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Spatial Analysis for Flood Control by Using Environmental Modeling

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ABSTRACT

To create the final spatial information and analysis, flood hazard maps and land development priority maps and information, data for the flood events to 2009 in north of Iran were incorporated with using Geo-spatial Information System data of physiographic divisions, geologic divisions, land cover classification, elevation, drainage network, administrative districts and population density and environmental parameters modeling. Special analysis also attention was paid to population density for the construction of the land development priority map and using satellite image analysis to determine land use changes and analysis of geo-spatial information, because highly dense populated areas represent the highly important urban and industrial areas. While geo-information technology offers an opportunity to support flood management adequate geo-spatial information is a prerequisite for sustainable development, but many parts of the world lack adequate information on environmental resources. Such information providing, which serves as an important tool for decision-making in land use planning, can help provide effective information to natural disaster management. This paper develops a framework for flood control and begins with some general comments on the importance of land use planning and outlines some current environmental issues and then presenting environmental models to use in disaster management plan by using GIS and remote sensing results. Flood control is a complex problem that requires cooperation of many scientists in different fields. The article also discusses the role that geo-information and environmental planning and GIS and remote sensing technology play in disaster management control to reduce negative impacts of flood and present proper alternatives for developing of Gorganrood in the north of Iran. Advanced high-resolution sensor technology has provided immense scope to the decision makers for analysis of flood and damages details using GIS and remote sensing.

KEYWORDS

Environmental Modeling, Land Use Planning, Geo-Spatial Information, GIS

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