Coastal erosion in the Chao Praya River Delta

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The Chao Praya river mouth is a tide-dominated, drown-river-valley-type estuary located in Central Thailand. The river empties to the inner Upper Gulf of Thailand. With large sediment supply from the river, vast shoal existed in front of the river mouth. But upstream damming and navigational channel dredging for the last 60 years have deprived the coast of needed sediment. Turning mangrove forest along the shoreline in to shrimp, cockle or fish ponds has made bottom sediment susceptible to erosion under strong wave action. On top of this, land subsidence and sea level rise also accelerate the coastal retreat.
The aim of this paper is to explain in more detail how the aforesaid factors have contributed to the coastal erosion along the Chao Praya River delta. Daming Pasak River which is the main tributary of the Chao Praya River has trapped the river sediment by as much as 20×10^6 ton annually. For the past 40 years, land around the Chao Praya River mouth has been subsided about 1 m due to continuing pumping up ground water for human consumption. Sea level also rises about 0.10 m over the last 100 years. Wave measurement yielded only small significant wave height of about 0.20 m with wave period over three seconds. Strong wave action occurred during stormy condition can cause severe coastal erosion.

Record of geomorphological changes in Bengal basin, India during holocene through correlation of biostratigraphic zones

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Evolution of Bengal delta during last 10,000 years is revealed through critical multi proxy data analysis of C^{14} dated peat, peaty clay, soft grey clay sediments exposed in the seven sections of study area lying between 22^0 to 23^0 N 87^0 30' to 88^0 30' E. within 80 to 120 km. from present coastline in West Bengal, India. Multiple proxy data include macro, micro plant-animal-ichno remains of specific environment. Five biostratigraphic zones viz; BbBzH I-V above Barren zone have been identified. Correlation of Biostratigraphic zones together with the lithological and chronological data has identified distinct phases of geomorphological changes and evolution of deltaic Bengal Basin, India during Holocene. The study areas were arid upland before 7000 years; Flandrian transgression due to sea-level rise changed the geomorphology of the areas to estuarine and shallow marine condition during 7000 to 6500 cal years B.P. Deltaic estuarine geomorphology continued in the location during 6500 to 6175 cal years B.P. Seaward migration of the coastline with the mangrove ecosuccession started since 6175 cal years B.P. due to regression of the sea. The geomorphology of the areas gradually transformed to delta top to fresh water condition by ca 5000 cal years B.P. The coastline with the estuarine mangrove forest migrated 90 to 60 km south from the study areas by 4500 to 3000 cal years B.P. A shallow marine to delta front geomorphology existed 30 to 20 km inland from present coastline at this time. The Recent geomorphology of the southern Bengal delta developed during last 3000 years.

The discrepant signals of climate recorded by Holocene sediments of the North and East China monsoonal regions: a perspective from major elements characteristics

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Two sediment cores were retrieved respectively from enclosed Lake Daihai in the monsoon/arid transition zone of north china and Zhaoxiang (core ZX-1), Shanghai in monsoonal area of Yangtze River delta, Eastern China. Major element distributions and their ratios of the core sediments were employed to reveal the characteristic of Holocene climate in the two regions. It suggested that the distribution of major elements could serve as useful indicator