

Flood Disaster Prevention and Mitigation in Nigeria Using Geographic Information System

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Abstract : Natural disasters like flood affect many parts of the world including developing countries like Nigeria. As a result, many human lives are lost, properties damaged and so much money is lost in infrastructure damages. These hazards and losses can be mitigated and reduced by providing reliable spatial information to the generality of the people through about flood risks through flood inundation maps. Flood inundation maps are very crucial for emergency action plans, urban planning, ecological studies and insurance rates. Nigeria experience her worst flood in her entire history this year. Many cities were submerged and completely under water due to torrential rainfall. Poor city planning, lack of effective development control among others contributes to the problem too. Geographic information system (GIS) can be used to visualize the extent of flooding, analyze flood maps to produce flood damaged estimation maps and flood risk maps. In this research, the under listed steps were taken in preparation of flood risk maps for the study area: (1) Digitization of topographic data and preparation of digital elevation model using ArcGIS (2) Flood simulation using hydraulic model and integration and (3) Integration of the first two steps to produce flood risk maps. The results shows that GIS can play crucial role in Flood disaster control and mitigation.

Keywords : flood disaster, risk maps, geographic information system, hazards

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