC model used here for Chennai region may be extrapolated extensively to the other areas.

Keywords: *Landfill, MSW, Methane emission, IPCC*

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