P95. DESIGNING AN EFFECTIVE ACTION PLAN FOR SUSTAINABLE LOCAL RESOURCES AND THE COASTAL ENVIRONMENT: A CASE STUDY OF MITSU BAY, HIROSHIMA, JAPAN

Tamiji Yamamoto¹, Satoshi Tateno², Kyoko Hata², Koichiro Mizushima³, Yoshihiko Goda³, Satoru Takahashi⁴, Kenji Tarutani⁵, Hidetoshi Saito¹, Terumi Tanimoto⁴

¹Hiroshima University, ²IDEA Consultants, Inc. (present affiliation: Japan Meteorological Agency, ³Sanyo Techno Marine, Inc., ⁴National Institute of Advanced Industrial Science and Technology, ⁵Seikai National Fisheries Research Institute, Japan
tamyama@hiroshima-u.ac.jp

“The Healthy Plan of Enclosed Coastal Environments” was a project implemented from 2011 to 2013 to design an effective action plan for restoring a healthy environment in Mitsu Bay, Hiroshima, Japan. After collecting and analyzing natural and social background information, two controversial issues associated with the bay’s ecosystem were identified: a decrease in oyster production that may be due to oligotrophication of the bay, and deterioration of sediment quality caused by oyster culture. Four mitigation approaches were proposed by the committee and their effectiveness was evaluated using numerical calculations. An application of hot air-dried oyster shells (HACOS) to the sediment was considered the most effective measure, because the remediation of sediment quality by adsorbing hydrogen sulfide may increase benthos biomass and fisheries production. Improved conditions were estimated to continue for 10 years. The application of HACOS is easy for fishermen, and is very cost effective because it is a by-product of extensive oyster culturing in the bay. Thus, the approach is also considered advantageous for establishing a recycling-orientated community. The effective action plan for sustainable fisheries and restoration of the environment outlined in this study is proposed as a leading model of design and implementation.