Flood Damage Assessment in Ghamsar and Ghohrood Watershed Basins Using HEC-FIA

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Abstract

Floods are considered as most destructive among all natural hazards which impose lots of damages on human societies. Hence, it is important to estimate such damages and losses and to determine flood impact areas for management plans. HEC-FIA software as a new model (Sep. 2012) was used in Ghohrood and Ghamsar watershed basins to estimate flood-driven losses and impacts. In this model, HEC-RAS and HEC-Geo RAS are used to produce inundation map in different return periods of flood as HEC-DSS file and by using the data collected in relation to regional agricultural land, building and human, human and financial losses are directly estimated. According to the results of this model, agriculture, building and human losses respectively in Ghohrood watershed are about 354 million rials with 24 buildings affected, and in Ghamsar watershed this is about 12879 million rials with 36 buildings damaged. The advantages of this model over the previous models are estimating the direct economic and human losses for what has occurred and for possible floods in the future. The results can help with watershed management, flood insurance and risk management.

Keywords: Economic estimates of flood damage, Flood zoning, HEC-Geo RAS, HEC-RAS, HEC-DSS.

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