

COASTAL DYNAMICS AND SEDIMENTARY CHARACTERISTICS OF THE AREA INFLUENCED BY THE RIVER SALSO'S HYDROGRAPHIC BASIN (SOUTH SICILY)

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Since the 1970's, within the framework of research on "Littoral Dynamics" financed by funds from the Ministry of Public Education and the Ministry for University Scientific and Technological Research, the Operative Unit of Catania University has carried out the study of Sicilian shorelines (AMORE *et al.*, 1988, 1993; BRAMBATI *et al.*, 1992; AMORE & RANDAZZO 1993a), focusing both on its submerged mouth apparatus and on the relation between riverborne material reaching the sea and its longshore distribution.

Within the philosophy of the River Unicum - one of a link between the apical part of the hydrographic basin, the coastal strip and the continental shelf in front of it - the Salso river was studied, which is the most important river in Sicily with a length of 132 km and a drainage basin of 2050 km², and which has its origins in the southern side of the Madonie Chain and flows close to Licata on the western limit of the Gulf of Gela.

The drainage basin of Salso River, with the carbonatic outcroppings of Complesso Panormide in the northern area, of the Numidic Flysch and of the Argille Scagliose in the central one and finally of the Chalky - Sulphurous Series in the southern one, is characterized by a solid load composed for 90% by pelitic material.

At present the mouth apparatus, which had been advancing until the 1960's, is strongly retreating because of the reduction of solid and liquid load and because of the enlargement of the port of Licata, which has deeply modified the littoral drift.

The morphology of the bottom in front of the mouth apparatus, which is slightly indented and not very homogeneous with those nearby, shows a wave - dominated "delta" (GALLOWAY, 1975), and was once definitely more pronounced. It has a gentle convexity on both sides which makes it comparable to the curved "deltas" of FISHER (1969).

The grain size spectra map (DOWLING, 1977) shows the maximum sedimentation in the eastern sector, due to the influence of the port of Licata; in fact the eastern quay protects the mouth apparatus from western storms. For eastern storms this quay determines a local circular current towards the East which erodes the shoreline and deposits in the shallower waters. In the deeper waters, instead, which are not directly influenced by the quay, the currents are always westward.

The textural characteristics of the sediments, shown on the basis of NOTA's classification (1958), have permitted the distinction of five facies: littoral, frontdelta, frontdelta - prodelta transition, prodelta and transition to the platform, characterized respectively by sands, pelitic sands, very sandy pelites, sandy pelites and pelites.

In the compositional characteristics of the sandy fraction, quartz prevails and its areal distribution seems due to the riverborne material instead of the longshore drift.

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