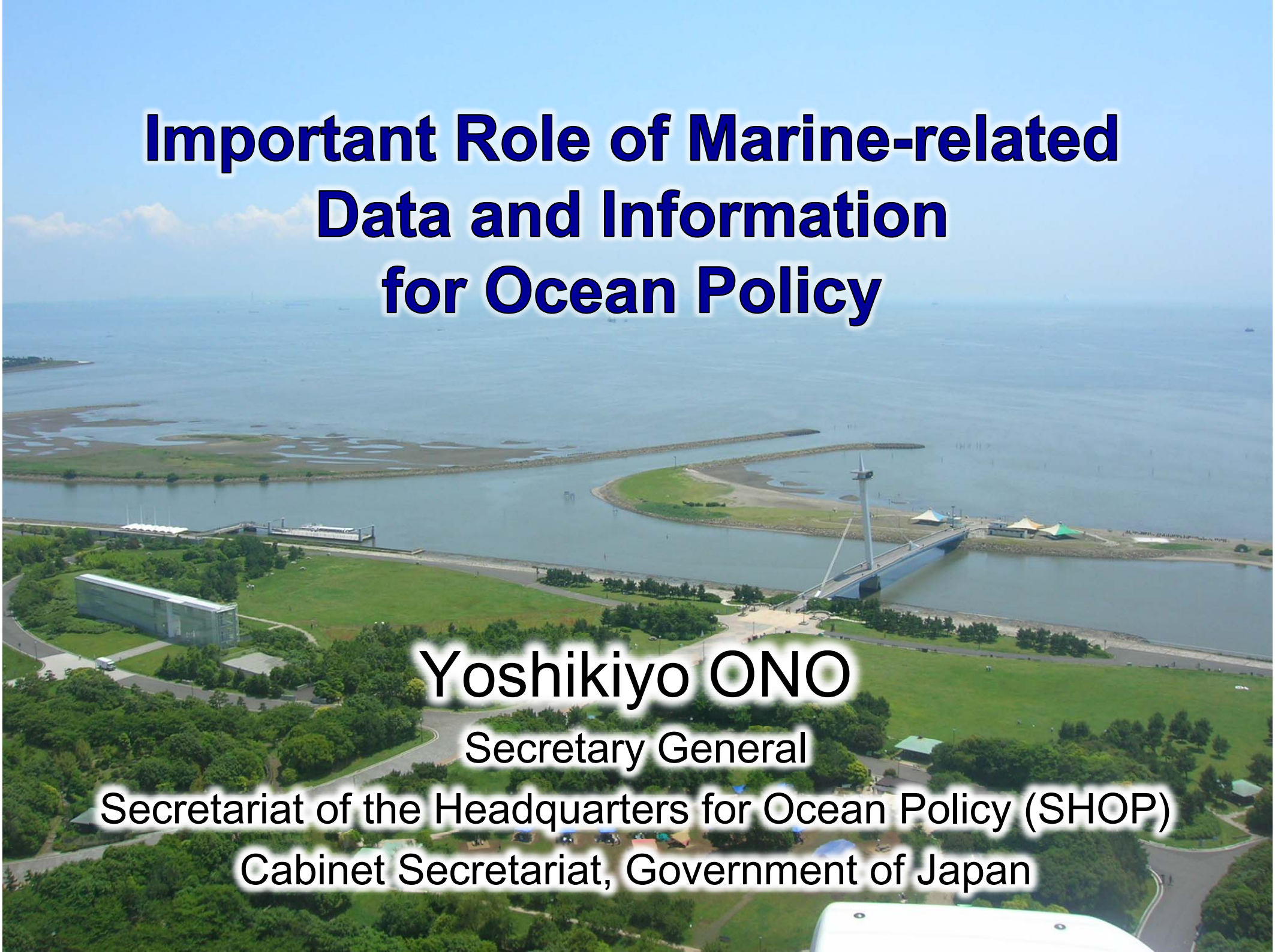
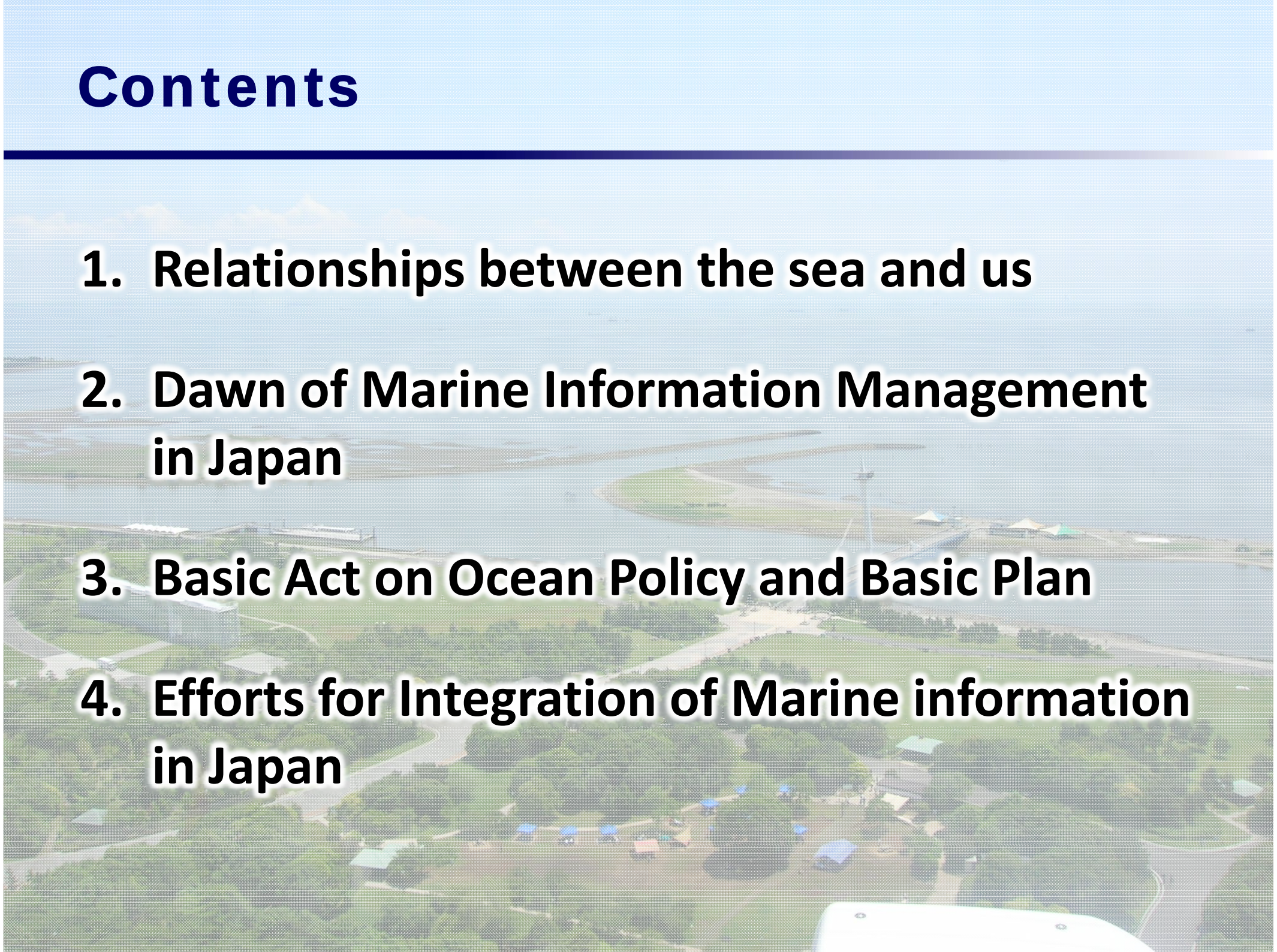
Important Role of Marine-related Data and Information for Ocean Policy



Yoshikiyo ONO
Secretary General
Secretariat of the Headquarters for Ocean Policy (SHOP)
Cabinet Secretariat, Government of Japan

Contents

1. Relationships between the sea and us
2. Dawn of Marine Information Management in Japan
3. Basic Act on Ocean Policy and Basic Plan
4. Efforts for Integration of Marine information in Japan



Relationships between the sea and us

Maritime Transport

Fisheries

http://www.mtwbm.com

http://www.smma.jp

\+ Activities in the coastal areas
(installation of factories and power stations etc.)

*needs of scientific data for coordinating conflicting interests

\+ Exploitation of Ocean Energy and Mineral Resources

\+ Utilization of Ocean Renewable Energy (wind, wave, tide etc.)

\+ Climate Change

Dawn of Marine Information Management in Japan

Resolution I.9, UNESCO/IOC Assembly (1961)

Recommends *to member countries the establishment of national oceanographic data centers in order to facilitate the collection, processing, analysis, and exchange of oceanographic data;*

Reports by **Japanese Council for Marine Scientific Technology** (1963 and 1964)

- Recommendation on establishment of National Oceanographic Data Center (1963)
- Recommendation on establishment of the NODC in MLIT (1964)

Establishment of **Japan Oceanographic Data Center**

in the current Japan Coast Guard (1965)

- data exchange under the IOC/IODE scheme

JODC
JAPAN OCEANOGRAPHIC DATA CENTER
since 1965

Basic Act on Ocean Policy

○**international legal framework related to oceans**:
UNCLOS, Agenda 21, Convention on Biological Diversity, etc.

○**Various challenges at sea around Japan** :
marine pollution, depletion of fisheries resources, coastal erosion, serious maritime accidents

○**Increasing role of the oceans for all mankind** :
security of foods, ocean resources and energy, cargo transport, global environment

Need to **establish executive structure** and
to **promote comprehensive and integrated approach**
to the ocean issues

Basic Act on Ocean Policy

Enactment : 20 April, 2007
Enforcement : 20 July, 2007

Structure to execute the Act

Government

Headquarters for Ocean Policy

Director-General : **Prime Minister**
Vice-Director : **Chief Cabinet Secretary**
Minister for Ocean Policy
Members : **All Ministers**

Councilors' Meeting
Key figures with deep insight

Cabinet Secretariat
Secretariat (SHOP)

Ministries
Implementing the measures

Basic Plan on Ocean Policy

(Approved by the Cabinet on March 2008)

- basic principles of the measures implemented pursuant to the Act
- measures that the central government shall implement

Period of the Plan

5 years (from FY2008 to FY2012) *to be reviewed in the end of FY2012

Basic Plan on Ocean Policy – 12 Measures

1. Promotion of the development and use of marine resources

Fishery

methane hydrate

2. Preservation of marine environment, etc

3. Promotion of Development of EEZ and Continental Shelf

4. Securing Maritime Transport

5. Securing the Safety and Security of the Sea

6. Promotion of Marine Surveys

Basic Plan on Ocean Policy – 12 Measures

7. Promotion of Research and Development of Marine Science and Technology

8. Promotion of Marine Industries and Strengthening the International Competitiveness

9. Comprehensive Management of the Coastal Zones

10. Preservation of remote Islands

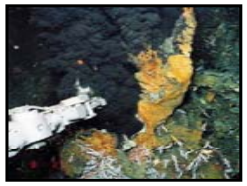
11. Securing International Coordination and Promotion of International Cooperation

12. Enhancement of Citizen's Understanding of the Sea and Fostering of Human Resources

Ocean Energy and Mineral Resources

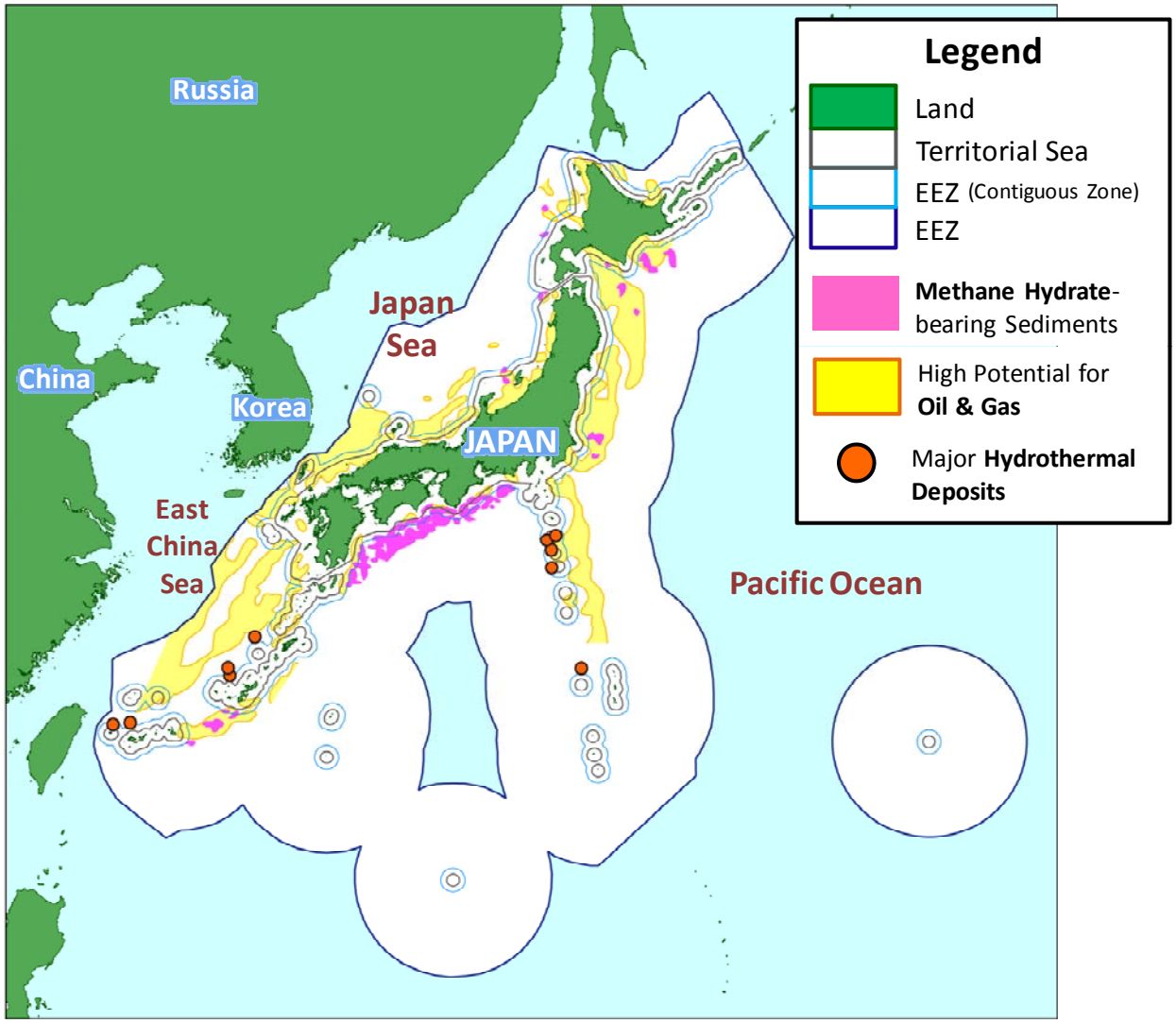
Ocean Energy and Mineral Resources around Japan

- Methane Hydrate
- Oil and Natural Gas
- Hydrothermal Ore Deposits
- Cobalt-rich Crust etc.


Plan for the Development of Marine Energy and Mineral Resources（2009）

- Goals and work schedules of exploration and exploitation to FY2018
- Implementation led by the METI with collaboration from governmental agencies etc.



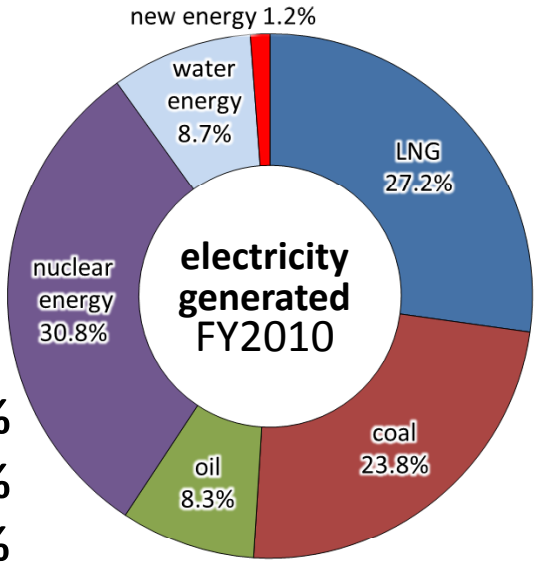
modified from JCG Annual Report 2010

Ocean Renewable Energy

Increasing need for developing all types of renewable, domestically generated energy

Background

- **CO_2-reduction Target**
- **Trouble of Fukushima Nuclear Power plant**
- **Utilization of Domestic Energy**
  - **Fuel energy: 60 %**
  - **nuclear energy: 30 %**
  - **"new energy": 1.2%**



Data: Japan's "Energy White Paper 2011"

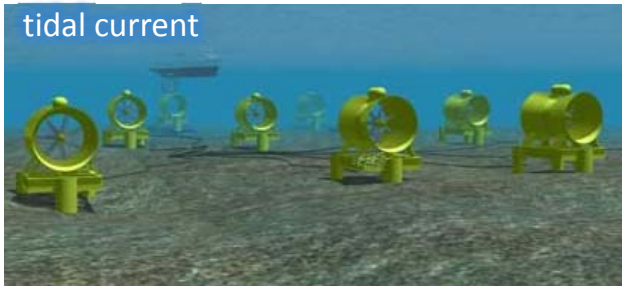
new energy sources related to ocean

wind, wave, tide, currents, difference of water temp. etc.

(@Kamisu, Japan)

(OPT)

(Pelamis Wave Power)



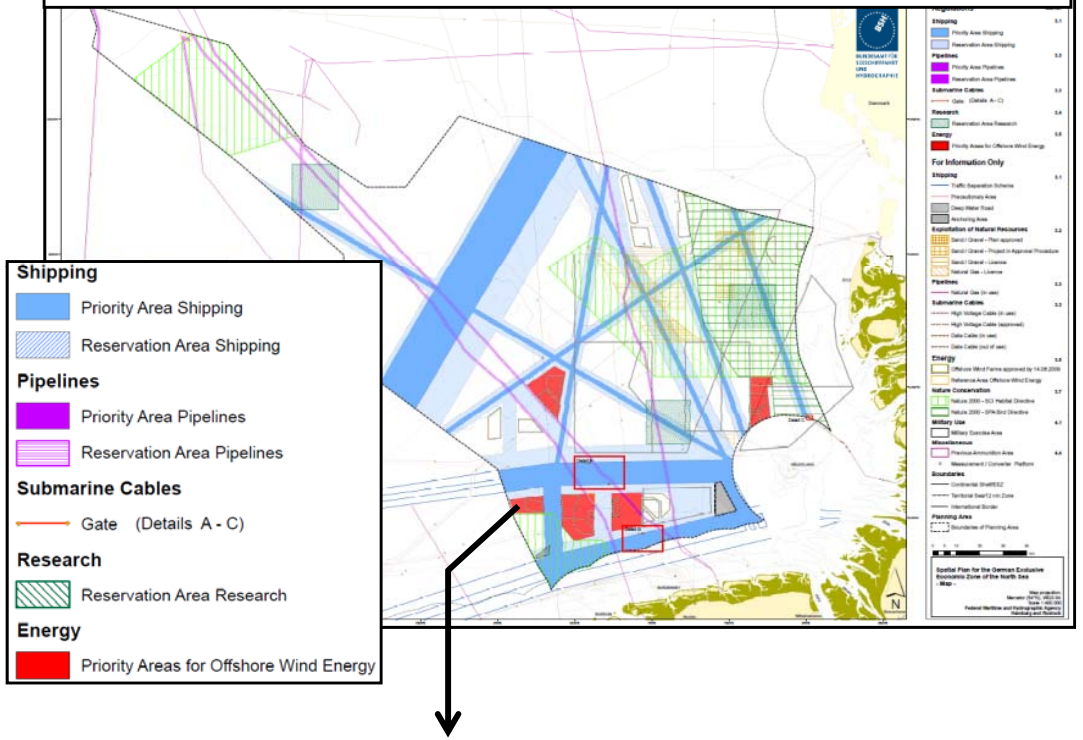
(Lunar Energy)

Ocean Renewable Energy

Toward the practical use/commercial operation of ocean renewable energy

1. **Designation of test fields**
   - "multiple" test fields
   - natural/social conditions required for test fields? how to select?
2. **Coordination among stakeholders on the use of sea areas**
   - social condition related to use of sea areas
   - mechanism for reconciliation
3. **Measures for reducing initial costs**
4. **Legal framework needed**

Spatial Plan for the German EEZ in the North Sea



Marine Protected Areas (MPAs)

MPAs:

- "MPA" is regarded as **the sea area reserved by legislation or other effective means, where aquatic plants and animals inhabit**.
- As the **international definition of MPA is not fixed**, some countries regard "Marine Park" or "Marine Reserve" as MPA.

International trends:

establishment of MPAs to conserve marine biodiversity

- Convention on Biological Diversity (1992)
- World Summit on Sustainable Development (2002)
- **COP10 (2010)** etc.

Aichi Biodiversity Target (2010-2020)

Target 11:

***By 2020**, at least **10 per cent** of coastal and marine areas*

Marine Protected Areas (MPAs)

"Japanese-style" MPAs (definition)

Approved by the HQ for Ocean Policy in 2011

(coastal and sea) areas clearly specified and managed by legislations or other appropriate measures ***for conservation and sustainable use of biodiversity*** *which are necessary to maintain the sound structure and function of marine ecosystem,* ***with consideration given to the existing mode of using the coastal and sea areas***

(provisional translation by the SHOP)

Classification of Japanese-style MPAs (examples)

ca.8 % of territorial Sea and EEZ

1. **Protect of nature landscape**
   - Marine parks *(Natural Parks Law)*
   - Natural seashore conservation areas *(Law concerning Special Measures for Conservation of the Environment of the Seto Inland Sea)*
2. **Protect of nature environment, wildlife and habitats**
   - Wildlife protection areas *(Wildlife Protection & Hunting Management Law)*
   - Natural monuments *(Law for the Protection of Cultural Properties)*
3. **Conservation and Sustainable Use of Fishery Resources**
   - Protected waters *(Act on the Protection of Fishery Resources)*
   - No-fishing areas *(Fisheries Act or autonomous management by fishermen)*

Further Efforts

- **to establish further MPAs properly**
- **to gain international understanding for "JP-style" MPAs**

Comprehensive Management of the Coastal Zones

Current situation & problems

1. **coastal erosion** caused by decreasing sediment supply from land areas (160 ha/year eroded)
2. **pollution** of enclosed coastal seas
3. **marine litter** (drifting in the sea or washed ashore) of land origin
4. **decrease of natural seashores**, including seaweed beds, tidal flats, and coral reefs etc.
5. **conflicts arising among various activities** in the coastal zones

"integrated" coastal zone management

- Management of coastal zones with the integration of land and sea
  - Promoting sediment control
  - Properly managing nutrient salts and pollutant load and restoring/promoting nutrient salts circulation
  - Promoting countermeasures against marine litter
- Coordination of activities at coastal zones
- Establishing of a coordination system for coastal zone management led mainly by local governments

To build consensus by clarifying the details of management and take appropriate measures, with due considerations given to the circumstances of local communities

Extension of the Continental Shelf

UNCLOS

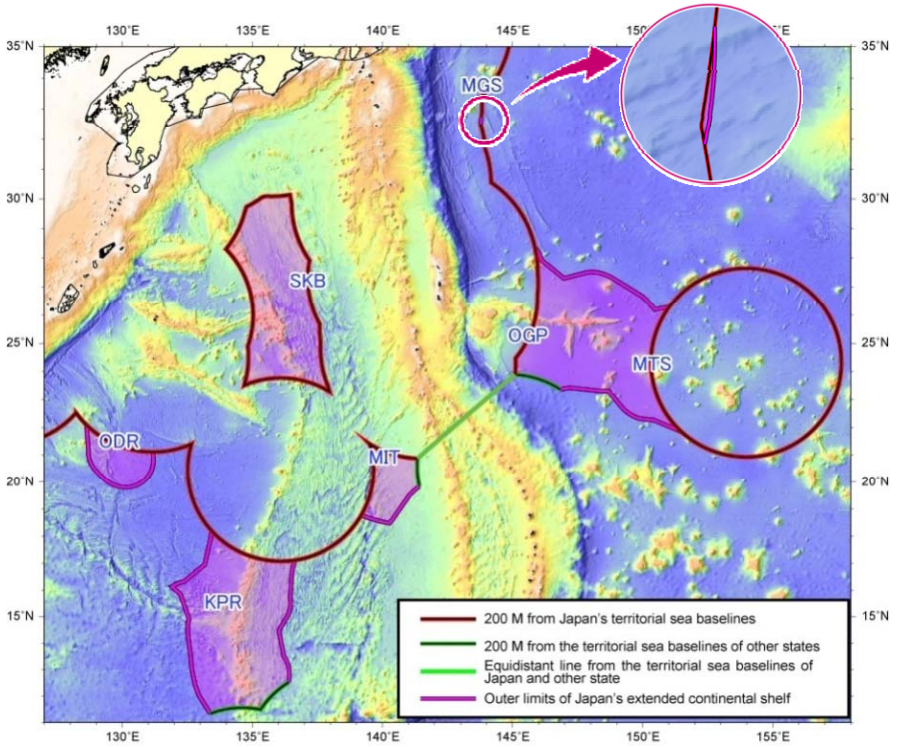
- defines the continental shelf as the sea-bed and subsoil to a distance of 200 M from the territorial sea baselines, or to the outer edge of the continental margin in case that it extends beyond 200 M.
- requests a coastal state to submit the information on the extended continental shelf to the CLCS*, whose recommendation shall be basis of the establishment of the extended continental shelf of the coastal state.

*CLCS: Commission on the Limits of the Continental Shelf

◆ Japan lodged the information on its extended continental shelf (ECS) to the CLCS in November 2008.

◆ As of today, Japan's submission is still **under consideration by the CLCS**.

Establishment of ECS, based on the recommendation by the CLCS



Expansion of Japan's maritime zones

- sovereign right to exploit natural resources
- obligation to protect and preserve the marine environment

Integration of marine information

Basic Plan on Ocean Policy

Chapter 2, 6 Promotion of Marine Surveys

(3) Integration of Marine-related Information

"…. A system should be developed to integrate and provide marine-related information now dispersed among agencies, with a view to organizing such information efficiently and rationally in a user-friendly manner, as well as to contributing to the development of marine industry, promotion of basic research and streamlining of marine surveys. …"

Importance of marine-related intelligence infrastructure

1. **Crucial to ocean policy making**
   - ① For improving the quality of policy itself
   - ② For providing more convincing explanation

2. **Indispensable for making investment decisions by industries**

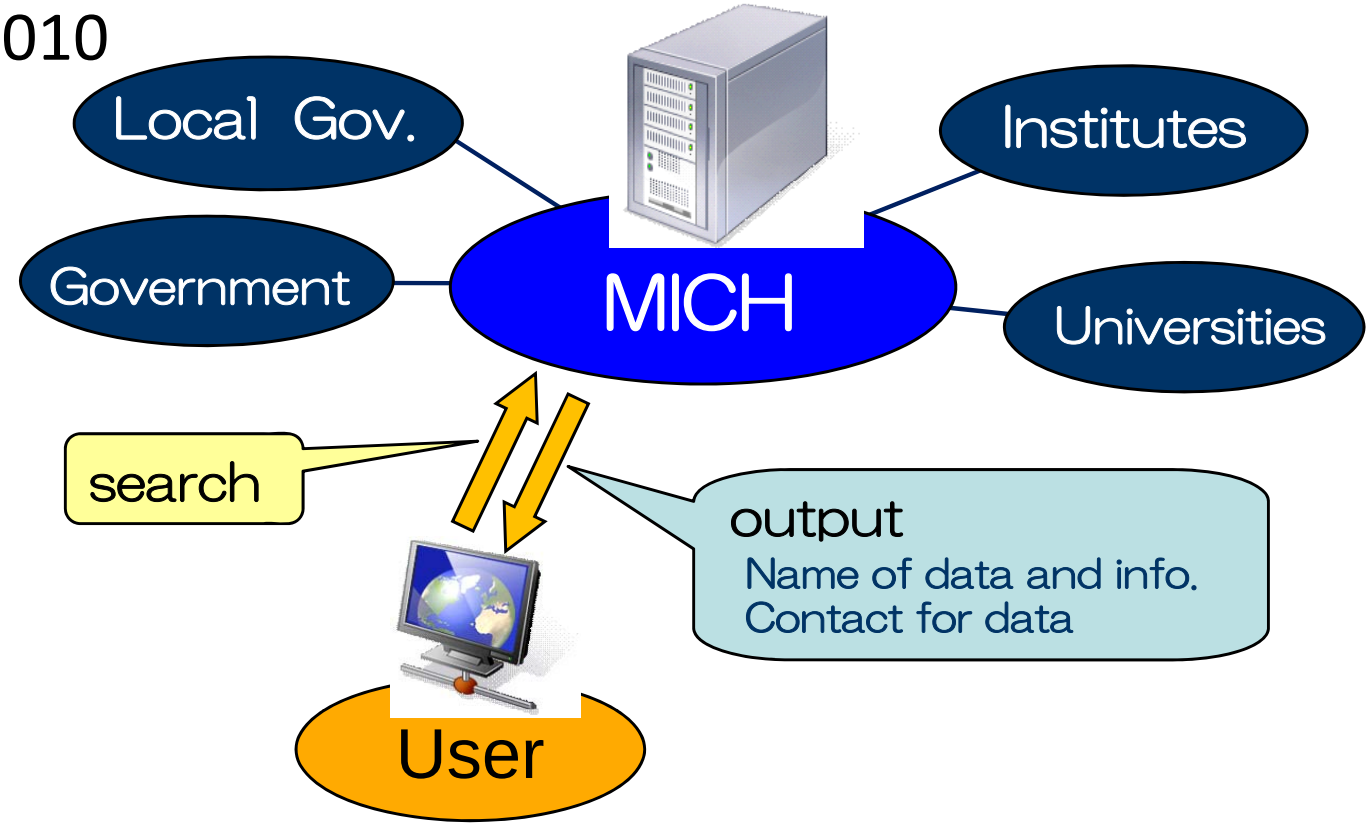
   (It's difficult for them to collect data for spatially wide areas.)

Our first step for data integration

Marine Information Clearing House: MICH

(http://www.mich.go.jp/)

- database of metadata of ocean-related information separately stored in each organizations
- since March 2010



Toward the next step

Limitation of MICH

- The MICH provides the metadata of data interested (not data themselves).

  *Users have to ask data holders for the data.

- Users need tools and technical skills to visualize data by themselves.

Next step for data integration

- Marine data/information are crucial for tackling these challenging issues.
  - promoting surveys and researches
  - accumulating marine data and information
- We need **appropriate tools** to support

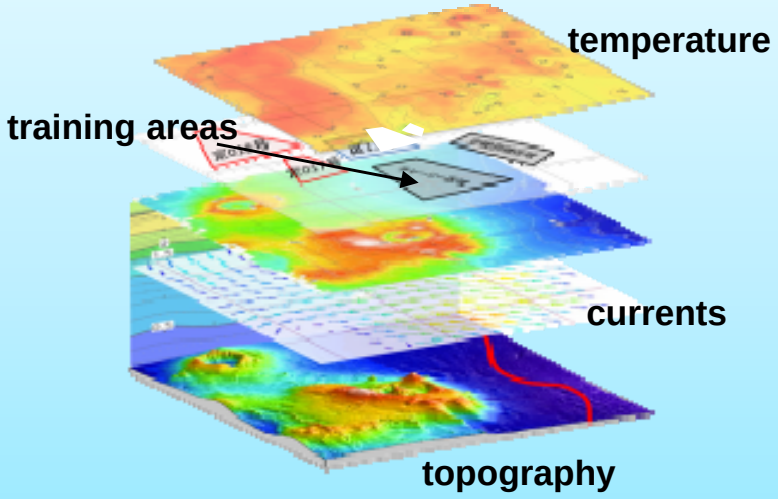
  understanding of the spatial relationships of data,

  planning, decision-making, and data sharing among stakeholders.

Marine Cadastre

- A GIS-based tool to display geographically referenced data overlapping each other in coastal and marine areas and to reveal their relationships

Thorough understanding of the coastal and sea areas



Concluding Remarks

- Integrated marine information is the basis for policy making, implementation of political measures or utilization of the ocean.
- We has just kicked off the task for building Japan Marine Cadastre under the coordination of the SHOP in this year.
- Based on integrated marine information, we aim at implementation of dependable and reliable ocean policy, and proper use and management of the ocean.