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# The Collapse and Spreading of Sundaland (SE Asia); evolution and Boundary Conditions

Manuel Pubellier (1) and Christopher Morley (2)

(1) CNRS-UMR8538, Ecole Normale Supérieure, 75231 Paris, Cedex 05, France, (2) PTTEP, 27th Floor, ENCO Building, Soi 11, Vibhavadi-Rangsit Road, Chatuchak, Bangkok, Thailand, 10900

By the end of Mesozoic times Sundaland (the continental core of SE Asia) was an elevated area composed of granite and metamorphic basement on the rims; which suffered collapse and incipient extension, whereas the central part was stable. Most of the basins opened inside evolved since the Late Cretaceous in a manner that may be correlated to the conditions of the subduction in the Sunda Trench. The Sundaland promontory was surrounded by a large subduction zone, except in the north and was a free boundary in the Early Cenozoic. Starting from the Palaeogene, fractures initiated during the India Eurasia collision, and rifting began along large faults (mostly N-S and NNW-SSE strike-slip). The basins remained in a continental fluvio-lacustrine or shallow marine environment for a long time and some are marked by extremely stretched crust (Phu Khanh, Natuna, N. Makassar) or even reached the ocean floor spreading stage (Celebes, Flores). Western Sundaland was a combination of basin opening and strike-slip transpressional deformation. The configuration suggests a free boundary particularly to the east (trench pull associated with the Proto-South China Sea subduction; Java-Sulawesi trench subduction rollback). In the Early Miocene, Australian blocks reached the Sunda subduction zone and imposed local shortening in the south and southeast, whereas the western part was free from compression after the Indian continent had moved away to the north. This suggests an important coupling of the Sunda Plate with the Indo-Australian Plate both to SE and NW, possibly further west rollback had ceased in the Java-Sumatra subduction zone, and compressional stress was being transferred northwards across the plate boundary. The internal compression is expressed to the south by shortening which is transmitted as far as the Malay basin. In the Late Miocene, most of the Sunda Plate was under compression, except the tectonically isolated Andaman Sea and the Damar basins. In the Pliocene, collision north of Australia propagated toward the north and west causing subduction reversal and compression in the short-lived Damar Basin. Docking of the Philippine Plate confined the eastern side of Sundaland and created local compression and uplift such as in NW Borneo, Palawan and Taiwan. Transpressional deformation created extensive folding, strike-slip faulting and uplift of the Central Basin and Arakan Yoma in Myanmar. Minor inversion affected many Thailand rift basins. All the other basins record subsidence. The uplift is responsible for gravity tectonics where thick sediments were accumulated (Sarawak, NE Luconia, Bangladesh wedge). We conclude that the evolution of the basin is closely controlled by the absence or the arrival of continental crust at the boundary of Sundaland.