



Large sediment budget of Algerian deltas

Michel Quinquès, François Sabatier, Edward Anthony, and Doriane Delanghe-Sabatier

Aix Marseille Université, CEREGE laboratory, Coastal Geomorphology and Management, Aix en Pce Cedex04, France

This presentation studies the causes of the widespread decline of Algerian coast as erosion watershed is among the largest in the world. Six areas including deltaic mouths of the wadis are studied by mapping methods, by modelling sediment transport in suspension and bed load as well as modeling the long-shore redistribution of sediment on the coast. If using the model of Probst (1992) to 5 parameters gives good results for quantifying sediment transport in suspension carried by the wadis, as the sites studied transport modelling along-shore by the methods of Kamphuis, CERC and Van Rijn can lead to conflicting data in relation to comments made. By trapping a significant portion of material carried by the wadis, the role played by dams in the sediment transport towards the coast is also considered and quantified in order to make a sediment budget in the total volume of 103 years. We evidence chronic deficit in sediment from the rivers in relation to dams constructions. Along the coastline, erosion is dominant and littoral cell sediment budget suggest offshore loss of sediments for each case. Even if hard engineering coastal structures locally stabilize the shoreline, a large retreat is observed. There is no doubt that these regions should resolve a huge sediment source to sink challenge during the 21th century.