

EFFECT OF COASTAL RECLAMATION ON THE DISTRIBUTION OF SUSPENDED SEDIMENT AND COASTLINE CHANGES AT MAP TA PHUT BY REMOTE SENSING

ABSORNSUDA SIRIPONG¹ AND MAETAVEE NUALLA-ONG²

¹Marine Science Department, Faculty of Science Chulalongkorn University, Bangkok 10330, Thailand

²Meteorological Department, Bangna, Bangkok, Thailand

The eight Landsat TM satellite data from 1987 to 2000 were analysed to study the effects of coastal reclamation on the distribution of suspended sediment and coastline changes at Map Ta Phut Industrial Estate (MTPIE). Using the image density slicing technique with false color composite, we can investigate the distribution patterns of suspended sediments. The coastal reclamation had blocked the longshore sediment transport in each season and cause both erosion and accretion along both side of the harbour.. The concentration of suspended sediment was higher during the strong Southwest Monsoon season than the Northeast Monsoon season. The data from the third band of Landsat TM have higher correlation to the distribution of suspended sediment than those from other bands. The mean correlation coefficient was 0.80.

The three Landsat TM satellite data in 1988, 1994 and 2000 at the same area were used to study the coastline changes by image difference method. The area of western coastline had been increasing more than that of the eastern coastline. The area of eastern coastline of the MTPIE had been decreasing more than that of the western coastline. The accretion and erosion of the western side during 1988 to 2000 was estimated as 5,250 and 6,975 sq meters per annum while that of the eastern coastline during the same period was computed as 4,650 and 11,400 sq meters per annum.