

MANAGEMENT OF COASTAL ENVIRONMENTAL INTERACTIONS FOR GULF OF THAILAND

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The National Environment Board of Thailand, from its beginning in 1975, has recognized the importance of the precious Gulf of Thailand regional eco-system with its high diversity resulting from interactions between land, the Gulf's seawater, and the discharges of four major river systems which enter the upper portion of the Gulf. While the Gulf is not exclusively the domain of Thailand, it is primarily in Thailand's domain, hence the Board has recognized that Thailand must exercise the lead role in protecting this precious eco-system from degradation by human development encroachments. Already by 1975, these encroachments had generated evidence of serious degradation in water quality and biodiversity, and the Board (of which I became Secretary General in 1977) began in 1975 to undertake reconnaissance level studies for the purpose of sizing up the problem and formulating a meaningful action program. However the Board's powers and resources at that time were small, and the Board was not able to follow-up recommended correction measures and projects. About all we could do was to make our studies and evaluations. Based on this and many other painful experiences a new National Environmental Quality Act was formulated and became effective in June 1992, with vastly greater powers and resources, including establishment of our Ministry of Science, Technology and Environment (MOSTE). The new Ministry includes three environmental departments, one the Office of Environmental Policy and Planning (OEPP), another the Pollution Control Department (PCD) with powers to implement as well as to plan, and the third the Department of Environmental Quality Promotion (OEPP). With the new powers and resources we have been able to move rapidly ahead in implementing our ideas and proposals and in the five year period since 1992 have made a great deal of progress and hopefully this will continue at an increasing rate.

The Gulf of Thailand's hydrology is heavily influenced by the discharge into the Upper Gulf of four major rivers with ample flow volumes. These are the only major river discharges into the Gulf, but their flow volumes are sufficient so that the entire Gulf is a large-scale estuary with salinities lower than for seawater levels. The entire Gulf is shallow with a heavy mud bottom, is a rich fishery reproduction zone, and includes a number of offshore islands with associated coral reefs. Except for the Songkhla Lake Basin region on the western side of the Gulf, most of the land on both sides of the Gulf is narrow due to mountain ridges generally running close to the sea, so these lands have only minor streams and little groundwater. Nevertheless they are well populated and undergoing steadily increasing development.

The approach used by NEB/MOSTE in trying to cope with Gulf environmental degradation has of course focused on the areas generating the heaviest intrusions and pollution of the Gulf ecology. These include the following :

- (i) the massive urban/industrial zone of the Bangkok Metropolitan Region, comprising the City of Bangkok and the five surrounding provinces also undergoing rapid development, already with a population of some 8 million and destined to become one of Asia's larger megalopolises,
- (ii) the Eastern Seaboard, a large new urban/industrial region planned and implemented by the Government (Thailand's first such Governmental

intervention), bringing with it all of the degradation hazard potentials generated by such growth including pollution of beautiful coastal tourism areas including Pattaya,

(iii) the Songkhla Basin region, home of Thailand's most precious natural lakes with rich eco-values, depreciated by irrigation withdrawals from the lake as well as pollution,

(iv) development of rich natural gas fields in the Gulf, together with oil spill hazards from tankers serving the major oil refineries in the Eastern Seaboard and in other Upper Gulf locations, and

(v) pollution and hydrology disturbance hazards by growing community and industrial development in areas along the Gulf coast not included in the zones mentioned above. The result has been a number of large scale projects which are bringing pollution of the Gulf water resources --- freshwater, brackish, and marine ---- under firm control with expectations that by continuing and expanding these efforts, the Gulf's precious eco-values can and will be preserved. This will be done not for eco-preservation per se, but to achieve this within the target of sound economic-cum-environmental development of the overall Gulf region.

In addition to our "brown" pollution control programs which I have mentioned, being carried out by PCD, our overall Gulf protection program includes several "green" projects aimed at preserving selected Gulf eco-values. These include marine corals, the Songkhla lakes, and national marine eco-parks located in the Gulf region.

All of the above relates to Thailand's own Gulf degradation protection program. However, the Gulf is an Asian subregion entity bordering on a number of ASEAN countries, and the most cost-effective long-range approach for development-cum-degradation control should be at the ASEAN subregional agency level. Little progress on this has been made in the past, mainly because of institutional difficulties, but it is important to recognize that the economic booms of the past decade in several ASEAN countries have sponsored development of privatization mechanics. As we all know, privatization features great flexibility as well as resources, hence is in a position to complement and supplement governmental programs. While privatization has not yet been brought into the subregional multi-country planning/coordinating role to any significant extent, we believe this potential can be very meaningful and we expect to put it to work to help us and the other Gulf-bordering countries to realize one of the World's first effective subregional ecosystem preservation systems.