

## Mitigation in Saemangeum Bay

Moon Seup Shin\*, Tetsuo Yanagi\*\* and Sung Kun Hong\*\*\*

### Abstract

The reclamation area of Saemangeum(Kunsan) located between 126 °10' E - 126 °50' E and 35 °35' N - 36 °05' N at the western coast of Korea. The construction of the 33km sea dike is building in the Saemangeum area. When the construction of the sea dike in the coastal region takes place, there exists a certain amount of soil which is diffused by the tidal current. Behavior of the soil diffusion usually depends on its intrinsic characteristics, bathymetry, construction method and used machinery. The amount of soil at the construction acts as a pollutant which is the cause of changing the marine environment. When the soil material is diffused, it may form a layer which obstructs the light passing into the sea and causes the extinction or alteration of the living beings on the sea bottom.

The settlement of soil material could change the sea bottom deposit. The purpose of MITIGATION is to harmonize the development and the conservation of environment, to restrict environmental destruction and to reproduce the environment damaged by the construction in the coastal region. The purpose of this study is to find the method by which we minimize the anti-function of development in the coastal region. Tide and tidal current are calculated using a two-dimensional numerical model before the construction of sea dike in Saemangeum Bay.

The numerical results are compared well with field observations. On the basis of these results, we calculated the tide and tidal current after the construction of the sea dike in order to investigate the change of the tide and tidal current after the construction of the sea dike.

- 
- \* 군산대학교 해양토목공학과 (Dept. of Ocean Civil Engineering, Kunsan National University, Kunsan, 573-400 Korea)
  - \*\* 일본 에히메대학 토목해양공학과 (Dept. of Civil and Ocean Engineering, Ehime University, Matsuyama, 790 Japan)
  - \*\*\* 군산대학교 해양생산학과 (Dept. of Marine Production, Kunsan National University, Kunsan, 573-400 Korea)

Moreover, we calculated the tide and tidal current after the construction of submerged breakwater in order to preserve the environmental condition of creature habitat. We compared the tide and tidal current before and after the construction of submerged breakwater, to investigate the possibility of MITIGATION in the fisheries.

### References

1. Tetsuo Yanagi, Hideshi Tsukamoto, Hiroo Inoue, Tomotoshi Okaichi : Numerical Simulation of Drift Cards Dispersion, *La mer* 21 :218-224.
2. Tetsuo Yanagi, Shin-Ichi Okada, Katsumi Tsukamoto(1992) : Numerical Simulation of dispersal patterns of red sea bream juveniles, *Pagrus major*, in Nyuzu Bay, Japan, *Journal of Marine System*, 3(1992)477-487
3. Shin Seup Moon, Jong Nam Lee, Sung Kun Hong : Development of Model by Soil Diffusion within Dam, *Hydro-Port'94*, October 19-21, 1994. Yokosuka, Japan.