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Emissions from waste burning, uneven rainfall and flood events as predictors of climate change effects in a Nigerian community

Flooding and waste management related problems have become matter of public health concern in the last few years in Ibadan, Nigeria. Over the period 1985 to 2014, it has affected more than 11 million lives with a total of 1100 deaths and property damage exceeding US\$17 billion. It is argued that more robust and scientific approaches to flood risk mitigation such as: flood modeling and vulnerability assessment are lacking. In this study, waste management activities at Kube-Atenda in Ibadan with a focus on greenhouse gases emissions (GHS), rainfall pattern and occurrence of flooding were investigated. Data were collected, using calibrated digital meters; portable global positioning system (GPS) device and ArcGIS 9.3 to develop maps of GHG distribution pattern in the community, Intergovernmental Panel on Climate Change (IPCC) model for GHG generation potential of solid waste burning in a year and, gamma and Weibull distribution for prediction of rainfall pattern and flooding in the area. The levels of GHGs reduced with distance away from the dump site and were higher than regulatory limits. The quality of outdoor air was very poor and in one year, burning of waste can introduce 70,000 Gg/yr. Since $\beta=6.744$ is positive, in three years from 2014 upward, there is about 40% chance of rainfall exceeding the threshold of 1400 mm annually, which could lead to flooding in the study area if there is no proper management plan to cater for the amount of rainfall.

Biography

Hammed Taiwo Babatunde is a Lecturer in the Department of Environmental Health Sciences, University of Ibadan. He received his Bachelor's degree in environmental management and toxicology from the University of Agriculture, Abeokuta, Ogun state in 1999 and both Master's (2009) and PhD degrees (2015) in Public Health (Environmental Health) from the University of Ibadan, Nigeria. He has worked in different capacities with NGOs that deal with environmental sanitation and management since 1998. He was also a Netherlands Fellowships Programs (NFP) award winner for UNESCO-IHE online course on Solid Waste and Engineering (2008) and also received "Roy F Weston Award", Widener University, Philadelphia, Pa, USA, 2016 in recognition of his contributions to the field of Solid Waste Technology and Management. His research interests span areas such as: solid waste recycling (composting, material recovery and biogas), sewage treatment and excreta disposal. He has published papers in both local and international journals.

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