Geophysical Research Abstracts, Vol. 8, 00899, 2006
SRef-ID: 1607-7962/gra/EGU06-A-00899

Overview of the geomorphology of the Lower Mekong River Basin

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The Mekong River Basin extends for 2,600 km from the Tibetan Plateau to the South China Sea, comprises around 795,000 km^2 and incorporates six countries. The primary controls on the river course, especially in the northern parts of the basin, are the tectonic forces that arise from the north-eastern movement of the Indian continental plate against the Asian massif. However, and unusually for such a large river, tectonic influence and bedrock confined river reaches are noted at many localities throughout the course of the Lower Mekong River. The river cuts across six broad physiographic regions. The headwaters drain from an altitude of 4,970m on the Tibetan Plateau and flows for 2000km through and Yunnan province in China. The terrain remains similar until Vientiane in Laos. The total vertical drop of the river within China is 4500m. However the river drops only about 500m over the remaining 2600km to the South China Sea, giving an average slope of about 0.0002 for the whole system. Downstream of the Khorat Plateau the modern Mekong passes over the Khoné Falls onto the Cambodian Plain. During the Pleistocene the course of the Mekong traversing the Plain varied and there is evidence of extensive course realignments. During the wet season the flow of the Mekong reverses into a major right-bank tributary that drains the Tonlé Sap lake. Near Phnom Penh the Mekong develops a major distributary, the Bassac River, before diverging into nine major distributaries. This hydrological system is very young. The Tonlé Sap lake formed due to subsidence of the Cambodian platform 5720 years ago at which times lava flows occurred in the region. During the 'climatic optimum', the Mekong became connected to the Tonlé Sap. The delta area had an independent river system during periods of sea retreat. A recent rise in sea level of around 120m occurred in the last 17,000 years. The mouths of the Mekong formed during the Holocene.