

EFFECT OF SEA-LEVEL RISE AND RESPONSIBLE COASTAL ZONE MANAGEMENT FOR THE LOW-LYING AREAS OF BANGKOK METROPOLIS

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A global sea-level rise of a half meter over the next century will cause extensive submergence of low-lying coastal areas in the Gulf of Thailand Regions, with accelerated erosion of beaches, steep bluffs, deltas, and mangrove swamps. Estuaries and lagoons will become larger, and salt water will penetrate further up rivers. Submergence will increase where land subsidence has followed groundwater extraction, as in the Bangkok areas. It will be necessary to protect and re-structure coastal fish and shrimp ponds and salt pans and tourist developments threatened by the rising sea-level. Although the potential impact of climate change on the occurrence of flood disaster has been alluded to frequently in popular accounts of global warming. Most coastal cities in the Gulf of Thailand Region experience frequent and devastating floods. This is because many of the human settlements in the disaster vulnerable cities are located in high-risk areas, such as Bangkok Metropolis. The particularly vulnerable areas are floodplain and low-lying coastal regions where the density of population is already high and where population growth and economic development are concentrated.

In the case study of Bangkok areas, decisions-makers need to have some basis for establishing priorities when faced with the question of selecting suitable areas for development, especially if parts of the municipality are faced with either natural or man-induced disaster, like land subsidence. A number of recommendations for protection of Bangkok areas are proposed in this paper which include: (1) a broad decentralization of development in the Bangkok region to create a "Bangkok Multipolis" (2) preparation of the Satellite towns for growth corridor of Bangkok metropolis (3) shaping the encroachment boundary of Bangkok into more coherent and efficient pattern (4) construction of effective infrastructure (5) building sea walls and putting in drainage and pumping systems to manage the land margin a sea-level rise.