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TECHNICAL SOLUTION TO REDUCE SOIL EROSION PRODUCED BY TAZLAU RIVER IN TARATA PERIMETER, ROMANIA

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Abstract

The paper analyses the hydrologic parameters of the Tarata perimeter with alluvial soils, in order to estimate the values of the Tazlau River behaviour, in case of flooding. Tazlau River flow rate has an annual average value of 4.9 m³/s, with a torrential character when the level of precipitation is increasing. The analysis of this perimeter is of interest today as a result of the existing excessive erosion. We identified a possible solution to reduce soil erosion through the exploitation of mineral aggregates, releasing riverbed, which leads to river bed regularization. This can reduce the effects of any potential floods, which have a significant social and economic impact. The proposed solution is a technical one, resulted from the estimation of hydrologic parameters for the modified river bed. The calculated hydrologic parameters were presented in two situations: before, and after the exploitation process. The flowing sections, the resulted flow rates, the side of the long edge, the washed perimeter, the hydraulic radius and the flow speeds were calculated for 15 profiles, based on the roughness values of the Tazlau River. The results of the study show that during the past four years, the channel of Tazlau River has changed its flow on a distance of about 2 km. The effects of soil erosion can be noticed on approximately 4 ha. The increase of the washed perimeter and hydraulic radius leads to a decrease of water flow speed for the same flow rate, with beneficial effects on the erosion phenomenon.

Key words: flow speed, hydrodynamic parameter, river regularization, soil erosion

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