

Tectonic Influence on Southeast Asian Carbonate Development during the Cenozoic

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Tectonically SE Asia is one of the most complex and active areas of the world. The warm, shallow waters of the region also host extensive and highly variable carbonate development with the highest global diversity of coral reef biota. Throughout the Cenozoic, tectonics has been a major control on the citing, development and demise of many of the carbonate platforms and may have influenced the development of the bio-diversity foci.

The whole remit of tectonics settings, such as continental passive margins, rifted margins or microcontinental blocks, island arcs, backarc, forearc, foreland and strike slip basins, have all occurred in SE Asia during the Cenozoic. These settings may vary temporally and spatially, but in each a variety of carbonate depositional systems developed, often on structural highs. End-member carbonate systems in all settings are isolated platforms, land-attached shelves, and more localised or transient carbonates, including fringing reefs, buildups, patch reefs or mixed carbonate-clastic deposits.

Tectonics, through subsidence, uplift, active faulting, tilting or associated silici/volcaniclastic input strongly affected facies variability, stratal/platform geometries, sequence development and carbonate demise. In turn, evaluation of the carbonate successions can help determine the timing of tectonic events, rates of movement and the dynamic interplay of factors influencing marine sedimentation.