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## **IMPACT OF HYDRAULIC SCHEMES ON OLT RIVER AND ON ITS FLOODPLAIN ENVIRONMENT IN CIUC DEPRESSION, HARGHITA COUNTY, ROMANIA**

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### **Abstract**

This paper presents the effects of regularization and embankment of the Olt River and drainage of its floodplain on the groundwater table from meadows and on the erosion base levels of tributaries within Ciuc Depression. The hydraulic works reduced the wetlands and had important impact on the aquatic flora and fauna of the river and its floodplain. Measurements and observations (before 1985 and after implementation of hydraulic works in 2008) undertaken upon the river, upon the drainage systems from the flooding area and their functionality underline the negative effects of these works on the environment and remedies were proposed. Upstream section of the regularized river (between Miercurea Ciuc and Sanraieni) presents erosions, dropping of the groundwater level, and inutility of drainage. On downstream section (Sanraieni-Tusnad) the silting processes of the river worsen discharge conditions of the drained water. The river section erosion, the lowering of water level in channel, overlaid with excessive drainage led to declining of groundwater table, which dries up peat layers, lead to an increasing frequency of the smoldering self-ignition in large peat areas. Due to peat burning the environment is affected by air pollution and total sterilization of soil by living organisms. Proposed remedies refer to the river bed bottom stabilization at the designed levels using thresholds, water level controllers within drainage systems and a new operating regulation.

*Key words:* drainage of the meadow, ground water table dropping, peat smoldering combustion, river regulation, riverbed erosion

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