

On Sustainability Initiative for Marginal Seas in East Asia

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The marginal seas of East Asia (MSEA hereafter) along the western Pacific, geologically as the interface between the Pacific Ocean and the Asian land mass, have islands spread from the Bering Sea down to the Indonesian seas consisting mainly of the Japanese, Philippine, and Indonesian Archipelagos. The MSEA is very important to international commerce and global security as linkage of heavily populated megacities with active societal, economical and industrial activities.

The MSEA is also the region of the highest marine biodiversity in the world, and its coral reefs and waters around atolls and small islands serve as the spawning ground and nursery of many marine species including tuna and other pelagic species that serve as very important food commodities in the Pacific islands, the Asia mainland and North America. To conserve the health of the MSEA under the pressure from the global change is of our urgent need. The region also lies along the path of destructive typhoons that originate in the western North Pacific and affect the Philippines, Vietnam, Hong Kong, China, Korea, and Japan. It is known that the western North Pacific is one of the most active basins where about 26 typhoons are generated annually, majority of which enter the Philippine area. The latest typhoon, Haiyan, the strongest storm recorded at landfall and the deadliest Philippine typhoon causing storm surges ever recorded, impinged heavily on human life, food security, energy supply, health, wellbeing, and transportation and communication systems in addition to extreme destruction of property, the economy and the ecosystem of Central Philippines. The outpouring of support from the international community to help the Philippines rise out of the disaster is well appreciated particularly by the victims of typhoon Haiyan and its storm surges. Many lessons now learned can be shared to minimize the impact, improve the resiliency of communities and to ensure protection of people against the anticipated increase in the number of future disasters due to global climate change. The cold phase of the Interdecadal Pacific Oscillation which brought the apparent hiatus of the global warming will eventually change and we expect a dramatic climate regime shift as observed in 1976.

In the spirit of the Future Earth initiative of ICSU, we are proposing a collaboration mechanism to share knowledge and expertise for better well-being among ICSU members around the MSEA to work for solutions of relevant problems in the region. While focusing on the maritime region, the researchers will aim to contribute to the attainment of the goals of Future Earth, namely: 1) to develop the knowledge for responding effectively to the risks and opportunities of global environmental change, and 2) to support transformation towards global sustainability in the coming decades. The main region of the proposed study will be the Exclusive Economic Zone beyond the territorial limit (generally 12 nautical miles from shore) in MSEA as well as international waters relevant to the sustainable use of common areas. The collaboration will involve joint researches and capacity building particularly of young scientist in developing countries. We had the brainstorming pre-scoping workshop for SIMSEA in February in Yokohama, of which purposes are:

1) To exchange information and knowledge on the existing discipline-oriented research programs on the marginal seas in Asia and the western Pacific for integrative sustainability research program involving natural, social, economic, engineering and technological sciences.

2) To discuss and co-design a collaborative interdisciplinary research program on the marginal seas of Asia and the western Pacific that meets the criteria of research toward global sustainability under the framework of Future Earth.

We will summarize the outcome of the pre-scoping meeting and envisage the future of SIMSEA in accord with Future Earth.

Keywords: Future Earth, Marginal Seas, East Asia, Interdecadal Pacific Oscillation, Global Change, Climate Variations