Evolution of the Holocene Deposits of the Red river Delta

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Based on analyses of lithofacies, paleontology, radiocarbon ages, and geodynamic characteristics, a Holocene history of sea-level fluctuation in the region of the Red River Delta is established. This history can be divided into three stages:

-***Estuarine-lagoon stage***. This stage can be correlated to the Holocene marine transgression. During this stage submergence rate of the basin was much greater than depositional rate, providing much space for sediment accumulation. This sequence is overlying on upper Pleistocene deposits, in which five sedimentary facies are identified.

-***Deltaic stage***. This stage corresponds to marine regression during the Middle to Late Holocene. During this stage accumulation rate exceeded submergence rate of the basin. A number of deltaic lobs were developed and propagated seaward. In this sequence, eleven deltaic sedimentary facies are identified.

-***Alluvial stage***. This stage began at the end of the Middle Holocene, when the shoreline restarted to migrate seaward. During this stage alluvial process was dominated and six alluvial sedimentary facies were found, covering upon the previous developed delta plain. Due to the influence of river, tide and wave processes, the Red River Delta plain was evolved into three types of delta plain: River dominated delta plain, tide dominated delta plain, and wave dominated delta plain