

## **Impact of the Medjerda sedimentary fluxes on the morphodynamic equilibrium of the northern coast of the Gulf of Tunis (Medjerda-Raoued coast).**

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The reconstruction of the Paleo-geomorphological context of the new Medjerda River delta was the subject of this study. The study area is the new mouth of the Medjerda River which leads to the El-Hissiane coastal region, Gulf of Tunis. A core drilling mission was carried out on the new delta in August 2014. Two sedimentary cores CEM 1 (1.68 cm) and CEM 2 (80 cm), CEM 3 (42 cm) and CEM 4 (48 cm) in the he central zone of the Deltaic front, the levee area, the swamp area and the current shoreline. The methodological approach focuses on the multi-proxy approach performed on the sedimentary archives collected. The chronological study is based on the  $^{210}\text{Pb}$  /  $^{137}\text{Cs}$  method. The collected sedimentary archive consists of two well-marked sedimentary units. A basal part consisting of sandy sediment. A summit part characterized by a clay layer intercalated by silty levels. The change of sedimentary layers marks the establishment of a new delta on an old sandy beach. The silty levels mark small marine weather events that hit the coast of the Gulf of Tunis. The geochemical study shows variable concentrations of chemical elements (Fe, K, Al, Rb, Nb, Cr, Ti, Ba, Ca, Sr, Zr). Principal component analysis (PCA) shows that these chemical elements are grouped in 3 poles. A terrigenous pole, a marine pole and a third pole pole. The evolution of the geochemical signature shows an increase in terrigenous elements with the implementation of a new delta associated with a decrease in the contents of the marine treasures. The chronological method affirms that the speed of sedimentation is very important and that the Progradation of the new delta has been under fluvial dominance since 1939. The presence of a more sedimentary sedimentary layer constituted sediments probably revised during a strong flood. The new delta of the Medjerda passed through two radical geomorphological phases: a phase of progradation followed by an erosion phase. Under the effect of the human impacts of the river, the new delta has experienced several forms of degradation due to the reduction of the sediment load associated with the erosive action of the marine hydrodynamic agents.