



The Romanian littoral – coastal geomorphologic changes during the last half of Century (1961-2011); its impact on the coastal development and solutions for protection and rehabilitation

Mihaela Laurenta Alexandrov (1), Razvan Doru Mateescu (1), and the Razvan Doru Mateescu Team

(1) ¹N.I.M.R.D. “Grigore Antipa”, Blvd. Mamaia, no.300, Constanta, code 900581, ROMANIA, (2) ²University of Bucharest, Faculty of Geography, Bd. Nicolae Balcescu no.1 Sector 1, code 010041, Bucharest

Due to anthropogenic disturbance induced by the inland and coastal hydrotechnical works, the coastal processes on the Romanian Black Sea littoral are occurred under generalized unbalanced sedimentary conditions. These anthropogenic influences with a major effect on the evolution of the littoral processes are represented by decrease of solid discharge of the Danube River, as a consequence of the hydrotechnical works/dams extension in the reception basin, as well in the main course of the river (the most important are the hydropower plants from Iron Gates I&II/Portile de Fier I&II), and the perturbation of the longshore sediment transport, due to coastal constructions (related to navigation works: Sulina, Navodari, Constanta, and Mangalia – ports development, as well coastal construction for protection – groins and breakwaters, and cliffs consolidations).

The variability of the sea-land interface, for a period of 50 years, has been revisited on the basis of coastal survey of emerged beach profiles, GPS measurement and historical maps, developed on the Romanian littoral, from Sulina to Vama Veche (about 250 Km).

Certain vulnerable areas of the Northern and Southern Romanian Littoral Units are strongly influenced by inland hydrotechnical works, off-shore and shore-connected breakwaters, which at the time of the implementation were required at very short deadlines, thus making almost impossible the grounding research, according to the necessities and the concrete situations in the area. From these reasons, the protection systems implemented responded to the forecasts in different proportions.

The work presents the ongoing actions for the implementation of the coastal protections solutions as well as the coastal development plans in its complex approach and connections.

Key words: Romanian Black Sea Littoral, vulnerable areas, erosion control and coastal development