



Nature and evolution of the Quaternary coastal sedimentary wedge of the northern part of Java Island

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The Quaternary sedimentary architecture of Jakarta bay show a succession of marine to coastal plain deposits overlaid by present-day offshore deposits in relation to high sediment supply during the Late Cenozoic. As the NCICD's research project, the study of a dense network of high-resolution seismic profiles and 10 boreholes in the Jakarta Bay have led to the characterization of the sediment wedge preserved between the coast and the 30 m isobaths.

The upper part of the Quaternary wedge is composed of 6 seismic units separated by 5 major unconformities that are well-illustrated by isohypses and isopachs for each seismic units.

From the seismic configuration of each seismic units and identified sedimentary facies of this coastal sedimentary wedge allow to illustrate at least 3 types of depositional environments: Coastal plain deposits (Channels, Sand bars and lagoons, Units 1-3), deltaic to estuarine tidal channel systems (Units 4-5), and offshore deposits (Unit 6). These six units are bounded by major regional surfaces: unconformities in the basal units 1-3 show erosional surfaces with channelized base and interpreted as sequence boundaries. These lower sequences could be attributed to Saalien to Eemian glacial cycles.

The unconformity between Units 3-4 shows a remarkably channelized base and several deep incisions attributed to the Weichelian cycle (lowstand system tract).

Two last unconformities between Units 4-5 and Units 5-6 correspond to a transition from a tidal dominated ravinement surface to a mixed tidal and wave ravinement surface (Transgressive to Highstand system tract)

While it is assumed that Jakarta Bay has not experienced any tectonic activities during the Pleistocene, the paleogeography including coastal dynamics seem to be controlled by climatic and eustatic sea-level fluctuations and low rate of subsidence related to Isostasy.