

# **Analysing Flood Risk in Lagos Island Local Government Area of Lagos State**

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**Key words:** Flooding; Modelling; Risk Assessment; GIS

## **SUMMARY**

Lagos Island is a low lying area in Lagos State, plagued by flood on a yearly basis. When intense rainfall occurs, this location is usually flooded, leading to loss and damage of property. In July 2012, extreme rainfall events occurred in this location and this led to severe flooding that caused serious damage to both public and private properties. More extreme flooding occurred in this same location in July 2017. Hence, in this study, the HEC (Hydrological Engineering Centre) modelling packages such as HEC-HMS and HEC-RAS software packages as well as ARCGIS software are used to simulate flood occurrence in Lagos Island. Light Detection and Ranging (LIDAR) and GIS are used for the flood modelling and mapping. LIDAR data, rainfall data, landuse maps and GPS points are input data layers in this study. The results indicate that the average flow depths within the study area is 3.2m and over 60% of the Residential and Commercial buildings are at risk. Flood hazard maps are also generated to identify the areas within the city with high risk of flooding. Three dimensional model of the location with embedded flood inundation map are also generated for a better understanding of the severity of flooding in the location.