

Activity and vision of IMBeR (Integrated Marine Biosphere Research)

*Hiroaki Saito¹

1. Atmosphere and Ocean Research Institute, the University of Tokyo

IMBeR (Integrated Marine Biosphere Research Project) is a research project of Future Earth, established in 2016 following IGBP/SCOR IMBER (Integrated Marine Biogeochemistry and Ecosystem Research, 2005-2016). IMBeR research goal is “Understand, quantify and compare historic and present structure and

functioning of linked ocean and human systems to predict and project changes including developing scenarios and options for securing or transitioning towards ocean sustainability” . In Japan, IMBeR endorsed project SKED (The Study of Kuroshio Ecosystem Dynamics for Sustainable Fisheries) is ongoing. The purpose of SKED is to understand the mechanisms realizing high fisheries production in the oligotrophic condition, i.e., *Kuroshio Paradox*, and to find a way for sustainable use of the ecosystem services. The other project related to IMBeR is NEOPS (New Ocean Paradigm on its Biogeochemistry, Ecosystem and Sustainable Use, 2012-2017). NEOPS aims to advance our understanding of ocean biogeochemistry and ecosystem dynamics in the Pacific Ocean for the sustainable use of ecosystem services, with particular attention to the high seas. Responding to the increasing demand on marine ecosystem services and the degradation, new legal instrument to conserve biological diversity beyond the area of national jurisdiction is developing in UN. Although science-based decision making is essential for the process, our knowledge of biological diversity in high seas is limited. For scientists of IMBeR community, it is an emergent request from society to provide best scientific knowledge of biological diversity and the control factors in area of national jurisdiction.

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