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FLOOD VULNERABILITY ASSESSMENT AND EVACUATION PLANNING FOR RURAL POPULATIONS IN ANHUI PROVINCE, CHINA USING ANALYTIC HIERARCHY PROCESS

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Abstract

This study develops flood vulnerability assessment and evacuation planning for rural villages in Anhui Province, China. This study performed flood vulnerability assessment using the Analytical Hierarchy Process (AHP) to develop appropriate emergency plans for rural villages in Anhui Province, China A two-dimensional hydrodynamic model simulated a 100-year flood scenario to extract flood hazard indicators. The Analytical Hierarchy Process (AHP) determined village vulnerability indicators and assigned flood vulnerability levels from 1-5 to grid cells through fuzzy comprehensive evaluation integrated with GIS. High vulnerability villages (levels 4-5) required planned escape routes to designated schools as shelters. Lower vulnerability villages (levels 1-3) were recommended emergency plans tailored to local flood policies. This approach provides an important decision support tool to reduce flood risk for rural populations in Anhui Province.

Key words: Analytic Hierarchy Process (AHP), ArcGIS, floods, vulnerability

Received: July, 2023; Revised final: September, 2023; Accepted: September, 2023; Published in final edited form: September, 2023

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