Principal Researcher	Masahiko Isobe	Number ofResearchers	5
Research Institution · Department · Title	Professor, Graduate School of Frontier Sciences, The UniversityofTokyo	Location of Institution	Bunkyo-ku, Tokyo
Title ofProject	Study onimprovementof hypoxic water using micro-bubble aeration and prediction of its effects onlong-term environmental change		
Abstract of ResearchProject	We foucus on hypoxia or anoxia, one of the most serious problems in polluted bays, consider practical remedies for the problem and predict their long-term effects on water quality and ecosystems. Firstly, we develop a device to improve hypoxia using micro bubbles whichhavepromising ability of dissolving oxygenintohypoxicwater. Secondly, we apply the device to one of the trenches at the head of Tokyo Bay, which was dredged for the reclamation of the foreshore. If the hypoxic water in the trench was improved, water quality and ecosystems would also be improved through the enhancement of the rate of decomposition of organic materials in the sediment and increase in the mass of benthic animals. Based on the development of a monitoring system for water and bottom sediment environments, we developa numericalmodel to reproduce the obtained data. Furthurmore, through the investigation of sediment cores, in which the history of eutrophicaton during recent five decades has been recorded, we improve the model to predict long-term effects on environmental change. Finally, we show a strategy to improve the environment of polluted bays based onourfindings.		
References	Sasaki, J, Y. Koibuchi, R. Watanabe,M.IsobeandM.Gomyo (2001): Enhanced Monitoring of Phytoplankton BloomingandNutrientCyclingProcessesin Inner Part of Tokyo Bay, Proc 1st Asian and Pacific CoastalEng.Conf., Vol. 1, pp. 545-554. Sasaki, J. andM.Isobe (1999): Development of a Long-TermPredictive Model of WaterQuality inTokyo Bay, EstuarineandCoastal Modeling, Vol. 6, ASCE, pp. 564-580.		
Term of Project	Fiscal years 2002-2006. (5years)		

Budget Allocation (inthousandofyen)	FA2002	FY2003	FY2004	FY2005	FY2006	TOTAL
	23,300	23,400	23,500	10,400	7,400	88,000

Homepage Address	http://www.coastal-env.k.u-tokyo.ac.jp