

The Exploitation of Gold and its Impacts on the Sedimentary Balance of the Upper Niger and The Bani in Mali

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ABSTRACT

The upper course of the Niger and Bani Rivers in Mali flows on Birimian gold-bearing terrain. Therefore, numerous gold mining sites exist in the areas. The modern mines extract the primary mineral from Birimian rocks whereas, traditional miners work on secondary minerals on colluvium and alluvium. Traditional mining has evolved these years with the intrusion of heavy equipment such as dredges brought by external miners principally Chinese. These changes provoke big changes in the sedimentary budget of the rivers. The washing of sediment for gold separation, the dredge remobilizing alluvium from riverbeds are providing more sediments in the river systems that express in the landscape by Chanel bed migration, the cutting-off of effluent from the Niger River. The impact is seen in the Niger Inland Delta, where slopes are very low, known as a sedimentary trap. Usually, 50% of the sediments brought by the Niger and the Bani Rivers are stored in this area. Diachronic remote sensing data and field collection of sediments were used to analyze the river channel configuration modification and the cutting off of the effluents from the Bani and the Niger Rivers. The results show an increase of the sediments brought along the channel of the principal rivers and more than 60 effluents cut off the Bani River and that dried up were identified. As traditional mining continues and is getting more important, more consequences have to be foreseen in the near future.

Keywords: Gold mining, Niger River, Bani River, Sedimentary budget, Mali

