

Dambreak Flood Analysis Using HEC-RAS and GIS Technologies

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Abstract : The potential risks associated with dam break flooding could be considerable and result in major damage, including loss of life and property destruction. In the past, Algeria experienced such flood disasters; let's recall the failure of Fergoug dam in 1881, this accident cost 200 lives, many houses and bridges were destroyed by the flooding. Recently the Algerian government have obligated to dam owners the development of detailed dam break Emergency Action Plans for its 64 major dams. The research presented here was conducted within this framework, Zardezas dam which is located in the city of Skikda in the North East of Algeria was the case of study. The model HEC-RAS was used for the hydrodynamic routing of the dam break flood wave. In addition, Geographic Information System (GIS) was used to create inundation maps and produce a visualization of the flood propagation in the Saf-Saf River. The simulation results that demonstrate the significance of Zardezas dam break flooding; constitute a real tool for developing emergency response plans and assisting territorial communities in land use planning.

Keywords : dam break, HEC-RAS, GIS, inundation maps, Emergency Action Plan

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