Nyamwamba River training

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Nyamwamba River in the foothills of the Rwenzori Mountains, western Uganda presents a challenge in terms of long and recurring flood hazard. Despite a long history of flood control management in the river, the river continues to bring a lot of misery through extensive flooding. This contribution reconsiders the flooding problem in the Nyamwamba River and presents an in-depth analysis of river hydraulics. The main objective of the study is to propose an engineering service to carry out a complete hydraulic design of the required measures to control the complex river flood hazards and optimize the required measures regarding construction time and total costs considering the site conditions. In this study HEC-RAS software (River Analysis System, of US Army Corps of Engineers, Hydrologic Engineering Center) is used to perform 1D hydraulic simulation of the river stream and Civil 3D is used in parallel to produce the geometry of the proposed engineering service which will be used by HEC-RAS and calculate the quantities. Present study finds out that, to increase the river capacity with minimum cut volumes to accommodate the 100 years flow, reshaping (training) the river cross section with the ability (where necessary only) to use part of the cut volumes to form raised embankments on the sides of the reshaped river is the ideal solution to this study problem.