

New Era in Oceans and Wide-area Coastal Zone Management

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1. Introduction

Perhaps because Japan is surrounded by the ocean on four sides, we have not been particularly conscious of its importance. Conflict over undersea gas field development in the East China Sea and the Senkaku Island dispute are problems which have sounded a loud alarm concerning Japan's present situation. It is impossible to ignore the contributing role in these problems of Japan's exclusive economic zones (EEZ) which now spread across the ocean east of the continent.

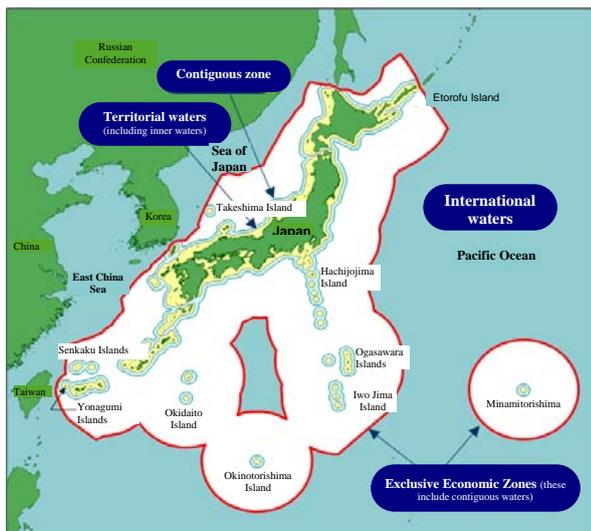


Figure 1. Map Showing Japan's Territorial Waters Etc.
(Source: Web site of the Japan Coast Guard)

The EEZ are designated as ocean areas extending Japan's economic sovereignty for 200 nautical miles from our coastline under the United Nations Convention on the Law of the Sea, but the ocean area over which the EEZ extend Japan's economic sovereignty (EEZ + territorial waters) is the fourth largest in the world at about 4.47 million km², and the area of these waters combined with our national land is the ninth largest in the world, making Japan one of the world's giant nations in fact as well as name.

As the great potential of the ocean as a frontier region with growing unknown possibilities broadens along with Japan's predicted expansion on the

continental shelf, Japan is counted on to resolve to develop the ocean as a marine nation and to fulfill its responsibility to apply the benefits of this development to benefit the world. Until now, only a few politicians, academics, and administrators have shared such consciousness. But in 2007, the Basic Act on Ocean Policy was enacted and enforced, then last year, the Law Concerning Conservation of Low Tide Lines and Provision of Base Facilities in order to Promote the Conservation and Utilization of the Exclusive Economic Zone and the Continental Shelf, was enacted in order to position the role of the ocean in the new growth strategy of 2010, and to conserve the remote islands, which are vital for the maintenance of the EEZ and the development of the continental shelf. And as a result of low-profile enlightenment activities, an awareness of Japan as a marine nation has slowly spread among the people, a process which the above-mentioned incidents are now spurring.

2. Various potentials of the ocean

It is said the following are direct or indirect potentials of the oceans.

- Food resources: fish, benthic organisms, vegetation, etc.
- Energy resources: wind power, ocean currents, tides, gas hydrates, biomass, etc.
- Mineral resources: hydrothermal ore deposits, cobalt rich crusts, etc.
- Environmental improvement: fixing CO₂, biodiversity, etc.
- Other uses: disaster information (seismograph networks), etc.
- New technology development: oceanographic survey technologies, undersea construction equipment, undersea transport vessels, meteorological and hydrographical prediction technologies, etc.
- New education: developing new human resources, etc.

3. Need for wide-area coastal zone management

The ocean possess many potentialities of these kinds, but on the other hand, this also may create a variety of interests. Until now Japan has expended

considerable time and effort to harmonize conflict between parties with interests in the use of coastal zones.

And such clashes of interests, confrontations between large public projects and the fishing industry for example, have occasionally been reported and assessed incorrectly as totally emotional disputes.

The benefits of the oceans must provide the maximum benefits for the people as a whole, and for this reason, priority is not placed entirely on a specific field. In order to maximize benefits by harmonizing interests, we must conduct discussions through scientific analysis based on objective data, develop and agree on a rational process which can create the maximum benefits, and weight efficient investment.

And the oceans are not only the sources of blessings, they are also the origin of typhoons, tsunami, storm surges, earthquakes and other disasters. We also presume that if ocean development continues in the future, its bases will spread throughout coastal regions vulnerable to such disasters, but even under such conditions, ensuring an adequate level of safety is indispensable. And the EEZ etc. bear the duty to conserve ocean environments.

In fact, a perspective such as the above is incorporated in the Basic Act on Ocean Policy, the NILIM is conducting research permitting its actual use, and part of this research is introduced below.

4. Related initiatives by the NILIM

(1) Under the Basic Act on Ocean Policy, we must comprehensively manage coastal zone development, biodiversity, fisheries, recreation, and other conflicting uses in coastal regions. To do so, we have to find ways for various interests to share goals. With the environment selected from a variety of elements as its key word, the NILIM is now conducting research on the development of a process for policy setting by diverse interests for Tokyo Bay and elsewhere, unification or visualization of environmental data, and studying easy-to-understand project evaluation indices. We have to deepen the course of and the achievements of studies possible in the future, at the same time as we consider if it will be possible to widely apply these to harmonizing various uses of the ocean by replacing the key word or bringing concerned together.

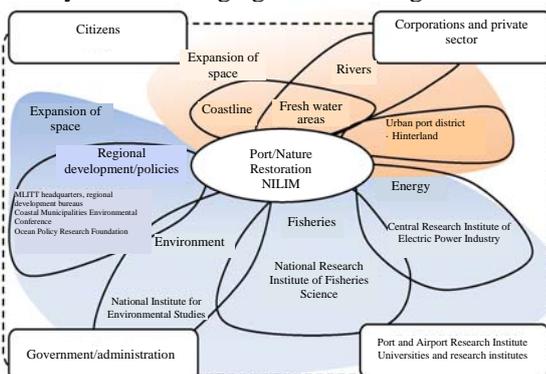


Figure 2. Coastal Region Management System Outline Chart

(2) On new coastal bases, preserving the safety of human lives from disasters is one indispensable condition, and to quickly develop bases, we have to effectively take advantage of disaster reduction, not only that based on physical structures which are extremely expensive facilities, but also on evacuation methods and other non-structural measures. We must back up disaster reduction measures by providing results of setting evacuation routes based on the results of inundation simulations or research on the effective positioning of evacuation sites.

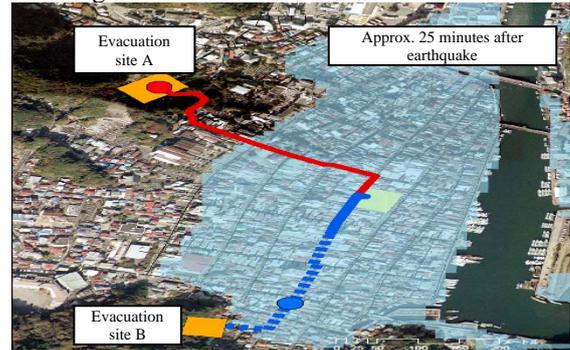


Figure 3. Occurrence/non-occurrence of Damage According to Evacuation Route for Inundation by a Tsunami

(3) Measures to deal with ocean debris are taken up by coastal nations as a response to protect the ocean environment. As a nation managing vast EEZ, Japan must encourage measures including those governing its own disposal of debris accompanied by measures to recover ocean debris and specify countries producing debris. The NILIM is now conducting research on methods of analyzing the drifting debris – beached debris balance, drift routes, and origins of debris in Tokyo Bay and in the East China Sea, and must expand its perspective to include ocean waters near Japan.

5. Conclusion

In order to develop the ocean which is Japan's remaining frontier, we want to continue our research with our eyes fixed on the future, so that we can widely and effectively apply the achievements of research nurtured with the Japanese ~~coastline~~ coastal zone as its field.