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EVALUATION OF LAND FILL EMISSIONS IN THE UNITED ARAB EMIRATES

Abstract

This study focuses on prevention of harmful gases and radiations coming out of landfills using satellite remote sensing and satellite imagery. Landfill is the oldest and the most common method of waste disposal which is done by the burial of tons of waste every day. Waste coming from household, industries, medical waste, plastics, etc. is disposed in these sites. These wastes are directly or indirectly related to microorganisms which react with each other and emits landfill gases. Landfill gases primarily consists of Carbon dioxide (CO₂) and Methane (CH₄), which are both greenhouse gases and this can lead to environmental problems such as global warming, air pollutions, unexpected climate changes, etc., while also affecting the health of people. Landfills are radioactive and are installed with radiation detector that detects radiations. Waste that emits high radiations are by law disposed in specially licensed radioactive waste repositories. The aim of this study is to keep a track of gases and radiations coming out of these landfills by using remote sensing and satellite imagery. With the help of satellite imagery and using various geographic information system (GIS) such as ERDAS IMAGINE, ENVI or ArcGIS software, the landfills can be monitored. This will help the authorities (Municipality/Land Department) in keeping a track record of landfill gases and radiations by plotting graphs of everyday data and will be able to reduce landfill emissions. This study helps the authorities to change the landfill to other locations away from human habitat in case of higher pollution level.