

— Selections —

White Paper on the Oceans and Ocean Policy in Japan

2018



**Ocean Policy Research Institute,
Sasakawa Peace Foundation**

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2018 White Paper on the Oceans and Ocean Policy in Japan

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FOREWORD

The world's oceans cover 70% of the earth's surface. We need healthy oceans for a sustainable future. Efforts to achieve the goal of comprehensive management and sustainable development of the oceans are underway, and international agreements, such as the United Nations Convention on the Law of the Sea (UNCLOS) and other international initiatives are part of these global and national efforts. The Ocean Policy Research Institute of the Sasakawa Peace Foundation (then the Ocean Policy Research Foundation) issued its first *White Paper on the Oceans and Ocean Policy* in 2004. Published every year since, the 2018 edition is the 15th in the series. In an effort to support comprehensive and interdisciplinary initiatives on Japan's ocean issues, the *White Paper* applies the perspectives of comprehensive management and sustainable development to national and international developments and activities relevant to the oceans, and provides overviews and analyses of these topics.

The 2018 *White Paper* is organized into three sections: Section 1 organizes and examines recent major initiatives and activities pertaining to the oceans, Section 2 follows the developments in ocean policies in Japan and the world over the last year, and Section 3 contains reference materials and data on the developments and activities discussed in the previous sections. Significant developments occurred in 2017 with regards to the oceans. During the first United Nations Ocean Conference held in June 2017 to implement the United Nations' Sustainable Development Goal 14 (SDG14), a "Call for Action" declaration was adopted. The 72nd session of the UN General Assembly also adopted a resolution to "convene an intergovernmental conference, under the auspices of the United Nations, to consider the recommendations of the Preparatory Committee on Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ) and to elaborate the text of an international legally binding instrument under the United Nations Convention on the Law of the Sea."

In Japan, the year 2017 marked 10 years since the enactment of the Basic Act on Ocean Policy. Discussions toward formulation of the Third Basic Plan on Ocean Policy have already begun. We should pursue diverse efforts to enforce international law such as UNCLOS and to achieve SDG14 so that our children and our children's children can enjoy the benefits of the diversity and richness of the oceans. This requires cross-sector efforts, participation, and coordinated efforts by various stakeholders, including not just national and local governments and international agencies, but also all people in civil society, the business/private sector, and scientists/academia.

Nothing would please us more than to know that the *White Paper* is helping to raise awareness of the oceans as well as providing the latest information, knowledge, and ideas to those who cherish, think of, and study the oceans. In order to continue improving the *White Paper*, we would appreciate if our readers could let us hear their frank views, feedback, and suggestions. Lastly, I would like to express my special thanks to all of the collaborators: the experts, scholars, and researchers, who dedicated themselves to publishing the *White Paper*, and to The Nippon Foundation, whose support made it possible.

March 2018

Atsushi Sunami

President, Ocean Policy Research Institute of the Sasakawa Peace Foundation

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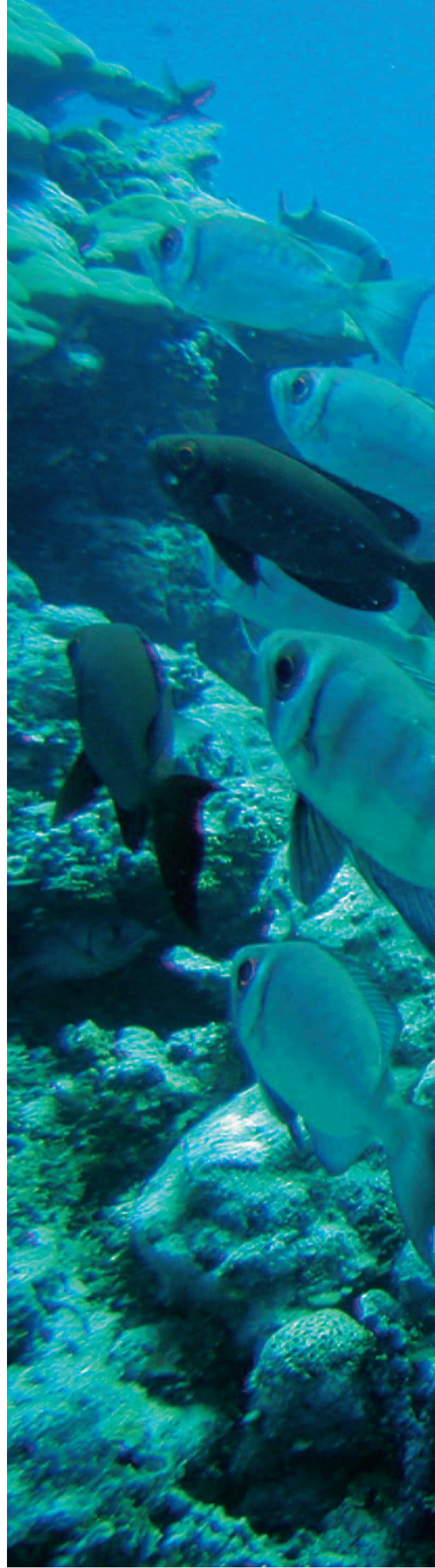
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Japan and the World's Ocean Initiatives



1 New Developments in International Ocean Policy — in light of the first United Nations Ocean Conference

Since the industrial revolution in the 18th century, social and economic activities have intensified, increasing concentrations of carbon dioxide (CO₂) in the atmosphere from the use of fossil fuels, such as coal, oil, and natural gas, and thus contributing to climate change. More frequent and severe rainstorms, droughts, abnormal heat waves, and extreme climate events such as super typhoons, have drawn more and more public attention to global warming as the cause of climate change.

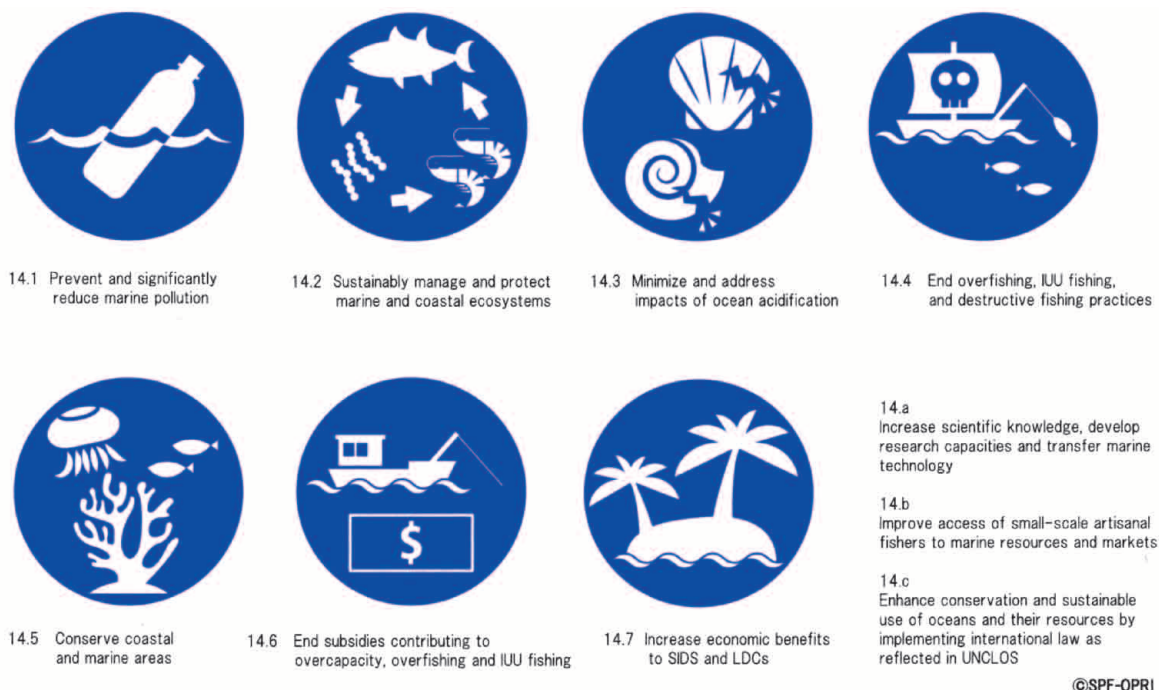
It has been recognized that the oceans play an important role in global warming mitigation. The global oceans have absorbed 93% of the earth's additional heat since the 1970s. Being an excellent absorbent, seawater has captured 28% of human-caused CO₂ emissions since 1750 and received virtually all of the water from melting ice¹. The atmospheric CO₂ level has increased from the pre-industrial revolution level of 278 parts per million (ppm) to 400 ppm. Without ocean absorption of CO₂, it would be more than 450 ppm. However, it is scientifically proven that heat, freshwater, and CO₂ absorbed by the oceans have been causing temperature rise, sea level rise, and ocean acidification. The impacts on the ocean environment and human life have become too significant to ignore. With the preamble of the Paris Agreement, an agreement among nations to reduce greenhouse gas emissions, recognizing the oceans' importance as an integral part of earth's ecosystems, there is increasing concern that global warming has a significant impact on the ocean ecosystem.

According to the Food and Agriculture Organization of the United Nations (FAO), world consumption of fish and fishery products per capita grew at an average rate of 3.2% per year for the last 50 years, while the world population grew at 1.6% per year, with fish consumption doubling to more than 20kg per capita in 50 years. Fishery resources depletion induced by large increases in catches has been reported around the world. According to FAO analysis, only 10.5% of total fishery resources are underexploited. For the sake of the future



Island States in the Pacific Ocean are affected by sea level rise caused by global warming

¹ Magnan et al.(2015), "Intertwined ocean and climate: implications for international climate negotiations", IDDRI



Infographic of Sustainable Development Goal 14 (SDG14) : Conserve and sustainably use the oceans, seas and marine resources for sustainable development

generations, it is essential to ensure the sustainability of fishery resources.

In June 2017, the first United Nations Ocean Conference was convened under the theme, “Our Ocean, Our Future : Cooperation towards Achieving Sustainable Development Goal 14” at the UN Headquarters in New York with 4,000 delegates from 155 countries and regions in attendance. The Sustainable Development Goals (SDGs) adopted at the 2015 United Nations Sustainable Development Summit identified agendas for the international community. 17 goals and 169 targets were agreed upon, and a separate goal with regard to the oceans was set out in Goal 14 (See Figure). Thorough discussions were held at the Ocean Conference to address broad ocean challenges including ocean pollution, ocean acidification, and illegal, unreported, and unregulated (IUU) fishing.

At the Ocean Conference, issues that drew attention included efforts to produce a complete map of the world’s ocean floor and to advance ocean science, which would provide a common base to solve these problems. While the oceans cover more than 70% of the earth’s surface, only 5% of the ocean floor has been explored. At the side event during the Ocean Conference hosted by the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) on June 6, UNESCO Director-General Irina Bokova called for 2021-2030 to be recognized as the “International Decade of Ocean Science for Sustainable Development.” In his acceptance speech at the “Ocean’s 8 Celebration” in honor of national ocean science champions, The Nippon Foundation Chairman Yohei Sasakawa announced his intent to promote “NF-GEBCO Seabed 2030,” a project that aims to produce a complete map of the world’s ocean floor by 2030.

Solid policies should be founded on solid science based upon hard data. Reports of the Intergovernmental Panel on Climate Change (IPCC), products of mul-

tidisciplinary efforts by many scientists, significantly contributed to international policy setting, including the Paris Agreement. Ocean issues fall under many specific areas of expertise, such as fisheries, seabed resources, maritime affairs, environmental conservation, international law, and others. It is expected that the “International Decade of Ocean Science for Sustainable Development,” which UNESCO called for and the United Nations declared, will serve as a catalyst for the advancement of ocean science as the foundation for policy and progress will be made on viable measures towards multidisciplinary, comprehensive policies and sustainable development.

2 New Development in Japan's Ocean Policy — Formulation of the Third Basic Plan on Ocean Policy

It has often been noted that Japan's ocean policy measures have been over-compartmentalized into various areas of expertise. The Basic Act on Ocean Policy was enacted in 2007 to overcome this problem and develop a comprehensive policy. Marine Day in July 2017 marked a milestone, the 10th anniversary of the enactment of the Act. For the past 10 years, under the leadership of the Headquarters for Ocean Policy with the Prime Minister as the Director-General, the First and Second Basic Plan on Ocean Policy were formulated. The Second Basic Plan will reach the end of its 5-year term at the end of March 2018 and thorough discussions were held on formulation of the Third Basic Plan in 2017 at the Councilors' Meeting chaired by Koji Miyahara. Since it was reconvened in 2012, the Councilors' Meeting has been the driving force behind Ocean Policy, preparing annual reports based on the discussions of the Project Teams (PTs) established on each subject. In formulating the Third Basic Plan, the Councilors' Meeting first compiled a basic principle including 4 major subjects in the report in March 2017, held focused discussions in the Subcommittee and the PTs according to the report since April, and delivered the Recommendations of Councilors' Meeting to Prime Minister Shinzo Abe in December 2017.

It is notable that for the first time, maritime security was addressed in the discussion to formulate the Third Basic Plan, in response to Prime Minister Abe's remarks at the 16th Headquarters for Ocean Policy Meeting in April 2017. The Recommendations of Councilors' Meeting of December 2017 also considered ocean policy measures in various fields from the perspective of national security. With regard to industrial use of the oceans, the political significance of ocean industries in securing the nation's maritime interests was recognized, in addition to exploring and exploiting resources and fostering industries.

Furthermore, the Recommendations emphasized the importance of taking a long-term perspective of 10 years. Capacity building and conservation of the ocean environment in particular require a long-term approach. The significance of securing and fostering experts who support Japan as an oceanic nation is underscored. Taking into account recent international developments, the Recommendations ac-

tively advocated for such measures including ocean environment conservation within international frameworks, including the SDGs. With regard to international partnerships and cooperation, it is important for Japan to lead international consensus-building efforts according to the two principles of rule of law on the oceans and implementation of policy measures based on scientific knowledge.

This time marks the third formulation effort of the Basic Plan on Ocean Policy since the enactment of the Basic Act. The Councilors' Meeting makes a recommendation on comprehensive policy while relevant government ministries and agencies take charge of practical business, after which they work together to formulate and implement ocean policy. A solid system to mobilize ocean policy has been gradually emerging. In the Third Basic Plan, which is due to be formulated in April 2018, it is hoped that the Headquarters on Ocean Policy plays the role of control tower for the effort to address ocean challenges that have become increasingly diverse and complicated both at home and abroad.

3 2018 White Paper on the Oceans and Ocean Policy

The 2018 *White Paper on the Oceans and Ocean Policy* celebrates its 15th edition since the publication of the inaugural issue in 2004. The latest issue, with the subtitle of "Japan and the World's Ocean Initiatives," provides an introduction to international development on ocean policies and Japan's policy measures with regard to the oceans.

2017 was a year in which international ocean policy made substantial progress. In addition to holding the Ocean Conference mentioned above, the UN General Assembly decided to convene an Intergovernmental Conference on Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ). Following the 2017 *White Paper*, the 2018 *White Paper* covers international development in the first chapter, and outlines the argument about BBNJ focusing on the Ocean Conference. It also outlines ocean policy measures in the Arctic and Island States, areas most affected by climate change.



2004 White Paper on the Oceans and Ocean Policy

In the light of active discussions that took place in 2017 to prepare for the formulation of the Third Basic Plan, the 2018 *White Paper* reflects back on the progress over 10 years since the enactment of the Basic Act, and gives an overall picture of discussions at the Councilors' Meeting of the Headquarters for Ocean Policy and elsewhere. It also highlights issues regarding climate change and the importance of capacity building.

Newly introduced in the 2018 *White Paper* are boxed articles, intended to familiarize the readers with subjects currently receiving attention. Bits of

knowledge are provided throughout the *White Paper* to make it reader-friendly. For example, the boxed article on Seabed 2030 shows the astonishing fact that while we can generate detailed topographical maps of Mars, where no human being has ever been, a topographical map of the Earth, 70% of which is covered by the oceans, is far from complete. We hope that by reading the main texts along with the boxed articles, the readers will be invited to develop a much deeper understanding of the diverse and complicated issues of the oceans.

(Toshio Yamagata)

1 The First United Nations Ocean Conference

1 Background of Sustainable Development Goals (SDGs)

The United Nations Ocean Conference, the first conference dedicated to discussion among States, international organizations, NGOs, and others, on implementation of Goal 14 of the SDGs (SDG14), “Conserve and sustainably use the oceans, seas and marine resources for sustainable development,” was held at UN Headquarters in New York in June 2017.

Before reporting on the first Ocean Conference, I will give the background on adoption of the SDGs at the 2015 United Nations Sustainable Development Summit as well as an overview of relevant laws and policies.

(1) The Road to Adoption of the SDGs

The discussion on a framework for sustainable development and the SDGs dates back to the 1987 Report, “Our Common Future,” prepared by the World Commission on Environment and Development (the Brundtland Commission). In response to the report, which suggested for the first time that development could be compatible with the environment, the United Nations held the UN Conference on Environment and Development (the Rio Earth Summit) in 1992. At the Rio Summit, delegates agreed to adoption of Agenda 21, a plan of action regarding sustainable development, and signing of the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). The Rio Summit has had a significant impact to date on efforts to protect the global environment, including the ocean environment. Chapter 17 of Agenda 21 set forth a policy framework and action plan for comprehensive governance and sustainable development of the oceans.

The Rio Summit initiated the effort aimed at sustainable development of the oceans, leading to the World Summit on Sustainable Development (WSSD, Johannesburg Summit) in 2002 and the United Nations Conference on Sustainable Development (Rio+20) in 2012. The Johannesburg Plan of Action, adopted at WSSD 2002, included promotion of coastal and ocean management and establishment of mechanisms for scientific assessment and reporting regarding the condition of the oceans. The Future We Want, an outcome document of Rio+20, recognized the issue of oceans as one of the thematic areas of cross-sectoral issues. The document devoted 30 paragraphs on the action plan to prompt actions necessary for conservation and sustainable use of the oceans and coastal areas.

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



Figure Sustainable Development Goals (SDGs)
(Source : <https://www.un.org>)

Rio+20 was significant in terms of initiating robust discussion on SDGs. It was also agreed there to establish a protocol for inter-governmental discussion and to incorporate the Millennium Development Goals (MDGs), international development goals for the year 2015 established in 2000, into the SDGs. Responding to the future of sustainable development envisioned at Rio+20, the 2030 Agenda for Sustainable Development, which set up the SDGs, was adopted at the United Nations Sustainable Development Summit in 2015. The SDGs identified agendas for the international community to work towards 17 goals and 169 targets. The goal regarding the oceans was set out in SDG14, to “Conserve and sustainably use the oceans, seas and marine resources for sustainable development.”

(Tomohiko Tsunoda)

2 Outcome of the United Nations Ocean Conference

(1) Overview of the United Nations Ocean Conference

In December 2015 the General Assembly of the United Nations decided to convene the “High-Level United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development²,” also known as the United Nations Ocean Conference. In September 2016, a resolution was adopted by the General Assembly to create a framework for the Ocean Conference. It was decided that the Governments of Fiji and Sweden should retain co-hosting responsibilities, that the Conference should involve all relevant stakeholders, bringing together National governments, the UN system, other intergovernmental organizations, non-governmental organizations, civil society organizations, academic institutions, the scientific community, the private sector and other actors involved in the implementation of SDG14, and that the overarching theme of the Conference

² A/RES/70/226, para. 1.

3 A/RES/70/303

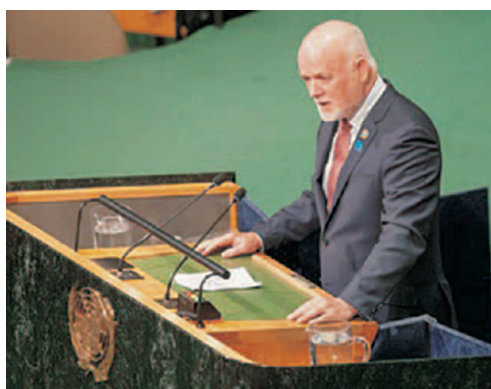


Figure The United Nations Ocean Conference
 (Top) The Secretary General of the United Nations and the co-chairs of the Ocean Conference at the opening ceremony.⁴
 (Middle) Closing Ceremony of the Ocean Conference (the General Assembly Hall)⁵
 (Bottom) United Nations General Assembly President Peter Thomson gives a speech at the Ocean Conference.⁶

⁴ UN photo by Mark Garten

⁵ UN photo by Evan Schneider

⁶ UN photo by IISD/ENB Mike Muzurukis

should be “Our ocean, our future : partnering for the implementation of SDG14³.” In accordance with the resolution, the Preparatory Meeting of the Ocean Conference was held in February 2017. Delegations discussed input into the “Call for Action” declaration, an outcome document to be adopted at the Conference, and considered themes for partnership dialogues to be convened during the Conference. From March to May, involved parties coordinated to draft the “Call for Action.”

The Ocean Conference was held at UN Headquarters from 5 to 9 June 2017, with Prime Minister Bainimarama of the Republic of Fiji and Sweden Deputy Prime Minister Isabella Lövin serving as co-chairs of the conference.

The Conference brought together participants from governments, including Heads of State and government and high-level representatives, the UN system and other intergovernmental organizations, NGOs, civil society, academia, the scientific community, and the private sector. The Official Program included eight Plenary Sessions, a “World Ocean Day” special event and partnership dialogues on seven themes: 1) Marine Pollution; 2) Conserving Marine and Coastal Ecosystems; 3) Ocean Acidification; 4) Sustainable Fisheries;

5) Small Island Developing States (SIDS) and Least Developed Countries (LDCs); 6) Scientific Knowledge and Capacity Building; and 7) Implementation of the United Nations Convention on the Law of the Sea. In addition, the Conference also saw the hosting of more than 150 side events.

At the Plenary Session on the last day of the Conference, a “Call for Action,” drafted at a preparatory meeting, was adopted by consensus. United Nations General Assembly President Peter Thomson noted that the Conference generated momentum to achieve not only SDG14, but also all of the 17 SDGs and appreciated it as a game-changing conference. He delivered a strong message that it was high time for all stakeholders to take action.

(2) Outcomes of the United Nations Ocean Conference: Call for Action and Voluntary Commitments

The outcome document of the Ocean Conference, the “Call for Action⁷,” consists of 14 paragraphs. The first half recognizes concerns regarding the oceans, such as the current status of the oceans (Paragraphs 1 to 3), climate change (Paragraph 4), and decline in the health and productivity of the oceans and its ecosystems (Paragraph 5). Paragraph 13 lists specific actions to be taken, including strengthening and promoting effective and transparent multi-stakeholder partnerships, including public-private partnerships (subparagraph c), promoting ocean-related education and ocean literacy (subparagraphs d–e), dedicating greater resources to research, sharing of data, and scientific study of the oceans (subparagraph f), accelerating actions to prevent and significantly reduce marine pollution including minimizing waste and reducing the use of plastics and microplastics (subparagraphs g–i), supporting the use of area-based management tools, including marine spatial planning (MSP), integrated coastal zone management (ICM) and marine protected areas (MPAs) (subparagraph j), implementing effective climate change adaptation and mitigation measures (subparagraph k), enhancing sustainable fisheries management, including ending illegal, unreported, and unregulated (IUU) fishing, strengthening small-scale and artisanal fishers and regulating fisheries subsidies (subparagraphs l–p), promoting ocean-based industries and economies in SIDS and LDCs (subparagraph q–r), engaging actively in discussions of “the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ)” (subparagraph s), and others. It pledges to undertake these tasks with all stakeholders. Following the conclusion of the Conference, the Call for Action was reported to the General Assembly in July 2018, and endorsed as an UN General Assembly resolution⁸.

Another major outcome of the Ocean Conference is voluntary commitments by various entities. All stakeholders including governments, the United Nations, International Organizations, NGOs, civil societies, academia, and the private sector have voluntarily committed themselves to take measures and initiatives to achieve the SDGs as outlined in the Call for Action.

Each stakeholder registered its commitment with the Secretariat of the Conference and the commitments were published on the web. To follow-up on the implementation of these voluntary commitments, a platform to report the progress of the voluntary commitment and to share knowledge was established on the Ocean Conference website.

As of February 2018, more than 1,400 voluntary commitments have been registered. 615 commitments, the majority, were submitted by governments (43%), followed by NGOs (about 20%), the United Nations and Interna-

⁷ A/RES/71/312, Annex “Our Ocean, our future: call for action”

⁸ *Ibid*, para. 2

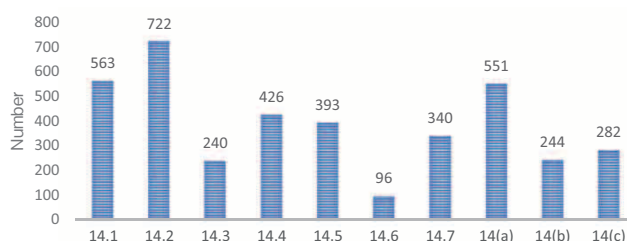


Figure Voluntary Commitments by SDG14 Targets
(As of the end of February 2018)

tional Organizations (13%), the private sector (6.2%) and civil society (5.9%).

The most frequently addressed target was target 14.2 (protection of marine and coastal ecosystems), followed by target 14.1 (control of marine pollution such as marine debris) and 14 (a) (promotion of scientific and other research and technology transfer). More than 500 commitments have been registered for each target. Some commitments related to more than one target and were counted more than once.

3 Japan's Participation

The Japanese government delegation, consisting of officials from the Ministry of Foreign Affairs, the Ministry of the Environment, the Fisheries Agency, and others, attended the Ocean Conference. The delegation stated in a Plenary Session that the Japanese government identified marine debris, ocean acidification, sustainable fisheries, and support for Small Island Developing States (SIDS) as high-prior-

Table Voluntary Commitments Registered by the Japanese Government

—	SDG14	Commitment	Lead Entity	Financing	ID
1	14.1	Administration of Regional 3R Forum in Asia and the Pacific	Ministry of the Environment, Japan	US \$ 400,000	18229
2	14.1	Establishment and Management of African Clean Cities Platform	Ministry of the Environment, Japan, JICA (Japan International Cooperation Agency) and others.	TBD	18001
3	14.1/a	Marine Environment Protection through CERAC (Special Monitoring & Coastal Environmental Assessment Regional Activity Centre) of NOWPAP (Northwest Pacific Action Plan)	Ministry of the Environment of Japan, Ministry of Foreign Affairs of Japan, Ministry of Land, Infrastructure, Transport and Tourism of Japan and others	US \$ 2,647,000	17562
4	14.1/a	Marine Litter Management through TEMM (the Tripartite Environment Ministers Meeting among China, Japan, and Korea)	Ministry of the Environment of Japan and others	US \$ 861,209	17562
5	14.1/a	Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management (J-PRISM) in Pacific Island Countries Phase II	JICA	US \$ 15,000,000	17962
6	14.1/2/5/a	Sharing and Use of Data on Marine Biodiversity and Marine Debris	Ministry of Education, Culture, Sports, Science and Technology of Japan, and JAMSTEC	In Kind Contribution	17602
7	14.1/2/4/7/a	APEC Project Workshop on Marine Observation and Research Towards Evidence Based Sustainable Ocean Governance	The Government of Japan	US \$ 155,000	17090
8	14.2/a	Dispatch of Experts on Coastal and Marine Resources Management	JICA	US \$ 300,000	17998
9	14.2/3/a	Japanese Technical Cooperation Project for Comprehensive Assessment and Conservation of Blue Carbon Ecosystems and Their Services in the Coral Triangle (Blue CARES)	JICA	US \$ 4,000,000	17983
10	14.3	Global Standardization of Micro X-ray Computer Tomography (MXCT) Technique to Quantify Density of Marine Calcifiers Carbonate Test	Ministry of Education, Culture, Sports, Science and Technology of Japan and JAMSTEC (Japan Agency for Marine-Earth Science and Technology)	Management expenses grants from Japanese government	17466
11	14.3/a	Enhancement of Ocean Observation Network	Ministry of Education, Culture, Sports, Science and Technology of Japan, JAMSTEC (Japan Agency for Marine-Earth Science and Technology)	In Kind Contribution	17470

ity issues, and announced that Japan registered 11 voluntary commitments.

In addition to the Japanese government, The Nippon Foundation, in collaboration with the United Nations Division for Ocean Affairs and the Law of the Sea (DOALOS), registered a new capacity building project. The Ocean Policy Research Institute of the Sasakawa Peace Foundation (OPRI-SPF) registered the Islands and Oceans Net (IO Net). OPRI-SPF serves as the Secretariat of IO Net, which is an international collaborative network of various stakeholders from SIDS and the international community to promote sustainable development of SIDS and sustainable management of their surrounding oceans.

OPRI-SPF is also one of the lead entities of the voluntary commitment to implement the Roadmap to Oceans and Climate Action (ROCA) initiative. Other commitments registered by Japanese organizations include an International Environmental Education Program on Micro-plastic Pollution by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), and a commitment to an Eco Ship Project by Peace Boat.

The Nippon Foundation Chairman Yohei Sasakawa attended and delivered a statement at one of the Plenary Sessions and proposed establishing an inter-governmental panel for international ocean governance¹⁰. He shared the rostrum, as one of the key persons of the Oceans, with United Nations General Assembly President Peter Thomson at the World Oceans Day special event. At a side event hosted by UNESCO-IOC on June 6th, Chairman Sasakawa was commended for his distinguished achievement as one of the “Ocean’s 8” awardees, which honors national ocean science champions, along with Craig McLean, assistant administrator of the US National Oceanic and Atmospheric Administration, and Princess Lalla Hasna of Morocco. In his acceptance speech, Chairman Sasakawa announced The Nippon Foundation’s commitment to support NF-GEBCO Seabed 2030, a joint project with the General Bathymetric Chart of the Oceans (GEBCO), which aims to have 100% of the topography of world’s oceans mapped by 2030.

The Ocean Conference has established a flexible and transparent framework to support the specific measures to achieve SDG14 of all stakeholders by combining the Call for Action and the Voluntary Commitments mentioned above. Under the principles and guidance stipulated in the Call for Action, each entity registers and implements voluntary commitments and discusses the progress and outcome of the measures together. Furthermore, the United Nations offers follow-up by providing a mechanism for sharing knowledge and findings to incrementally strengthen implementation of SDG14 around the world. This framework was the



Figure The Nippon Foundation Chairman Yohei Sasakawa delivers a statement at a plenary session.⁹

⁹ <https://www.nippon-foundation.or.jp/news/articles/2017/47.html>

¹⁰ https://sustainable-development.un.org/content/documents/26131Nippon_Foundation.pdf

most significant outcome of the Conference. The Ocean Conference was not an isolated event, with the second Ocean Conference to be held in 2020. We expect the Ocean Conference to be convened on a regular basis for years into the future and serve as a foundation for the steady implementation of SDG14.

(Mai Fujii)

2 Regional Developments

1 Efforts for Capacity Building on Maritime Safety and Law Enforcement in Pacific Island Countries

According to the Food and Agricultural Organization (FAO) of the United Nations, of all fish stocks in the world, fully fished stocks accounted for 58.1% and 31.4% were fished at a biologically unsustainable level and therefore over-fished¹¹. In other words, almost 90% of the world's marine fish stocks are fished at just below or over the limit of sustainable levels. In addition, illegal, unregulated and unreported (IUU) fishing may account for about 18% of the world's total annual capture fisheries output, and is estimated to represent significant economic losses of 1.0 to 2.3 billion US dollars¹².

The Republic of Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands in the western central Pacific Ocean are known for having good fishing grounds for migratory species such as bonito and yellowfin tuna, with 60% of the world's bonito stocks being fished in this area. These fishery stocks migrate within the Exclusive Economic Zones (EEZs) of the three Micronesian nations, spanning 5.6 million square kilometers. (For reference, Japan's EEZ is the sixth largest in the world at 5.4 million square kilometers.) However, the capacities of these governments' maritime law enforcement bodies to watch over and manage such a vast ocean area are very limited. As things stand now, less than 10 agents and a few small vessels are engaged in maritime surveillance and law-enforcement activities. The world population is expected to reach 9 billion in 2050 and global demand of quality fishery resources is increasing. Advancement in fishing techniques, larger fishing vessels, and globalization of distribution channels are exacerbating the problem of illegal fishing operations by foreign vessels for the three Micronesian nations.

Under such circumstances, in 2008 the President of the Marshall Islands appealed to The Nippon Foundation Chairman Yohei Sasakawa for support to strengthen the maritime surveillance capacities of the three Micronesian nations. In response, The Nippon Foundation and The Sasakawa Peace Foundation played a key role in the initiation of the "Project for Strengthening Maritime Surveillance

¹¹ FAO, The State of World Fisheries and Aquaculture 2016

¹² Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, Beddington JR, et al. (2009) Estimating the Worldwide Extent of Illegal Fishing. PLoS ONE 4 (2) : e4570. <https://doi.org/10.1371/journal.pone.0004570>

Capacity in Three Micronesian Nations.” The three Micronesian nations occupy an important position in geopolitical terms as they are located almost in the center of the Pacific Ocean, and the governments of the United States and Australia have long provided support. Notably, the Australian government launched the “Pacific Patrol Boat Program”



Figure A patrol boat delivered to the Republic of Palau in 2017
(Photographed in February 2018)

to improve maritime surveillance and response capabilities of Pacific island countries, including the three Micronesian nations. The program has provided mid-size patrol boats as well as training of personnel engaged in surveillance and law enforcement. In March 2010, The Nippon Foundation and The Sasakawa Peace Foundation called upon the governments of the three Micronesian nations as well as those of the United States, Australia, and Japan to come together in a joint government and private sector foundation conference as a forum for dialogue. After repeated discussions, the participants reached consensus on specific measures of support.

Based on the consensus, The Nippon Foundation and The Sasakawa Peace Foundation agreed to implement support measures including: to provide small craft to be utilized for law enforcement activities in the coastal areas of island nations where shoals, such as atolls, prevent effective use of larger patrol boats; to provide assistance for capacity building of coast guards and officers for the patrol boats; and to provide long term funding for fuel and communication expenses to sustain the utilization of the small craft provided. These holistic support measures are possible only by private organizations and have been implemented as needed since 2012. Thus far, The Nippon Foundation and The Sasakawa Peace Foundation have provided three small craft to the Republic of Palau, one to the Federated States of Micronesia, and two to the Republic of the Marshall Islands.

In recent years, Micronesian nations have faced the significant challenge of protecting the ocean environment from rapidly growing numbers of foreign visitors, mainly from China. Palau has seen the number of visitors rising threefold to 150,000 in the past 10 years. A hotel construction boom to accommodate tourists, increasing amounts of garbage and a lack of infrastructure, such as sewage treatment facilities, are threatening the ocean environment. In addition, changes in the marine environment due to climate change are transforming the ecosystem itself, including coral reefs, which are resources for tourism.

Acknowledging the difficult challenges of sustainable development these island nations face, in February 2015 The Nippon Foundation signed a Memorandum of Understanding with the Republic of Palau to create the “21st Century Japan-Palau

Sustainable Ocean Alliance,” which focused on maritime law enforcement capabilities and the promotion of eco-friendly tourism. The MOU resulted in a February 2016 agreement on support measures to provide a 40-meter medium-sized patrol boat, support for the construction of a building for the Division of Maritime Law Enforcement of Palau, support for capacity building of crews, and, regarding environmental protection, support for studies and capacity development leading to eco-friendly tourism. In fiscal year 2017, a ceremony to deliver the patrol boat and to commemorate the new government office building was held with President Tommy E. Remengesau, Jr. of the Republic of Palau in attendance.

Considering the sheer scale of the oceans and the complexity of the issues surrounding them, it is self-evident that these issues cannot be resolved through the efforts of one country alone. What is needed is a new cooperative and collaborative framework that transcends the present one which is based on organizations, sectors, and States. The project to support the three Micronesian countries in strengthening their maritime law enforcement capabilities is one, that, while centering on the collaboration between private sector organizations such as The Nippon Foundation and the three Micronesian States, is also characterized by the inclusion of diverse stakeholders, including the governments of Japan, the United States, and Australia. In this respect, the project could be considered a leading-edge initiative in the solving of international ocean problems. There is hope that the project will become a model in utilizing effective coordination among diverse stakeholders to solve the problems faced by island nations such as the three Micronesian countries.

(Takashi Arikawa)

1 The Basic Act on Ocean Policy: 10 Years After Enactment

1 Summary of the First 10 Years of the Basic Act on Ocean Policy

The Basic Act on Ocean Policy (the Act) was promulgated in April 2007 and came into effect on July 20 of the same year. The Act provides that “the Government shall formulate a basic plan with regard to the ocean in order to promote measures that address ocean issues comprehensively and systematically.” Accordingly, the Cabinet approved the First Basic Plan for Ocean Policy in March 2008. Ten years have passed since.

Japan is an oceanic State. The Act was created to address closely interrelated ocean issues based on the United Nations Convention on the Law of the Sea (UNCLOS), other international agreements, and efforts to achieve sustainable development and use of the oceans. Following the leading principles of the Act, Japan has promoted measures with regard to the oceans. However, in retrospect, the road to that goal has not always been a smooth one.

The Act stipulates 12 basic policy measures that require comprehensive approaches. These include *Promotion of Development and Use of Ocean Resources*, *Conservation of Marine Environment*, and others. Progress varies widely according to the measure.

The Second Basic Plan, decided by the Cabinet on April 2013, identified six “measures to be intensively promoted under the Plan.” Since the enactment of the Act, measures such as *Promotion and Creation of Marine Industries*, *Developing Human Resources* and *Improving Technological Ability*, *Comprehensive Management of Sea Areas* and *Formulation of Plans* have been considered important policy measures to position Japan as a new oceanic State. However, it is difficult to say that the effort has produced satisfactory results in the five years since the formulation of the Second Basic Plan.

Comprehensive Management of Sea Areas, i.e., Exclusive Economic Zones (EEZ), the continental shelf, and extended territorial seas, which come under the management of coastal states by UNCLOS, and comprehensive management of coastal zones taken up by the international agenda for sustainable development, has not been progressing smoothly, except for the conservation of remote islands.

UNCLOS prescribes EEZ to extend out to 200 nautical miles from the coast. Coastal states and the international community have been endeavoring to promote the development, use, and preservation and management of their expansive EEZs.

Table Progress in Implementing Leading Measures Since the Enactment of the Act

Year	Policy Measures
2008	The Act on Navigation of Foreign Ships through the Territorial Sea and Internal Waters/Partial Amendment to Marine Transportation Act/Submission of extended continental shelf claim to the Commission on the Limits of the Continental Shelf
2009	The Marine Energy and Mineral Resources Development Plan/The Law on Punishment of and Measures against Acts of Piracy/The Basic Policy on Preservation and Management of Remote Islands for Ocean Governance
2010	Establishment of the Marine Information Clearing House/Low-Tide Line Preservation Act/The Act on Special Measures concerning Cargo Inspections/The Basic Low-Tide Line Preservation Plan
2011	Future Policy for Exploration and Scientific Research of Minerals in the EEZ, etc./Marine Biodiversity Conservation Strategy/Approaches to establishing Marine Protected Areas in Japan/The Act to Partially Amend the Mining Act and for Other Purposes
2012	Receipt of Recommendations of The Commission on The Limits of The Continental Shelf in Regard to the Submission Made by Japan/Future Policy on Promoting the Use of Marine Renewable Energy
2013	The Act on Special Measures Concerning Security of Japanese Vessels in Areas with High Incidents of Piracy/First Offshore Methane Hydrate Production Test Aiming to Commercialize Methane Hydrate Development/Naming of remote border islands and registering them as state properties
2014	Future Policy towards Extension of the Continental Shelf
2015	The Basic Policy on Preservation and Management of Remote Islands for Ocean Governance (Amended)/Japan's Arctic Policy
2016	The Act on Preservation of Areas of Remote, Inhabited Islands Establishing Territorial Seas and Maintenance of Local Societies on Areas of Specified Remote, Inhabited Islands Establishing Territorial Seas (Entered into force in April 2017) /Measures to Strengthen Japan's Maritime Domain Awareness
2017	Second Offshore Methane Hydrate Production Test Aiming to Commercialize Methane Hydrate Development

Meanwhile, Japan, having the 6th largest EEZ in the world, is still slow in taking steps toward effective management.

However, looking back at the last ten years of its effort to become a new oceanic State, Japan has made progress (See Table).

In recent years, the international effort concerning the oceans has been gathering steam again. At the same time, conflicts over the oceans among coastal states are rising to the surface.

Against this background, understanding of the Basic Act's intent, to comprehensively address the issues surrounding the oceans, has spread among public and private stakeholders and efforts to create frameworks for cooperation and collaboration for ocean governance are taking off in Japan.

2 Outlook for the Next 10 Years

Ten years have passed since the enactment of the Basic Act on Ocean Policy and Japan's ocean governance efforts are entering a new stage. The Act recognizes "the fact that the oceans, occupying broad portion of the globe, are an indispensable factor for maintaining the lives of the living beings including mankind,

and the fact that it is important to realize a new oceanic State in harmonization of the peaceful and positive development and use of the oceans with the conservation of the marine environment, under the international cooperation, as our State surrounded by the oceans, based on the United Nations Convention on the Law of the Sea and other international agreements as well as on the international efforts on the realization of sustainable development and use of the oceans.” (Article 1)

For the last 10 years, international efforts towards establishment of the rule of law concerning ocean governance and sustainable development and use of the oceans have made further progress. At the same time, there are ongoing international conflicts and disputes among nations keen to secure and expand their own ocean interests.

On formulating the Third Basic Plan on Ocean Policy, which is due in Spring 2018, we are called on to thoroughly consider how Japan as an oceanic State should address ocean issues and with what kind of principles and policies. The Recommendations for Formulating the Third Basic Plan on Ocean Policy (the Recommendations) discussed policy ideas and directions from a long-term perspective beyond the 5-year period of the Basic Plan and identified major themes: *Maritime Comprehensive Security*, *Promotion of Industrial Use of the Oceans*, *Maintain and Protect the Maritime Environment*, and *Develop Human Resources*. While all of these themes are essential, as Prime Minister Shinzo Abe declared *Comprehensive Maritime Security* as the overriding issue at the meeting of the Headquarters for Ocean Policy held in April 2017, the Recommendations put it at the top of the agenda. They stated that “the government should form a united front to address various challenges in the context of ocean policy, seeing *Maritime Security* from a broader perspective.”

Maintain and Protect the Maritime Environment is also a subject of importance, taking into consideration that, in recent years, international efforts to establish the rule of law on ocean governance and sustainable development and use of the oceans have made progress and continue to move forward. The United Nations Ocean Conference was held to support implementation of the SDGs. In addition, the “Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction” was convened. It goes without saying, that as ocean governance initiatives gain momentum, it is essential for Japan as an oceanic State to address these issues appropriately. It is closely related to the fact that *Maintain and Protect the Maritime Environment* is positioned as a policy measure to support *Maritime Security*. As for the Maritime Environment, Article 192 of the United Nations Convention on the Law of the Sea provides “States have the obligation to protect and preserve the marine environment” and Article 56 stipulates “in the exclusive economic zone, the coastal State has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources... [and] jurisdiction as provided for in the relevant provisions of this convention with regard to...the protection and preservation of the marine environment.” There is a need for an

appropriate response to address these challenges.

Importance has also been placed on *Promotion of Industrial Use of the Oceans* and *Develop Human Resources* since the enactment of the Basic Act. Article 5 of the Basic Act has as its guiding principle the *Sound Development of Ocean Industries* and provides that “with regard to the industries bearing the development, use and conservation of the oceans in consideration of the fact that they are the basis for the sound development of the economy and society of our State and of stabilization and improvement of the lives of the citizenry, their sound development shall be promoted.” In other words, it is based on the idea that we cannot promote development, use, and conservation of the oceans without the development of the industries involved. In addition to their development and use, ocean industries should also address the conservation of the oceans. Policy measures that foster sound development of ocean industries must tackle both sides of the issue.

Lastly, it needs to be mentioned that, recently, the business community has been actively participating in efforts to address comprehensive management and sustainable development of the oceans, including the United Nations Ocean Conference held in June 2017 at UN Headquarters.

(Hiroshi Terashima)

2 Revision of the Basic Plan on Ocean Policy

1 The Third Basic Plan on Ocean Policy

Japan has introduced various policy measures on the oceans in a comprehensive and systematic manner as outlined in the Basic Plan on Ocean Policy (the Plan). The Second Plan currently in effect was formulated in April 2013 and its 5-year term will end on March 31, 2018. In response to new developments and environmental changes concerning the oceans, efforts to formulate the Third Plan are currently underway.

Regarding the development of the Third Plan, I will outline the background to the discussions at the Advisory Council / Councilors’ Meeting and the Advisory Council / Councilors’ Recommendations.

(1) National Ocean Policy Secretariat re-established in the Cabinet Office

Since all ocean policy measures involve the oceans as a shared concern, implementing ocean policy requires a comprehensive government-wide coordination of various measures covering a broad range of fields. Thus, the Basic Act on Ocean Policy (the Act) was put into force in July 2007. The Headquarters for Ocean Pol-

icy was established pursuant to the Act. It is led by the Prime Minister as the Director-General and consists of all of the Ministers of State. On July 20, 2007, the Administrative Office of the Headquarters for Ocean Policy was set up under the Cabinet Secretariat. Since then, the Administrative Office has played a major role in promoting ocean policy measures under the Headquarters' leadership. It facilitated Cabinet approval of the First and Second Plans and coordinated submission of the Extended Continental Shelf. It also contributed to enactment of the Anti-Piracy Act and Low-Tide Levels Preservation Act.

On April 1, 2017, the Administrative Office was renamed the National Ocean Policy Secretariat and placed directly under the Cabinet Office. With this development, a permanent Secretariat has been established as a statutory office, 10 years since enactment of the Basic Act on Ocean Policy. In addition to its continued responsibility for administrative functions of the Headquarters for Ocean Policy, the Secretariat also has administrative responsibility for implementing the Inhabited Remote Border Islands Act, which requires specific and specialized handling. Thus, a framework has been laid out to implement ocean policy in a continuous and comprehensive fashion.

(2) Discussion at the Advisory Council / Councilors' Meeting

Prior to the government commencing work to formulate the Third Plan, ocean policy measures were discussed at the Advisory Council / Councilors' Meeting. The Advisory Council / Councilors' Meeting was established in the Headquarters for Ocean Policy as an advisory body to study measures of particular significance in implementing the Ocean Policy and to make a recommendation to the Director-General. In Fiscal Year (FY) 2016, four project teams held a series of discussions and selected four main themes to be addressed in the next Plan: Ensuring Safety and Security on the Oceans; Promotion and Creation of Marine Industries; Conservation of the Marine Environment; and Ocean Related Human Resources Development. Mr. Koji Miyahara, the Chair of the Councilors' Meeting, delivered the Recommendations of the Advisory Council / Councilors' Meeting of FY 2016 personally to the Prime Minister Abe on March 30, 2017.

In response, a meeting of the Headquarters for Ocean Policy was held in April 2017. It was decided to develop the Third Plan based on the recommendations with cooperation and collaboration between relevant government ministries and agencies, aiming for cabinet approval around spring of 2018.

To conduct comprehensive deliberations regarding the next Plan, the Advisory Council / Councilors' Meeting set up a Basic Plan Committee. A subcommittee and three project teams were placed under the Committee's purview to evaluate and deliberate on the four major themes selected in FY 2016. At the same time, the Basic Plan Committee discussed additional issues, including enhancement of scientific knowledge, based on the pre-FY 2016 findings. These efforts resulted in the Written Statement of Recommendations of the Advisory Council / Councilors' Meeting. Mr. Miyahara, the Chair of the Advisory Council / Councilors' Meeting, delivered the Statement personally to the Prime Minister Abe on December 18, 2017.

2 Outline of Recommendations for Formulating the Third Basic Plan on Ocean Policy

Recommendations for Formulating the Third Plan (the Recommendations) suggest the next Plan should be formulated in light of the progress in implementation of the current Plan and in view of the recent change in circumstances concerning the oceans. The next Plan needs to take into account the changes in circumstances on the oceans, especially in regards to Japan's surrounding waters, such as environmental changes and increasing threats; Japan's difficult national security environment; and the current status of the effort to realize "open and stable seas" based on the "rule of law." It recommends radically reconfiguring the Plan to broadly face the challenge of ensuring the safety and security of the oceans. The next Plan should be a new guide to work proactively to ensure the safety and security of the citizenry and to show strong leadership in securing Japan's maritime interests.

For the 5 year term of the Third Plan, the following measures are also recommended to be included: to promote development and utilization of marine mineral resources and accelerate development of offshore wind farming to ensure a stable supply of energy and resources; to conserve the marine environment by taking active part in international frameworks and promote comprehensive management of coastal areas; to foster and secure human resources who will support the growth of Japan as an oceanic state; to enhance scientific knowledge; to engage in international collaboration and cooperation; and to promote Arctic policy.

In order to ensure steady implementation of the policy, it is important to establish a structure to implement and promote the Plan by adopting the "PDCA cycle" (plan-do-check-act) of process management, which includes the use of "plain language" and "goal setting." The implementation strategy should be clarified and indicators to better understand and evaluate the progress should be developed for each measure process schedule (Plan). Then, the measure should be implemented according to the Plan (Do), the results evaluated (Check), and a review of the process conducted and recommendations made for the next cycle of PDCA (Act).

Based on these recommendations, the work to formulate the next Plan is underway by the government.

(Masahiko Okubo)



Figure Chairman Miyahara delivered the Recommendations for formulation of the Third Basic Plan on Ocean Policy to Prime Minister Abe.

(December 18, 2017)

1 International Developments

1 Roadmap to Oceans and Climate Action (ROCA)

The 23rd annual Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP23) took place in Bonn, Germany from November 6 to 17, 2017. In 2016, both the global average temperature and the sea surface temperature set all-time highs, indicating how the global impact of climate change is becoming of increasing concern. COP23 served as the venue to discuss implementation of the Paris Agreement, a new international framework entered into force in November 2016 that set a goal to mitigate greenhouse gas (GHG) emission after 2020. The Conference brought together 31,000 participants including delegates from Parties to the UNFCCC, as well as representatives of regions, international organizations and NGOs.

Delegates continued negotiations on the terms of the Implementation Guidelines for the Paris Agreement to be adopted at the 24th Session of the Conference of the Parties to the UNFCCC (COP24) in 2018. They also finalized the design of the Facilitative Dialogue to be known as the *Talanoa Dialogue*, calling on the Parties to raise their GHG emission mitigation ambition before the 2020 implementation of the Paris Agreement.

The Republic of Fiji held the COP23 Presidency, with H.E. Josaia Voreqe Bainimarama, Prime Minister of Fiji, as President, marking the first time a Small Island Developing State (SIDS) presided over the conference. Particularly vulnerable to the impact of climate change, SIDS countries were part of the founding members of the High Ambition Coalition that played an important role in concluding the Paris Agreement, which aims to keep a global temperature rise well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius by achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century. Fiji's presidency over the negotiation at COP23 is of great significance.

The *Talanoa Dialogue* is slated to start in 2018, with the IPCC 1.5 degree Celsius target progress report also to be issued in the same year. *Talanoa* is a traditional term used across the Pacific to reflect a process of inclusive, participatory and transparent dialogue. As the Presidents of COP23 and COP24 respectively, Fiji and Poland will lead this facilitative dialogue. Based on results of separate talks that Fiji and others will hold with Parties, the discussion will be held

1) to verify current GHG emission amount, 2) to validate the adequacy of post-2020 emission reduction targets and 3) to review emission reduction measures.

The COP23 Fiji Presidency also took the leadership for making the oceans an integral part of the UNFCCC process by 2020 with an initiative titled the “Ocean Pathway - Towards an Ocean Inclusive UNFCCC Process.” In addition, a Fiji-led initiative on the oceans that would ensure allocation of climate change funding to the oceans within the existing financial mechanisms of the UNFCCC to pursue health of the oceans and to conserve coastal marine ecosystem attracted a broad support. To bring about a synergy, the Ocean Pathway initiative also aims for alignment with existing climate and ocean initiatives and alliances. One of these is the Ocean & Climate Initiative Alliance, established mainly with NGOs and research institutions and supported by the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), the Roadmap to Oceans and Climate Action (ROCA), the International Alliance to Combat Ocean Acidification, and the “Because the Ocean” Initiative.

More representatives of non-parties attended COP23 than those of parties to the convention. In order to implement the Paris Agreement, it is essential for a broad range of Stakeholders, including not only national governments, but also local governments, business enterprises, research institutions, NGOs, and civic organizations to participate in the Conference.

Around 400 side events were held at COP23, attracting a wide range of participants. They provided a platform to present on recent research progress and actions taken to address climate change, policy proposals, networking and solidarity building. The Ocean Policy Research Institute of the Sasakawa Peace Foundation (OPRI-SPF), in coordination with the Global Ocean Forum, IOC-UNESCO, among others, held an ocean and climate policy event titled “Oceans Actions Day” on November 11, 2017.

ROCA is an initiative involving 37 governments, international agencies, scientific institutions, and NGOs to address closely related issues of the oceans and climate. The initiative prepared the “Strategic Action Roadmap to Oceans and Climate Action: 2016-2021” and has been calling on various stakeholders for its implementation.

The “Oceans Actions Day” policy event is positioned as a part of the Marrakech Partnership for Global Climate Action, launched at COP22 held in Marrakech, Morocco to support climate action by non-party members until 2020. This policy event bears a part in mobilizing further action in the area of Oceans and Coastal Zones, one of the major themes of the Marrakech Partnership.

Around 80 speakers from governments, NGOs, research institutes, and international organizations, including high-level government officials in charge of climate change and ocean issues, along with around 400 participants discussed issues including comprehensive strategy, scientific study, fishery resource management, blue carbon (carbon captured by the world’s oceans and coastal ecosystems), fund-raising, ecosystem-based adaptation, and migration and displacement.

At the “Oceans Actions Day” event, the Hon. Inia Seruiratu, Minister for Agri-



Figure Oceans Actions Day Plenary Session

Photo top : (From left) Mr. Peter Thomson, UN Special Envoy for the Ocean, Mr. Tommy Remengesau, President of the Republic of Palau, and Mr. Anote Tong, Former President of Kiribati
 Bottom : Dr. Atsushi Sunami, President of OPRI-SPF

culture, Rural and Maritime Development and National Disaster Management of Fiji, and High-Level Champion for Climate Change Action, gave an opening statement as a representative of the COP23 presidency holder. He warned that rising ocean temperatures, ocean acidification, rising sea-levels, and storms were threatening people's livelihoods in vulnerable developing small island countries. H. E. Karmenu Vella, European Commissioner for Environment, Maritime Affairs, and Fisheries, H.E. Mr. Jochen Flashbarth, State Secretary, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of Germany, and other speakers followed. Mr. Ernesto Peñas-Lado, Director of Policy Development and Coordination, DG Maritime Affairs and Fisheries of European Commission, indicated that changes to the existing system, such as allocation of fishery rights, should be necessary to reflect change of habitats and migration patterns of fishery resources due to environmental shifts caused by climate change. Ms. Inger Andersen, Director General of the International Union for Conservation of Nature (IUCN), noted that reinforcing ecosystem-based disaster prevention functions in coastal zones would provide diverse benefits and should be beneficial to regional communities in the long term. She also pointed out the importance of sharing best practices.

Dr. Miko Maekawa, Senior Research Fellow, OPRI-SPF, and Mr. Carl Bruch, Esq., Environmental Law Institute of the United States, co-chaired the session on Migration and Displacement, which was one of the seven major sessions. H.E. Mr. Enele Sopoaga, Prime Minister of Tuvalu, talked about indivisibility of the issues of the oceans and climate change, and highlighted the importance in developing a legal framework to address the challenges of migration caused by climate change.

In the Closing Plenary Session, H.E. Tommy Remengesau, President of the Republic of Palau, called for the international community to advance comprehensive discussions on healthy oceans and safe climate, as well as the regional communities depending on them. Dr. Atsushi Sunami, President of OPRI-SPF, indicated the significance of promoting science-based research aiming at conservation and sustainable use of the oceans and implementation of evidence-based policies. H.E. Mr. Peter Thomson, UN Special Envoy for the Ocean, called on international communities to strengthen the efforts toward implementation of SDG14.

The *Because the Ocean* Declaration, which expressed a strong intent to meet the target of sustainable development of the oceans and keep the sense of urgency to promote actions on the oceans, was signed by government representatives from England, Finland, Honduras, Romania, among others.

COP24 will be held in Katowice, Poland in 2018. As a host country of the G20 Summit in 2019, there are high expectations for Japan to demonstrate leadership by taking further initiatives on measures to mitigate climate change and its effect on the oceans.

(Miko Maekawa)

1 Building an International Network of Ocean Human Resources

Currently the level of carbon dioxide (CO₂), the most significant greenhouse gas that contributes to global warming, is growing at a rate of greater than 2 parts per million (ppm) per year¹³. Before the Industrial Revolution, the global average CO₂ was about 280 ppm. In 2016, it surpassed 400 ppm for the first time. CO₂ contributes to climate change, higher sea temperature, an increased level of CO₂ in seawater and alters the balance of marine ecosystems globally. The oceans are in a critical condition, with the decline and depletion of biological resources being significant contributing factors. Human activities have been draining finite ocean resources beyond their capacity to regenerate. There is concern that if no measures are taken, we will deplete these resources beyond the point of no return.

¹³ <http://www.nies.go.jp/whatsnew/2016/20161027/20161027.html>

The world currently faces new ocean problems due to a variety of closely interconnected elements on a global scale. These problems are too difficult to solve through conventional, highly specialized discussion and research, and require the coordinated efforts of all the countries of the world, including not only developed nations but also developing nations and island countries. The key to the solution is to foster intellectual capital and technical expertise to properly address the ocean issues in these countries.

Water connects the oceans across borders. There is a limit to the solutions that can be achieved through the efforts of a single country, organization, or sector. Solving new challenges requires professionals who can take a multidisciplinary and global perspective beyond existing frameworks, make a contribution of innovative ideas, take action, and involve a variety of people and organizations in the effort.

While there are several organizations engaging in such capacity building, from early on The Nippon Foundation recognized the importance of human resources development, and has been committed to developing human capacity in ocean management in cooperation with the world's leading research institutions and universities, national governments, NGOs, and international institutions over the years. This section will outline the "Human Capacity Building Programs for Global Ocean Issues" at the center of The Nippon Foundation's efforts to develop human resources in the ocean field, and report on the first Alumni Meeting held in October 2017.

(1) Human Capacity Building Programs for Global Ocean Issues

The 1980s were a turning point for maritime order. The United Nations Convention on the Law of the Sea (UNCLOS) replaced the centuries-old concept of "freedom of the seas" with the "common heritage of mankind," which requires all nations to share both the benefits from use of ocean resources beyond the limits

Coast Guard Leaders of the World Gather in Tokyo for Inaugural Summit

1

All coastal countries have dedicated agencies to protect and control their territorial waters. For Japan, it is the Japan Coast Guard. Collectively referred to here as Maritime Security Agencies, the name and responsibility of the agencies vary from country to country, where they are known as the Coast Guard, National Defense Force, Maritime Administration, etc.

Our lives depend on the blessings that the world's oceans provide us, such as seaborne trade, a large variety of marine products, minerals, and other materials. To facilitate this, Maritime Security Agencies have established rules among concerned parties to maintain maritime order. As an example, following the surge of incidents of piracy against ships in Asia, Japan proposed a multilateral agreement called the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP). Since enforcement of the agreement in 2006, its 20 signatory parties have established a cooperative framework around the Information Sharing Centre (ReCAAP-ISC) in Singapore, focusing on law enforcement activities including but not limited to arresting suspected pirates. In addition, the Japan Coast Guard initiated the North Pacific Coast Guard Agencies Forum in 2000 and the Heads of Asian Coast Guard Agencies Meeting (HACGAM) in 2004, with support from The Nippon Foundation. The Japan Coast Guard hosts these forums annually, playing an active role in strengthening regional cooperation.

However, in recent years, with climate change bringing more frequent and larger scale natural disasters as well as the rapidly changing social environment that includes a rise in terrorism and extremism, we are facing new challenges beyond the scope of existing bilateral and regional agreements. In response, the Japan Coast Guard and The Nippon Foundation co-hosted the world's first Coast Guard Global Summit (CGGS) on September 14, 2017, providing an opportunity for leaders of 38 Maritime Security Agencies from around the world to gather for the first time. Top officials of Maritime Security Agencies from 34 countries and one region, and representatives from three international organizations, including ReCAAP-ISC, took part in the half-day event held at The Westin Tokyo, where delegates from 10 countries presented illustrative case studies.

The Summit addressed three major topics: Maritime Safety and Environmental Protection, Maritime Security, and Capacity Building. On Maritime Safety and Environmental Protection, delegates discussed a framework of cooperation for search-and-rescue operations and the use of advanced technology such as satellite imaging to detect ocean pollution. On Maritime Security, delegates presented examples of multilateral cooperation to address maritime crimes such as piracy in South East Asia and offshore Somalia and to police fishing activities on the high sea. Finally, on Capacity Building, delegates reported on the present status of international training and seminars. It was proposed that for officers of Maritime Security Agencies to address global issues, coast guard agencies

worldwide should establish inter-regional cooperation beyond existing regional frameworks.

Promotion of Capacity Building beyond National Boundaries

In 2015, the Japan Coast Guard Academy, the National Graduate Institute for Policy Studies, The Nippon Foundation, and the Japan International Cooperation Agency (JICA) together established the Maritime Safety and Security Policy Program. In the program, officer candidates of Maritime Security Agencies from Asian countries, including Japan, live and study together to complete a one-year master's degree program designed to develop their professional expertise. In 2017, five officer candidates completed the course curriculum, which aims at promoting and enhancing "rule-based maritime order rather than power."

The Chairman's Summary of the world's first CGGS placed a strong emphasis on capacity building, outlining a future policy of sharing best practices and experiences on emergency response, crime control, and human resource development. The officials also discussed the need "to consider establishment of a system for human resource development and the best forms of inter-regional and international cooperation" to more broadly establish principles of maritime security.

To ensure maritime safety and security as well as to preserve a healthy marine environment in an era beset by an increasing number of large-scale problems, it is essential for Maritime Security Agencies of the world to cooperate closely based on common principles. The leaders of these 40 organizations agreed upon the significant role human resources should play to support this effort. At the meeting, it was decided to organize meetings for working level officials to discuss objectives, rules of governance, and steering of the meetings to further develop this new cooperative framework. It is expected that this venue for dialogue and cooperation will continue to expand, as each region of the world brings together its knowledge and technology for solving the problems of the world's oceans.



Group photo of officials and agency heads from participating countries at the State Guest House, Akasaka Palace.

Front center: Prime Minister Shinzo Abe; to the right: Yohei Sasakawa, Chairman of The Nippon Foundation; to the left: Minister Keiichi Ishii of the Ministry of Land, Infrastructure, Transport and Tourism

(Source: Japan Coast Guard)

Table Human Capacity Building Programs for Global Ocean Issues

No.	Organization	Start Year	Number of Fellows
1	United Nations Division for Ocean Affairs and the Law of the Sea (DOALOS)	2003	144
2	General Bathymetric Chart of the Oceans (GEBCO) Guiding Committee	2003	78
3	International Association of Maritime Universities (IAMU)	1999	—
4	International Hydrographic Organization (IHO)	2008	57
5	International Maritime Law Institute (IMLI)	2003	152
6	International Ocean Governance Network (IOGN)	2001 (ended in 2010)	13
7	International Tribunal for the Law of the Sea (ITLOS)	2006	63
8	Partnership for Observation of the Global Oceans (POGO)	2003	80
9	Seafarers International Research Centre (SIRC), Cardiff University	2003	37
10	University of British Columbia (UBC)	2010	28
11	World Maritime University (WMU)	1988	594
			1,246

of national jurisdiction and the responsibility for managing them. However, there was a serious lack of experts who could properly manage the oceans, especially in developing countries.

Since then, The Nippon Foundation, in cooperation with educational institutions including the World Maritime University (WMU) and the International Maritime Law Institute (IMLI), has been engaged in human capacity building programs to foster ocean experts, mainly in developing countries, who are capable of addressing the issues of the oceans from a comprehensive and multi-disciplinary perspective.

The above table shows the partner organizations, project descriptions, and the number of fellows who have received grants through ten Nippon Foundation-funded Human Capacity Building Programs as of 2017. (Project No. 6, IONG concluded in 2010.) At this time, 1,236 alumni of the programs from 140 countries are actively addressing national and global ocean issues.

(2) Towards the Creation of a Network

As a part of the Human Capacity Building Programs for Global Ocean Issues, each program actively built its alumni network. For example, the secretariat of the “Friends of WMU, Japan” publishes a newsletter four times a year to galvanize networking activities among WMU Fellows.



Figure Participants of an Alumni Meeting held in Georgia in October 2017

In order to continue to expand our Human Capacity Building Programs for Global Ocean Issues and foster individuals with the comprehensive vision needed to address increasingly complex ocean issues, it is more important than ever for the fellows active all over the world to have a network where people can organically connect beyond the boundaries of organizations and disciplines.

In October 2017, such an alumni meeting was held in Tbilisi, the capital of Georgia, hosted by the Georgian government and co-hosted and sponsored by The Nippon Foundation. Initiated by Ms. Tamara Ioseliani, a Ministry of Economy and Sustainable Development of Georgia official, who is a former DOALOS¹⁴ Fellow, the first-of-its-kind conference assembled thirty alumni of four of the Human Capacity Building Programs for Global Ocean Issues¹⁵ listed in the previous table who gathered from 10 countries¹⁶ in the Black and Caspian Sea region.

The conference was held for two days on October 23 and 24. Giorgi Gakharia, Minister of Economy and Sustainable Development of Georgia, and The Nippon Foundation Chairman Yohei Sasakawa each delivered opening remarks. Discussion focused on how the alumni could engage in the issues of this region, such as the ocean environment and setting of maritime borders, and how they could contribute to the promotion of the United Nations' Sustainable Development Goal 14 (SDG14).

A regional alumni network was formed to continue mutual exchanges of information and discussions. While political disputes do exist among the 10 countries of the participants, it is the virtue of this "For the Sake of the Ocean" initiative that the alumni were willing to transcend the boundary of nations and organizations to discuss solutions to ocean problems. It is hoped that the network will continue to expand and the outside-the-box ideas generated from it will result in the creation of frameworks for specific projects in the future.

(Takashi Arikawa)

¹⁴ The Division for Ocean Affairs and the Law of the Sea

¹⁵ DOALOS, IMLI, ITOLOS, WMU

¹⁶ Georgia, Azerbaijan, Turkmenistan, Iran, Kazakhstan, Russia, Ukraine, Romania, Bulgaria, Turkey

The ocean covers more than 70% of the Earth and its depth is mostly deduced from satellite measurements of the ocean's surface. Currently only about 15% of the bathymetry of the world's oceans are mapped based on actual measurement. While we can generate detailed topographical maps of Mars, where no human being has ever been, we do not know how our own planet would look without water.

Against this backdrop, Yohei Sasakawa, Chairman of The Nippon Foundation, announced the launch of the "Seabed 2030" project at the United Nations Ocean Conference in June 2017. A joint project with the General Bathymetric Chart of the Oceans (GEBCO), an international group of experts working on providing bathymetric data sets and products of the world's oceans, Seabed 2030 aims to produce the definitive map of the world ocean floor by 2030.

Accurate bathymetric mapping supports navigation safety, sustainable fishery management, and prediction of natural disasters, such as tsunami and storm surges. It is also necessary for seabed resource exploration and exploitation as well as for infrastructure development, such as cable and pipeline routing. However, it is not easy to map the seafloor at depths of up to 10,000 meters. Highly specialized equipment is required for measurements on board or underwater and for analyzing collected data on land, in addition to the need for skilled personnel to operate such equipment.

The Nippon Foundation and GEBCO have been collaborating with research institutions and corporate enterprises, both domestic and international. For example, they have undertaken efforts on human resource development since 2004, through a postgraduate training program on ocean bathymetry that has helped 78 students from 36 countries to develop their skills in this field. In June 2016, The Nippon Foundation and GEBCO held the "Forum for Future Ocean Floor Mapping," which saw the participation of government officials, representatives from media and organizations such as Google, NASA, and the International Union of Conservation of Nature (IUCN), along with many alumni of the NF-GEBCO training program.

In the Seabed 2030 project, the world's oceans are divided into four regions: the North Pacific & Arctic Ocean; the Atlantic and Indian Ocean; the South and West Pacific Ocean; and the Southern Ocean. The

data collected at each Regional Data Assembly and Coordination Center is transmitted to the Global Center, where a high definition topology map is generated, and big data from depth sounders on board various existing vessels is also incorporated. When completed, there are plans to make the bathymetric maps available online.

Competitions for Seafloor Exploration Technology Development Gain Steam

Just as Seabed 2030 is about to kick into gear, competitions aiming at technology development for seafloor exploration are also gaining steam. In 2017, the GEBCO-NF Alumni Team (an international team of alumni from the aforementioned training program) and Team KUROSHIO (an "all-Japan" team comprised of members of the Japan Agency for Marine-Earth Science and Technology [JAMSTEC] and private companies) were accepted as entrants for the \$7million Shell Ocean Discovery XPRIZE, a global competition sponsored by Shell, NOAA, and other organizations. In addition, The Nippon Foundation launched the DeSET project in Japan with Leave a Nest Co., Ltd. in June 2017, to support engineers developing technology for wide-area high-speed seafloor mapping. The grand plan to unlock the mystery of ocean floor topography through international cooperation is becoming an incubator for new ocean industries.

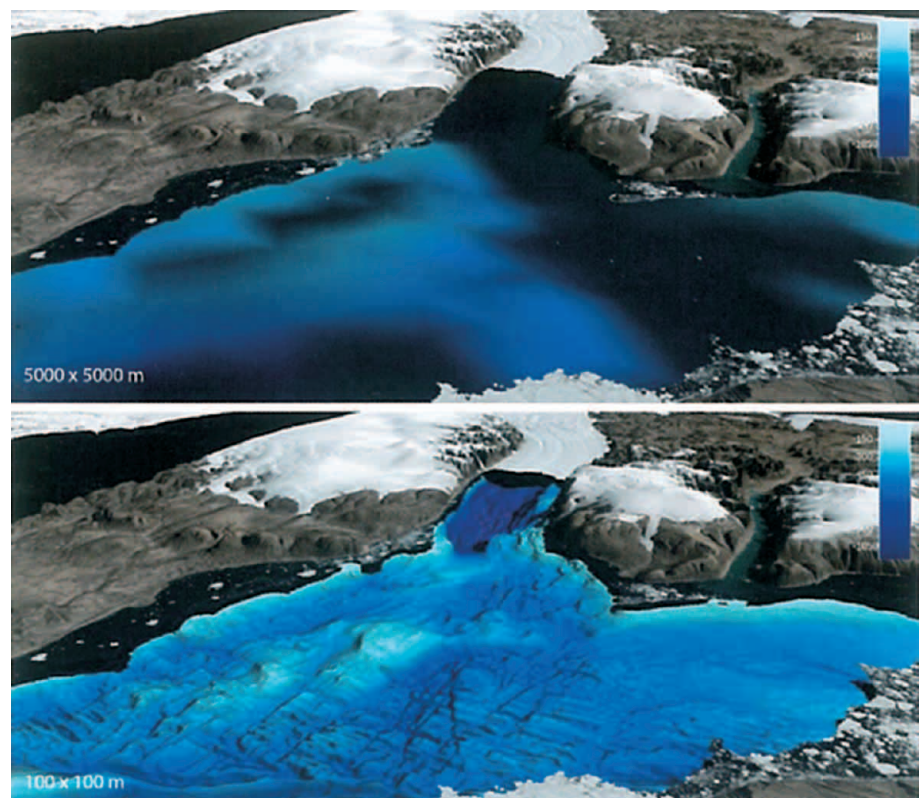


Figure The upper image shows the conventional low-resolution (5 x 5 km grid) bathymetry based on deduction. The lower image shows the high-resolution (100 x 100m grid) bathymetry the Seabed 2030 project is aiming for.

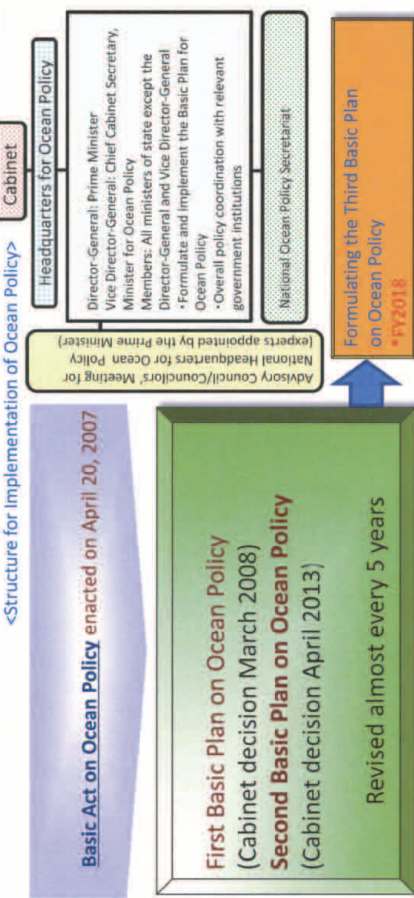
(Source : https://seabed2030.gebco.net/documents/seabed2030_brochure.pdf)

Reference Materials



The Third Basic Plan on Ocean Policy

(Provisional Translation)



The measures on the ocean around Japan are promoted in a comprehensive and prudent manner based on the Basic Act on Ocean Policy and the Basic Plan on Ocean Policy. The Second Basic Plan on Ocean Policy was formulated in April 2013 and covered five years to April 2018.

* The Basic Act on Ocean Policy states, "the Government shall review the Basic Plan on Ocean Policy almost every five years, and shall make necessary changes."

On May 15, 2018, the Third Basic Plan on Ocean Policy was approved by the Meeting of the Headquarters for Ocean Policy, followed by Cabinet decision.

The main points of the Third Basic Plan are outlined below.

Third Basic Plan: Points

(1) Introduction: Evaluation and Current Situation Awareness

Recap of progress from the enactment of the Basic Act on Ocean Policy until today and current situation

(2) Chapter 1

General Remarks (philosophy for ocean policy, policy direction, basic policy for measures)

"The challenge toward a new oceanic state" is positioned as the policy direction for the Basic Plan on Ocean Policy to aim for the goal of the Basic Act on Ocean Policy, which is to realize a new oceanic state.

The following is a concise summary of the policy direction in point (1) above

- (a) Toward open and stable seas. Protect the nation and its citizens.
- (b) Use seas to make the nation prosper. Pass on abundant sea to posterity.
- (c) Challenge unknown seas. Improve technology and enhance awareness of sea.
- (d) Take the lead to realize peace. Create world standards for seas.
- (e) Familiarize people with seas. Develop human resources with knowledge of ocean

(3) Based on a broad understanding of ocean policy from the perspective of maritime security, the plan clearly states that the whole government shall come together to promote **Comprehensive Maritime Security**, which cover not only the core maritime security measures, but also the ocean measures that could contribute to maritime security.

(4) Main measures other than "Comprehensive Maritime Security," based on the change of the situation in ocean:

- (a) Promotion of industrial use of the ocean
- (b) Maintain and protect the maritime environment
- (c) Improve scientific knowledge
- (d) Promote Arctic policy
- (e) International collaboration and cooperation
- (f) Develop human resources with knowledge of ocean and to advance citizens' understanding

This is the first time for the plan to state the policy for the Arctic as one of the main measures.

(3) Chapter 2: Detailed Exposition (Specific Measures)

- (1) List for measures approx. 370 items
- (2) To secure the effective implementation of the ocean measures, the plan clearly states the name of the implementing ministry or agency for each measure.
- (3) Strengthening the capacity of Maritime Domain Awareness (MDA) is treated as an independent item in this Chapter.

(4) Chapter 3: Required Matters for Implementation

- (1) The Headquarters for Ocean Policy will promote ocean policies by carrying out a control tower function for the government, together with the National Ocean Policy Secretariat.
- (2) Describes the PDCA cycle and process management using indicators to gain a panoramic and quantitative understanding for the purpose of better understanding and evaluating the progress of each measure as well as securing the systematic and comprehensive implementation.

Outline of the Third Basic Plan on Ocean Policy (1)

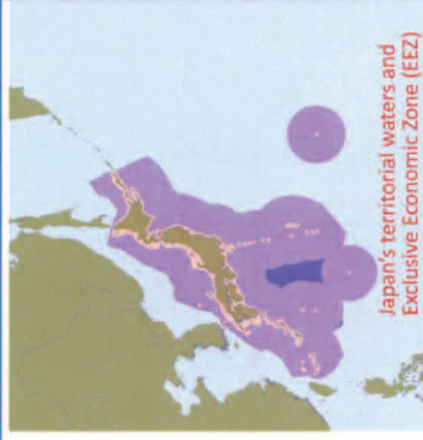
□ Evaluation of Past Ocean Policy and Current Situation

1. Recap of 10 years since enactment of the Basic Act on Ocean Policy

- Implement measures listed in the first and second plans approved by the Cabinet based on the Basic Act on Ocean Policy
 - The enactment of related acts and the decisions by the Headquarters for Ocean Policy in the fields that cut across ministries and agencies.
- Specific examples: the Anti-Piracy Act (2009), the Low-Tide Line Preservation Act (2010), conferring names on remote islands (2014), state ownership of ownerless remote islands (2017), Marine Renewable Energy Act approved by Cabinet (2018)
- Need to reinforce process management to promote the steady implementation, *inter alia*, through the progress evaluation for the measures.
 - Room for improvements in the ability to communicate a broader message about ocean policy to the citizen

2. Current situation awareness based on recent circumstances

- Depopulation, dwindling birthrate and aging population / globalization / accelerating technical innovation in the IT field.
- Having promoted the steady improvement of the system responding to the changing circumstances concerning maritime security situation.
- Having promoted initiatives relating to marine resource development, according to changing circumstances concerning ocean industries.
- * Specific examples: Intrusion into territorial waters by foreign official vessels, illegal operations by foreign fishing vessels as well as their drift and drift ashore, surveys by foreign research vessels without consent, ballistic missiles fired inside Japan's EEZ, unilateral attempts to change the status-quo etc.



□ What Ocean Policy should be

1. Basic Principles and Policy Direction in the Next 10 Years

• Basic Principles

Based on the **Basic Principles established in the Basic Act on Ocean Policy** (Harmonization of Development and Use of the Ocean with the Conservation of Marine Environment, Securing the Safety at Sea, Improvement of Scientific Knowledge of Ocean, Sound Development of Ocean Industries, Comprehensive Management of Ocean, and International Partnership with regard to Ocean), the policy will be advanced while recognizing the following matters:

- (1) Actively create favorable conditions and environment for Japan
- (2) Utilize the wealth and potential of ocean to sustain national power
- (3) Develop a win-win relationship between the sustainable development and the use of ocean by sound marine industries on one hand, and environmental protection on the other
- (4) Improve world's most advanced and innovative R&D, surveys, and observations of the oceans
- (5) Enhance understanding of ocean among citizens

• Policy Direction

<<Challenge toward a New Oceanic State>>

- (a) Toward open and stable seas. Protect the nation and its citizens.
- (b) Use seas to make the nation prosper. Pass on abundant seas to posterity.
- (c) Challenge unknown seas. Improve technology and enhance awareness of seas.
- (d) Take the lead to realize peace. Create world standards for seas.
- (e) Familiarize people with sea. Develop human resources with knowledge of ocean.

Outline of the Third Basic Plan on Ocean Policy (2)

□ What Ocean Policy should be

2. Basic Policy for Measures Regarding Ocean

2-1 Basic Policy for "Comprehensive Maritime Security"

- Broad understanding of ocean policy across several fields based on the situation of maritime security
- Categorize the broad range of measures as measures concerning "maritime security in this basic plan" (hereinafter referred as "maritime security") include maritime security measures stipulated in the National Security Strategy. In addition, categorize measures that could contribute to maritime security as measures that form the foundation which contribute to reinforcement of maritime security. "**Comprehensive Maritime Security**" is consisted of two types of measures above. The government will make efforts to implement these measures in the whole of government
- Implement "Free and Open Indo-Pacific Strategy" in coordination and cooperation with foreign countries
- In addition to reinforcing capability of Japan Self-Defense Forces(JSDF) and Japan Coast Guard (JCG), prioritize the establishment of structures for Maritime Domain Awareness (MDA) and preservation and management of remote islands
- MDA is an effort to effectively collect various maritime information from vessels of JSDF, patrol vessels/craft of the Japan Coast Guard (JCG), aircrafts, satellites, and research vessels, then effectively aggregate and share such information, for use in measures related to ocean. Strengthening MDA capability is underlined
- Develop legal structures concerning the zonal management of EEZ, taking into account the previous discussions after the publication of the Second Basic Plan

Comprehensive Maritime Security

(1) Maritime Security

Defense, law enforcement, foreign policy, safety measures traffic and responses to natural disasters originating in ocean

(2) Foundation for contributing to reinforcement of maritime security

(a) Measures forming bases for maritime security

Establish structures for Maritime Domain Awareness (MDA).
Preserve and manage remote islands. Ocean surveys, ocean observations
Science and technology, R&D. HR development and raise awareness

(b) Measures supporting maritime security

Economic security
Protect marine environment etc.



Strengthening of the Coast Guard System

2-2 Basic Policy for other main Measures

(1) Promotion of industrial use of the ocean

- Integrated implementation in the sense of securing economic security, delivering economic growth, and securing marine rights and interests
- Develop energy resources derived from ocean such as methane hydrate, seafloor polymetallic sulphides, rare-earth elements and yttrium-rich mud
- Speed up improvements to systems including rules on the use of marine zones for offshore wind power generation
- Strengthen international competitiveness of the ocean industries by improving productivity and adding value to their services
- Use the outcome of SIP Next Generation Technology for Ocean Resources Exploration
- Support business-to-business exchanges through the Technology Platform for Marine Resource Development
- Open up markets, introduce new energy in the ocean industries such as expanding ports of call for cruise ships, or university-launched ventures
- Secure stable maritime transportation for ocean-going and coastal shipping (apply tonnage tax, implement policies in line with "the plan for the future of coastal shipping")
- Strengthen the function of hubs for marine transportation (promote the international containers/bulk policy)
- Appropriate management of fishery resources (sweeping expansion of resource surveys, strengthen ability to control fishing)
- Grow the commercial fishing industry (raise earnings by implementing "Hama Plan", reform distribution structures, promote exports of marine products, strengthen international competitiveness by switching to highly profitable operations, train and secure human resources)



Methane hydrate development



Establish rules on use of maritime zones



Improve accuracy of resource evaluation

Outline of the Third Basic Plan on Ocean Policy (3)

□ What Ocean Policy should be

(2) Maintain and conserve marine environment

- Use international frameworks such as Sustainable Development Goals (SDGs) to implement marine environment protection
- (Establish appropriate Marine Protected Areas, reduce marine debris including microplastics in the ocean, conserve coral reefs etc.)
- Use “Sato-Umi” experience of maintaining high productivity and biodiversity to implement comprehensive management of coastal area
- Implement comprehensive initiatives aimed at realizing a clean and abundant sea in the Seto Inland Sea, accelerate surveys and research

(3) Improve scientific knowledge

- Promote R&D of marine science and technology
- Maintain and strengthen ocean surveys, observations, monitoring
- Link ocean and space policies
- Promote R&D aimed at realizing Society 5.0

(Pioneering technology development based on the SIP Next-generation Technology for Ocean Resources Exploration)

(4) Promote Arctic policy

- Prioritize measures related to R&D, international cooperation and sustainable use, considering moves in the Japanese private sector toward using the Northeast Passage in Arctic sea route (e.g. the Yamal LNG Project) and escalating initiatives by foreign countries
- Japan has strength in the field of observations and R&D. In this regard, establish international collaboration hubs in countries in the Arctic region (e.g. Ny-Ålesund Research Station in Norway) through the Arctic Challenge for Sustainability (ArCS), and develop and operate Autonomous Underwater Vehicles (AUV) that facilitate autonomous navigation and observation below the sea ice. Also, study the construction of the Arctic research vessel with the capacity of ice breaker.

(5) International collaboration and cooperation

- Take initiatives to broaden “Rule of Law” and “Policies based on Scientific Knowledge” as universal principles in the field of ocean policy for the world and, through these initiatives, realize Japan’s national interest

(6) Develop human resources with knowledge of ocean and advance citizens’ understanding

- Implement maritime education (strengthen initiatives under “Nippon Manabi no Umi Platform,” and aim to implement education about ocean in all municipalities by 2025)
- Train and secure specialist HR to support the oceanic state (strengthen initiatives of “The Nippon Foundation Ocean Innovation Consortium,” which aiming to educate technical experts for ocean development)
- Enhance the citizen’s understanding of Japan as an outward-looking oceanic nation and use and substantiate “Ocean Day” holiday



REF: Specific Measures in the Third Basic Plan on Ocean Policy

Table of Contents

1. Maritime Security

- (1) Secure national interests in Japan's territorial waters and beyond¹
- (2) Secure stable use of Japan's important sea line of communications (SLOC)
- (3) Reinforce international maritime order

2. Promote industrial use of the ocean

- (1) Promote development and use of marine energy and mineral resources
- (2) Promote marine industries and strengthen their international competitiveness
- (3) Secure maritime transport
- (4) Appropriately manage fishery resources, and promote the fishery as a rising industry

3. Maintain and conserve marine environment

- (1) Conserve marine environment
- (2) Comprehensive management of coastal areas

4. Strengthen capacity for Maritime Domain Awareness (MDA)

- (1) Structures for maritime information collection
- (2) Structures for maritime information gathering and sharing
- (3) International collaboration and cooperation

5. Promote research and development as to ocean surveys and marine science & technology

- (1) Promote ocean surveys
- (2) Promote to research and develop marine science and technology

¹ Including internal waters, territorial waters, contiguous zone, exclusive economic zone and continental shelves

6. Preserve remote islands and develop Exclusive Economic Zones (EEZ)

- (1) Preserve remote islands etc.
- (2) Promote to develop EEZ

7. Promote Arctic policy

- (1) Research and development
- (2) International cooperation
- (3) Sustainable use

8. Ensure international collaboration and promote international cooperation

- (1) Formulate and develop maritime order
- (2) International collaboration on the ocean
- (3) International cooperation on the ocean

9. Develop human resources and promote public understanding

- (1) Foster and secure specialists to support the oceanic state
- (2) Promote to educate children and young people about the ocean
- (3) Promote public understanding on the ocean

REF: Specific Measures in the Third Basic Plan on Ocean Policy (1)

<h2>1. Maritime Security</h2> <p>(1) Secure national interests in Japan's territorial waters and beyond</p> <ol style="list-style-type: none"> Steadily build up defense capability based on National Defense Program Guideline and Mid-Term Defense Program Strengthen maritime law enforcement capabilities based on "Policy on the Strengthening of the Coast Guard System" Establish "Fisheries Enforcement Headquarters" to strengthen the ability to control the fishery Provide means for emergency information sharing to ships at sea in case of ballistic missile launches By continuously conducting exercises to deal with spy boats (unidentified vessels), strengthen coordination between Ministry of Defense (MOD)/JSDF and JCG to facilitate seamless responses to unexpected emergency situations. Respond appropriately to unauthorized marine surveys by foreign research vessels (e.g. suspension request by patrol vessels and promotes through diplomatic channels) Appropriately surveillance and monitor drifting/drifted ashore boats. Streamline processing of drifting wooden boats thought to be registered in North Korea Increase diplomatic efforts to secure sovereign and maritime interests amid pending delimitation with neighboring countries Strive to further strengthen Japan-U.S. coordination in broad areas of maritime security aspects and to strengthen coordination with friendly powers Promote and introduction and research of labor-saving or unmanned equipment, and initiatives to gather information via satellites to improve ocean surveillance systems. Improve information sharing systems between MOD/JSDF, and JCG Strengthen surveillance and monitoring and vigilance at important remote islands and surrounding ocean areas Strengthen information sharing systems, and implement measures to prevent marine accidents to secure marine traffic safety Strengthen systems for maritime transport of emergency relief items, for damage control, mitigation measures, and improve systems for appropriate responses to large-scale disasters as ways of dealing with natural disasters originating in the ocean <p>(2) Secure stable use of Japan's important SLOC</p> <ol style="list-style-type: none"> Build relationships of trust and cooperation with coastal states along Japan's SLOC through regular exchanges such as capacity-building assistance to those countries, seconding personnel to international organizations, participating in international cooperation efforts such as anti-piracy operations, and taking every opportunity for port visits by Japan Maritime Self Defense Force (JMSDF) vessels Coordinate with related countries and promote cooperation that contributes to capacity building for information collection of SLOC coastal states Promote cooperation that contributes to capacity-building of the ASEAN states as a whole Take the initiative of "The Head of Asian Coast Guard Agencies Meeting" <p>(3) Strengthen international maritime order</p> <ol style="list-style-type: none"> Coordinate with the related countries involved by using international frameworks such as the G7, the East Asia Summit (EAS), the ASEAN Regional Forum (ARF), and the ASEAN Defense Ministers' Meeting (ADMM) Plus to strengthen diplomatic initiatives aimed at the rule of law Implement initiatives to increase Japanese staff and to secure executive posts, including heads of international maritime related organizations with the objective of active participation in formulating the international maritime order Strengthen effective and strategic communication, by maintaining close contacts among the relevant ministries and agencies to convey consistent government messages relating to Japan's maritime security policy Continue diplomatic efforts, including strengthening of information transmission, to broaden support for Japan's position and to correct understanding of the name "Sea of Japan" Promote sharing of basic common values through multilateral frameworks such as "The Coast Guard Global Summit," and strengthen cooperation related to maritime security with the relevant defense authorities in each country 	<h2>2. Promote industrial use of the ocean</h2> <p>(1) Promote development and use of marine energy and mineral resources</p> <ol style="list-style-type: none"> Develop technologies for utilizing methane hydrate with the aim of launching commercialization projects led by private-sector corporations by the mid-2020s The long-term outlook is to revise and clarify the Plan for the Development of Marine Energy and Mineral Resources Continue research on recovery and production technologies for shallow methane hydrate Expedite geophysical exploration (roughly 50,000 km²/10 years) for oil and natural gas Carry out projects including technical development for seafloor polymetallic sulfides for the purpose of launching a project aiming for commercialization with the participation of private-sector corporations after the mid-2020s Relating to seafloor polymetallic sulfide deposits, proceed investigation of embedded resources by utilizing SIP Next-generation Technology for Marine Resources Exploration Promote initiatives to develop and demonstrate marine resource technologies for use with marine and mineral resources at depths of more than 2000 meters including rare earth muds and other embedded marine resources in SIP Next-generation Technology for Marine Resources Exploration Establish necessary legislative system for promoting offshore wind power generation in ocean areas Conduct experimental research of construction technologies, and support wind condition survey and wind farm designs to promote offshore wind power generation Further improvement of the environmental information database Conduct experimental research initiatives involving wave power, tidal power, ocean current power, and other marine power generation, and cooperate with remote island promotion measures <p>(2) Promote marine industries and strengthen their international competitiveness</p> <ol style="list-style-type: none"> Strong implementation of i-Shipping and J-Ocean with the aim of expanding shipbuilding exports, optimizing shipping, realizing Maritime Autonomous Surface Ships (MASS), and acquiring markets for marine development Strengthen project discovery systems to advance participation in planning operations at overseas ports in order to upgrade ports which are positioned as the marine transport hubs Implement i-Construction and AI Terminals with the aim of improving on-site productivity at port construction sites Complete SIP Next-generation Technology for Marine Resources Exploration technology transfers to the private sector, set up the private sector to be able to receive orders for domestic resource exploration projects. Support coordination with other types of industry under the Technology Platform for Ocean Resource Development Improve the environment of cruise ships reception and 5 million inbound passengers visiting Japan in 2020. Support public relation regarding ocean leisure to expand the market for the marine industry Develop and demonstrate technologies for carbon dioxide capture and storage (CCS) <p>(3) Secure maritime transport</p> <ol style="list-style-type: none"> Strengthen the international competitiveness of Japan's merchant fleet and secure maritime transport systems centered on Japanese ships and Japanese crews by implementing a tonnage tax system to secure stable international maritime transport Strengthen the business foundation for coastal shipping operators, develop and popularize advanced ship, secure and foster seafarers stably and effectively, in line with "The Plan for the Future of Coastal Shipping," and maintain the cabotage system Set up LNG bunkering hubs in Asia strategically and promote international container/bulk policy with integrated hardware and software to strengthen the function of hubs for maritime transport
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REF: Specific Measures in the Third Basic Plan on Ocean Policy (2)

2. Promote industrial use of the ocean

(4) Appropriately manage fishery resources, and promote the fishery as a rising industry

- Drastically expand resource survey and introduce the Individual Quota (IQ) system in the offshore fishery for its actual operational conditions and resource characteristics as possible toward appropriate managements of fishery resources
- Aiming to resume commercial whaling at an early stage, conduct consultations on the state of the international Whaling Commission with the countries concerned, and conduct scientific whaling research certainly
- Aim to strengthen international competitiveness, prioritizing management policies for business entities engaged with sustainable and highly profitable operational structures and the supply of marine products adapted to diversifying customer needs
- Aim to raise income from fishing by at least 10% over five years in every fishing community by implementing "Hama Plan"
- Implement initiatives to streamline market entry, coordinate between fishing communities and corporations with the technology, knowhow, capital, and human resources required by fishery operators
- Improve high-speed Internet and high capacity data communication environment on fishing boats
- Comprehensively examine transactions and distribution of marine products including proper traceability, enhanced quality control, utilizing ICT and so on
- Comprehensive improvements of fishing harbors, fishing grounds, and fishing communities to generate prosperity in fishing villages, strengthen disaster responses, improve fishing grounds, and upgrade functions of fishing harbors
- Aside from the supply of marine products, demonstrate versatile functions of the fishing industry and fishing villages such as protection of the natural environment, monitoring of national borders, sea rescue, and providing settings for convalescence, exchanges, and education

3. Maintain and protect marine environment

(1) Conserve marine environment

- Implement adaptive management based on the verification of management effectiveness and outcomes, and establish marine protected areas with the goal of appropriate conservation and management of 10% of jurisdictional waters by 2020
- Conserve and regenerate the fragile ecosystems formed in coral reefs, seaweed beds etc.
- Actively participate in consultations at intergovernmental conferences concerned with formulating new agreements aimed at the conservation and sustainable use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ)
- Tackle marine adaptation strategies, continue/upgrade surveys to form an accurate understanding of climate change and its impact
- Implement energy conservation in harbors, optimize operations by using IoT, verify energy conservation technologies on ships to reduce greenhouse gases
- With a view to eliminating marine debris including microplastics, promote monitoring, collecting, and preventing marine debris, and international cooperation comprehensively
- Appropriately implement the MARPOL Convention by approving ballast water management system, securing waste oil treatment facilities, regulating discharge of noxious liquid substances and other waste material from ships
- Monitor sea water, seabed, and marine life for radiation based on the Comprehensive Radiation Monitoring Plan for the TEPCO Fukushima Daiichi Nuclear Power Station
- Examine the nature of data collection and evaluation required when evaluating the environmental impact of future offshore and deep-sea marine development and usage

(2) Comprehensive management of coastal regions

- Involve people in the comprehensive management of coastal areas, adopting the idea of "Sato-Umi" to create a clean and abundant ocean, to respond to natural disasters, to protect biodiversity, and to develop steps to counter ocean waste
- To reduce the flow of sediment from coastal areas to the seas, implement comprehensive sediment management such as measures to control sedimentation and to adjust outflow sediment by means of erosion control
- In addition to disaster protection, implement preservation of harmonized coastal spaces including initiatives to sustain the environment and promote use by local residents
- To eliminate contamination flowing from coastal regions, improve sewage treatment facilities and introduce sophisticated treatments to ocean areas where it is necessary to reduce nutritive salts
- From the perspective of a clean and abundant Setonaikai Inland Sea, combine sediment improvement with the protection and regeneration of seaweed beds and tidal flats, implement comprehensive initiatives coordinated by diverse protagonists in the area, and accelerate research on the effects of a reduction in nutritive salts on fishery resources

4. Strengthen capacity for Maritime Domain Awareness (MDA)

(1) Structures for maritime information collection

- Strengthen MDA capability through enhancing structures for information collection through enhancing efficient operations and steady increases in JMSDF vessels, patrol vessels/craft of JCG, survey ships, aircraft, the Information Gathering Satellites, and coastal radar, considering the use of all types of satellites, and coordinating with allies and friends
- Research and examine further use and application of satellite information in the maritime domain
- Develop automatic observation technologies using autonomous underwater vehicles (AUV) or sensors for ocean surveys, and examine collect and share information on ship movements by means of automatic-identification systems (AIS)

(2) Structures for information gathering and sharing information

- Develop MDA Situational Indication Linkages (MSIL) to collect marine-related information, and also develop secured information sharing systems between MOD/JSDF, and JCG
- Integrate and standardize data policies, maintain information quality from the perspective of user convenience
- Integrate observation data obtained by various methods including satellite, ships, anchored or floating buoys
- Continue to manage the Marine Information Clearing House and the Marine Cadastre (Kaiyo Daicho)

(3) International collaboration and cooperation

- Collect maritime related information acquired by other countries and international organizations through various route
- Build cooperative frameworks with allies and friends and strengthen the MDA system through coordination with related on MDA each countries, and cooperation that contributes to better understanding of the marine situation in the countries along the SLOC on maritime situation
- Develop multilingual versions of MSIL so as to collaborate with the international community

REF: Specific Measures in the Third Basic Plan on Ocean Policy (3)

5. Promote research and development as to ocean surveys and marine science & technology

(1) Promote ocean surveys

- a. Strengthen marine survey systems based on "Policy on Strengthening of the Coast Guard System" from the perspective of protecting maritime interests through ocean surveys
- b. Improve automated observation technologies contributing to effective observation and appropriate operation of survey ships undertaking marine observation
- c. Build integrated observation networks that combine observations by drifting floats, moored systems, ships, and underwater/seabed probes
- d. Continue surveys of submarine topography, submarine geology, crustal structures, territorial sea baselines, ocean currents and so on, to improve the basic information needed to comprehensively manage oceans and to secure maritime interests
- e. Implement high-precision and high-density observations by maritime survey ships participating in international oceanographic observation programs running by the World Meteorological Organization (WMO), IOC-UNESCO etc.
- f. Continue monitoring for radioactive material in ocean to understand the impact of the Great East Japan Earthquake
- g. Strengthen and improve seafloor geodetic observation to collect basic information contributing to elucidation of subduction zone giant earthquake in the plate boundaries and earthquake/tsunami prediction
- h. Implement meteorological and hydrological observations to secure the safety of ships and the coastline

(2) Promote to research and develop marine science and technology

- a. Collect and develop basic information to evaluate climate change risk. Implement R&D to develop high-precision prognostic information
- b. Develop wide-area exploration systems using research ships to survey wide areas of the seabed, manned submersible research vessels, autonomous underwater vehicles, and cutting-edge sensor technologies
- c. With the FY2018 launch of SIP Next-generation Technology for Ocean Resources Exploration, further strengthen and develop accumulated technologies for marine resources exploration, production technologies, and promote initiatives to develop and verify the technologies at over 2000 m depth
- d. Implement R&D to comprehensively understand the structure and functions of the marine ecosystem as well as the changing situation
- e. Operate submarine observation networks that facilitate real time observation of earthquakes and tsunami (S-Net and DONET)
- f. Research upgrades to marine environment information, tsunami warnings, prognostic information including high waves, high tides etc.
- g. Strengthen initiatives to implement original and diverse basic research on a broad and continuous basis
- h. Aim to formulate and promote understanding of whole earth dynamics, and to advance the Integrated Ocean Drilling Program (IODP) by using survey ship "Chikyu" or other ships to carry out ocean drilling
- i. Improve quality and grades of human resources with expertise and ability to take a broad view of marine science technologies
- j. Aim for a curriculum that promotes interdisciplinary education and research at universities and graduate schools, promote hands-on internships, and implement pragmatic initiatives such as continuing education for workers
- k. Operate systems to efficiently probe unknown deep-sea territory
- l. Develop and operate research platforms including AUV, Remotely Operated Vehicles (ROV), manned vehicles, experimental tanks etc.
- m. Research and develop high-speed communication technologies that use satellites to transmit large volumes of ocean data
- n. Implement cutting-edge integrated information science with the aim of strengthening the basic technologies that support the Super Smart Society including Big Data, AI etc.

6. Preserve remote islands and develop EEZ

(1) Preserve remote islands etc. (Preserve remote border islands)

- a. Conduct surveys to understand the situation in low-water line preservation areas based on patrolling, satellite images, and restricting activities within the low-water line preservation areas
- b. Continuously understand the situation of remote border island shorelines by various means including satellite imagery
- c. Strengthen preservation including restricting activities at Okinoshima Island, updating observation and surveillance facilities to protect coral reefs, maintaining shoreline protection facilities
- d. Maintain and update the low-water line database, manage information about low-tide lines centrally
- e. Aim to maintain and use designated remote island port facilities on Okinotorishima and Minamitorishima Island
- f. Preserve inhabited remote border island regions and promote measures to sustain local communities achieving a situation where in-migration regularly exceeds out-migration in designated inhabited remote border island regions by 2027
- g. Investigate the nature of land use, understand the land ownership situation on remote border islands from the perspective of protecting territorial seas
- h. Continually implement meteorological observation and develop lighthouses or other beacons, meteorological and marine observation facilities, geospatial information of remote islands that also contributes to monitoring oceanic plate
- i. Ensure biodiversity. Appropriately protect, manage, and regenerate important ecosystems on remote islands
- j. Improve the habitat and breeding environment for aquatic plants and animals, maintain fishing grounds, protect and regenerate the fisheries environment
- k. Eliminate waste drifting at sea and drifting ashore, establish waste treatment facilities or transport waste off island

[Promote remote islands economy]

- a. Encourage permanent residency on islands by initiatives to enlarge employment opportunities including assistance for reducing marine transportation costs, and by initiatives to promote visitors and exchange opportunities through distinctive tourism
- b. Maintain and regenerate fisheries on remote islands, support business development on remote islands
- c. Promote renewable energy that uses the natural characteristics of remote islands
- d. Secure and maintain stable air and sea routes to remote islands, stable and inexpensive supply of petroleum products, support the development of communications networks
- e. Reduce the economic burden on pregnant women on remote islands, and high school students on remote islands with no high school

(2) Promote to develop EEZ

- a. Implement initiatives in line with the Future Policy for Extending the Continental Shelf (by decision of the meeting of the Headquarters for Ocean Policy on July 4, 2014)
- b. Aim to resolve the problems with overlapping claims to ocean areas by Japan and other countries in accordance with international law
- c. Steadily implement technological development aimed at energy and mineral resource development, as well as maintenance of fishing ground
- d. Continue to promote integration and disclosure of marine-related information while taking account of the strategic characteristic of marine information
- e. Where ocean area management is concerned, develop legal structures based on consultations since the Second Basic Plan on Ocean Policy

REF: Specific Measures in the Third Basic Plan on Ocean Policy (4)

7. Promote Arctic policy

(1) Research and development

- a. Promote international joint research continuously, in cooperation with the natural sciences, the humanities and social sciences, as well as the Arctic Challenge for Sustainability (ARCS)
- b. Promote advanced technology development such as Autonomous Underwater Vehicles (AUV) for polar observations
- c. Study the construction of the Arctic research vessel with the capacity of ice breaker
- d. Strengthen international joint research related to the Arctic by dispatching researchers and maintaining research/observation hubs in countries in the Arctic region
- e. Develop human resources that lead international discussion aimed for solving issues related to the Arctic

(2) International cooperation

- a. Proactively contribute to ensure respect for the principles of international law including "freedom of navigation" based on the United Nations Convention on the Law of the Sea
- b. Constructively convey Japanese scientific knowledge, which is based on observations and research, through multilateral and bilateral frameworks
- c. Further promote exchanges of opinion with Arctic-related countries including those in the Arctic region
- d. Further strengthen contributions to the activities of the Arctic Council

(3) Sustainable use

- a. Prepare the environment for Japan's marine transportation industry to use the Arctic Sea Route
- b. Continue to verify sea ice maps to safeguard shipping in the Northeast Passage
- c. Address appropriate domestic implementation of the Paris Agreement and the SDGs to contribute to measures to counter climate change in the Arctic region
- d. Continue to contribute precautionary measures through cutting-edge science and technology, and the scientific knowledge and expertise of Japan's national, public, and private sectors
- e. Encourage the Japanese business community to constructively participate in international forums such as the Arctic Economic Council and the Arctic Circle

8. Ensure international collaboration & promote international cooperation

(1) Formulate and develop maritime order

- a. Proactively participate in developing international regulations, and international collaboration and cooperation with regard to ocean at IMO meetings etc.
- b. Robustly support the activities of the International Maritime Organization and other international judicial bodies in the maritime field
- c. Publicity the international community with the principles of the rule of law at sea and policies based on scientific knowledge

(2) International coordination on the ocean

- a. Train and support Vessel Traffic Service (VTS) operators at the ASEAN Regional Training Center, strengthen cooperation with the nations participating in the East Asia Summit meetings to guarantee the freedom and safety of navigation
- b. Deepen coordination with the countries concerned through multilateral meetings such as "the Heads of Asian Coast Guard Agencies Meeting"
- c. With regard to illegal, unreported and unregulated (IUU) fishing, take the lead on strengthening measures at regional fisheries management organizations in cooperation with all countries
- d. Conclude the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships and arrange for the convention to take effect at an early stage in order to ensure the safe and environmentally sound recycling of ships
- e. Conclude the 2005 Protocols of the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation relating to the prevention of the proliferation of weapons of mass destruction

(3) International cooperation on the ocean

- a. Continue to participate in and contribute to international oceanographic observation programs and data exchanges including the Argo project operated by the WMO, IOC-UNESCO
- b. Contribute to the standardization of undersea feature names through participating in the Subcommittee on Undersea Feature Names (SCUFN)
- c. Participate in the Integrated Ocean Drilling Program (IODP)
- d. With regard to the protection of coral reefs and animals migrating long distances, survey and research the maritime environment and life forms under general international cooperation
- e. Present information about Japan's Total Pollutant Load Control System and "Sato-Umi" project to the Environmental Management of Enclosed Coastal Seas (EMECS)
- f. Contribute to improving the quality of seafarers in foreign countries through the International Cooperative Training Project for Asian Seafarers
- g. Ensure the safety of navigation in the Straits of Malacca and Singapore by means of upgrading the electronic nautical charts and conducting the joint hydrographic survey in cooperation with the littoral states funded by the Japan-ASEAN Integration Fund (JAIF)
- h. Inform and publicize Japan's advanced disaster prevention technologies in countries that are vulnerable to disasters including Asian countries and Pacific Island nations
- i. Technical support for building tsunami alert systems

9. Develop human resources and promote public understanding

(1) Foster and secure specialists to support the oceanic state

- a. Strengthen the initiatives of "The Nippon Foundation Ocean Innovation Consortium"
- b. Compile specialist educational materials containing the knowledge required for maritime development in the form of the I-Ocean initiative
- c. Strengthen regional cooperation structures, improve the quality of shipbuilding education, and train specialist human resources to educate human resources in the shipbuilding and marine industries
- d. Improve the employment environment for retired JMSDF crews, promote the activities of female sailors, improve productivity by reforming work styles, and upgrade education at the Japan Agency of Maritime Education and Training for Seafarers to guarantee and educate seafarers
- e. Educate human resources with ICT skills, expand workplace experience for young engineers, raise awareness of diving to guarantee and educate maritime engineers
- f. Switch to highly profitable operational frameworks, improve hands-on technical training at the Japan Fisheries Research and Education Agency, guarantee and educate maritime officers, improve employee retention rates in new fisheries to guarantee and educate future bearers of the fisheries industry
- g. Promote human resources development through R&D projects and make education better in response to the needs of human resource required by the industrial sector

(2) Promote to educate children and young people about the ocean

- a. Further strengthen cooperation under the "Nippon Manabi no Umi Platform" as to education for marine affairs
- b. Develop supplementary readers for use in schools, improve manuals for instructors on using data and preparing teaching materials
- c. Promote coordinated cooperation between formal education and social educational facilities, research institutes and others

(3) Promote public understanding on the ocean

- a. Stimulate citizens' understanding and interest in ocean through Ocean Day holiday and other opportunities
- b. Implement public awareness campaigns through World Tsunami Awareness Day symposiums etc.
- c. Implement the "C to Sea Project" to further raise interest in the ocean and shipping
- d. Promote use of online media, social media, and virtual reality to convey information about ocean in an accessible manner

Our ocean, our future : call for action

The General Assembly,

Recalling its resolution 70/303 of 9 September 2016, in which it decided that the high-level United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development would be convened at United Nations Headquarters from 5 to 9 June 2017,

1. *Expresses its profound gratitude* to the Governments of Fiji and Sweden for discharging their co-hosting responsibilities by assuming the costs of the United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development and its preparatory process and for providing all necessary support;

2. *Endorses* the declaration entitled “Our ocean, our future : call for action” adopted by the Conference, as contained in the annex to the present resolution.

*90th plenary meeting
6 July 2017*

Annex

Our ocean, our future : call for action

1. We, the Heads of State and Government and high-level representatives, meeting in New York from 5 to 9 June 2017 at the United Nations Conference to Support the Implementation of Sustainable Development Goal 14 of the 2030 Agenda for Sustainable Development¹, with the full participation of civil society and other relevant stakeholders, affirm our strong commitment to conserve and sustainably use our oceans, seas and marine resources for sustainable development.

2. We are mobilized by a strong conviction that our ocean is critical to our shared future and common humanity in all its diversity. As leaders and representatives of our Governments, we are determined to act decisively and urgently, convinced that our collective action will make a meaningful difference to our people, to our planet and to our prosperity.

3. We recognize that our ocean covers three quarters of our planet, connects our populations and markets and forms an important part of our natural and cultural heritage. It supplies nearly half the oxygen we breathe, absorbs over a quarter of the carbon dioxide we produce, plays a vital role in the water cycle and the climate system and is an important source of our planet's biodiversity and of ecosystem services. It contributes to sustainable development and sustainable ocean-based economies, as well as to poverty eradication, food security and nutrition, maritime trade and transportation, decent work and livelihoods.

4. We are particularly alarmed by the adverse impacts of climate change on the ocean, including the rise in ocean temperatures, ocean and coastal acidification, deoxygenation, sea level rise, the decrease in polar ice coverage, coastal erosion and extreme weather events. We acknowledge the need to address the adverse impacts that impair the crucial ability of the ocean to act as climate regulator, source of marine biodiversity and as key provider of food and nutrition, tourism and ecosystem services and as an engine for sustainable economic development and growth. We recognize, in this regard, the particular importance of the Paris Agreement adopted under the United Nations Framework Convention on Climate Change².

5. We are committed to halting and reversing the decline in the health and productivity of our ocean and its ecosystems and to protecting and restoring its resilience and ecological integrity. We recognize that the well-being of present and future generations is inextricably linked to the health and productivity of our ocean.

¹ Resolution 70/1.

² See FCCC/CP/2015/10/Add.1, decision 1/CP.21, annex.

6. We underline the integrated and indivisible character of all the Sustainable Development Goals, as well as the interlinkages and synergies between them, and reiterate the critical importance of being guided in our work by the 2030 Agenda, including the principles reaffirmed therein. We acknowledge that each country faces specific challenges in its pursuit of sustainable development, in particular least developed countries, landlocked developing countries, small island developing States and African States, including coastal ones, as do others recognized in the 2030 Agenda. There are also serious challenges within many middle-income countries.

7. We reiterate our commitment to achieve the targets of Goal 14 within the timelines, and the need to sustain action over the long term, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. We recognize, in particular, the special importance of certain targets in Goal 14 for small island developing States and least developed countries.

8. We stress the need for an integrated, interdisciplinary and cross-sectoral approach, as well as enhanced cooperation, coordination and policy coherence, at all levels. We emphasize the critical importance of effective partnerships enabling collective action and reaffirm our commitment to the implementation of Goal 14 with the full participation of all relevant stakeholders.

9. We underline the need to integrate Goal 14 and its interrelated targets into national development plans and strategies, to promote national ownership and to ensure success in its implementation by involving all relevant³ stakeholders, including national and local authorities, members of parliament, local communities, indigenous peoples, women and youth, as well as the academic and scientific communities, business and industry. We recognize the importance of gender equality and the crucial role of women and youth in the conservation and sustainable use of oceans, seas and marine resources for sustainable development.

10. We stress the importance of enhancing understanding of the health and role of our ocean and the stressors on its ecosystems, including through assessments on the state of the ocean, based on science and on traditional knowledge systems. We also stress the need to further increase marine scientific research to inform and support decision-making, and to promote knowledge hubs and networks to enhance the sharing of scientific data, best practices and know-how.

11. We emphasize that our actions to implement Goal 14 should be in accordance with, reinforce and not duplicate or undermine existing legal instruments, arrangements, processes, mechanisms or entities. We affirm the need to enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea,³ which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The future we want”⁴.

12. We recognize that the conservation and sustainable use of the ocean and its resources require the necessary means of implementation in line with the 2030 Agenda, the Addis Ababa Action Agenda of the Third International Conference on Financing for Development⁵ and other relevant outcomes, including the SIDS Accelerated Modalities of Action (SAMOA) Pathway⁶. We stress the importance of the full and timely implementation of the Addis Ababa Action Agenda and, in this context, emphasize the need to enhance scientific knowledge and research, enhance capacity-building at all levels, mobilize financial resources from all sources and facilitate the transfer of technology on mutually agreed terms, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to support the implementation of Goal 14 in developing countries.

13. We call upon all stakeholders to conserve and sustainably use the oceans, seas and marine resources for sustainable development by taking, inter alia, the following actions on an urgent basis, including by building on existing institutions and partnerships:

(a) Approach the implementation of Goal 14 in an integrated and coordinated way and promote policies

³ United Nations, Treaty Series, vol. 1833, No. 31363.

⁴ Resolution 66/288, annex.

⁵ Resolution 69/313, annex.

⁶ Resolution 69/15, annex.

and actions that take into account the critical interlinkages among the targets of Goal 14, the potential synergies between Goal 14 and the other Goals, particularly those with ocean-related targets, as well as other processes that support the implementation of Goal 14;

(b) Strengthen cooperation, policy coherence and coordination among institutions at all levels, including between and among international organizations, regional and subregional organizations and institutions, arrangements and programmes;

(c) Strengthen and promote effective and transparent multi-stakeholder partnerships, including public-private partnerships, by enhancing engagement of Governments with global, regional and subregional bodies and programmes, the scientific community, the private sector, the donor community, non-governmental organizations, community groups, academic institutions and other relevant actors;

(d) Develop comprehensive strategies to raise awareness of the natural and cultural significance of the ocean, as well as of its state and role, and of the need to further improve knowledge of the ocean, including its importance for sustainable development and how it is impacted by anthropogenic activities;

(e) Support plans to foster ocean-related education, for example as part of education curricula, to promote ocean literacy and a culture of conservation, restoration and sustainable use of our ocean;

(f) Dedicate greater resources to marine scientific research, such as interdisciplinary research and sustained ocean and coastal observation, as well as the collection and sharing of data and knowledge, including traditional knowledge, in order to increase our knowledge of the ocean, to better understand the relationship between climate and the health and productivity of the ocean, to strengthen the development of coordinated early warning systems on extreme weather events and phenomena, and to promote decision-making based on the best available science, to encourage scientific and technological innovation, as well as to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries;

(g) Accelerate actions to prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris, plastics and microplastics, nutrient pollution, untreated wastewater, solid waste discharges, hazardous substances, pollution from ships and abandoned, lost or otherwise discarded fishing gear, as well as to address, as appropriate, the adverse impacts of other human-related activities on the ocean and on marine life, such as ship strikes, underwater noise and invasive alien species;

(h) Promote waste prevention and minimization; develop sustainable consumption and production patterns; adopt the 3Rs – reduce, reuse and recycle – including through incentivizing market-based solutions to reduce waste and its generation, improving mechanisms for environmentally sound waste management, disposal and recycling and developing alternatives such as reusable or recyclable products or products that are biodegradable under natural conditions;

(i) Implement long-term and robust strategies to reduce the use of plastics and microplastics, in particular plastic bags and single-use plastics, including by partnering with stakeholders at relevant levels to address their production, marketing and use;

(j) Support the use of effective and appropriate area-based management tools, including marine protected areas and other integrated, cross-sectoral approaches, including marine spatial planning and integrated coastal zone management, based on best available science, as well as stakeholder engagement and applying the precautionary and ecosystem approaches, consistent with international law and in accordance with national legislation, to enhance ocean resilience and better conserve and sustainably use marine biodiversity;

(k) Develop and implement effective adaptation and mitigation measures that contribute to increasing and supporting resilience to ocean and coastal acidification, sea level rise and increase in ocean temperatures, and to addressing the other harmful impacts of climate change on the ocean as well as coastal and blue carbon ecosystems, such as mangroves, tidal marshes, seagrass and coral reefs, and wider interconnected ecosystems impacting on our ocean, and ensure the implementation of relevant obligations and commitments;

(l) Enhance sustainable fisheries management, including to restore fish stocks in the shortest time feasible at least to levels that can produce maximum sustainable yield as determined by their biological characteristics, through the implementation of science-based management measures, monitoring, control and enforcement, supporting the consumption of fish sourced from sustainably managed fisheries, and through precautionary and ecosystem approaches as appropriate, as well as strengthening cooperation and coordination, including through, as appropriate, regional fisheries management organizations, bodies and arrangements;

(m) End destructive fishing practices and illegal, unreported and unregulated fishing, addressing their root causes and holding actors and beneficiaries accountable by taking appropriate actions, so as to deprive them of benefits of such activities, and effectively implementing flag State obligations as well as relevant port State obligations;

(n) Accelerate further work and strengthen cooperation and coordination on the development of interoperable catch documentation schemes and traceability of fish products ;

(o) Strengthen capacity-building and technical assistance provided to small-scale and artisanal fishers in developing countries, to enable and enhance their access to marine resources and markets and improve the socioeconomic situation of fishers and fish workers within the context of sustainable fisheries management ;

(p) Act decisively to prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, including through accelerating work to complete negotiations at the World Trade Organization on this issue, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of those negotiations ;

(q) Support the promotion and strengthening of sustainable ocean-based economies, which, inter alia, build on sustainable activities such as fisheries, tourism, aquaculture, maritime transportation, renewable energies, marine biotechnology and seawater desalination as means to achieve the economic, social and environmental dimensions of sustainable development, in particular for small island developing States and least developed countries ;

(r) Increase efforts to mobilize the means necessary for the development of sustainable ocean-related activities and the implementation of Goal 14, particularly in developing countries, in line with the 2030 Agenda, the Addis Ababa Action Agenda and other relevant outcomes ;

(s) Actively engage in discussions and the exchange of views in the Preparatory Committee established by General Assembly resolution 69/292 : Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, so that the General Assembly can, before the end of its seventy-second session, taking into account the report of the Preparatory Committee to the Assembly, decide on the convening and on the starting date of an intergovernmental conference ;

(t) Welcome follow-up on the partnership dialogues and commit to implementing our respective voluntary commitments made in the context of the Conference ;

(u) Contribute to the follow-up and review process of the 2030 Agenda by providing an input to the high-level political forum on sustainable development on the implementation of Goal 14, including on opportunities to strengthen progress in the future ;

(v) Consider further ways and means to support the timely and effective implementation of Goal 14, taking into account the discussions at the high-level political forum during its first cycle.

14. We strongly call upon the Secretary-General to continue his efforts to support the implementation of Goal 14 in the context of the implementation of the 2030 Agenda, in particular by enhancing inter-agency coordination and coherence throughout the United Nations system on ocean issues, taking into consideration the work of UN-Oceans.

Policy Elements to be Considered on the Development of the Third Revised Basic Plan on Ocean Policy

Introduction

○The Importance of the Arctic for Japan

The Arctic and its adjacent regions are highly sensitive to climate change, and have been warming at more than twice the rate of the global average. Over the past 35 years, the extent of Arctic sea ice in the summer has declined by approximately two-thirds. It is projected that this trend will continue through to at least mid-century. If increases in greenhouse gas concentrations continue at current rates, the Arctic Ocean could be largely free of sea ice in summer as early as the late 2030s¹.

The rapid environmental changes underway in the Arctic present the international community, both Arctic and non-Arctic states, with a range of opportunities and challenges. The decline in sea ice is making use of the Arctic Sea Route a reality and is opening up new opportunities, including the development of resources and tourism in the Arctic Ocean. At the same time, warming of the Arctic region is creating new challenges, such as the freshening and warming of the Arctic Ocean associated with the melting of sea ice, the progressing of ocean acidification and its impact on fragile Arctic ecosystems, sea-level rise due to the melting of land-based ice, climate change and changes in the hydrological cycle both in the Arctic and on a global scale, as well as potential changes in the security environment in the Arctic.

These environmental changes in the Arctic region are not completely unrelated to Japan. While Japan is not an Arctic state, but a “maritime state” surrounded by the sea, it is easily affected by climate change in the Arctic region through oceanic and atmospheric circulation. On the other hand, being geographically located closest to the Arctic Ocean in the Asian region, Japan is in a position to enjoy many opportunities in the economic and commercial sectors, such as the utilization of the Arctic Sea Route.

Japan was granted observer status to the Arctic Council (AC) in May 2013. Therefore, it is necessary to bear in mind that it needs to make further international contributions for addressing issues related to the Arctic in a responsible manner. For more than half a century, since the 1950s, Japan has carried out observations of and research on environmental change in the Arctic. Given its long-term accumulation of scientific knowledge and observation in the Arctic, Japan is expected to further contribute to the sustainable use of the Arctic, including active engagement in decision- and rule-making on the Arctic. It is also important for Japan to develop bilateral and multilateral dialogue and cooperation with interested states, including both Arctic and non-Arctic states.

○The Necessity of Incorporating Policies on the Arctic into the Basic Plan on Ocean Policy

The Basic Plan on Ocean Policy adopted by the Japanese Cabinet in April 2013 outlines measures responding to changes in the Arctic Ocean as focus areas to be pursued in a comprehensive and strategic manner. Nevertheless, in the current Basic Plan on Ocean Policy, the policies and measures on the Arctic are regarded as no more than one element of the “policies and measures concerning the oceans,” such as climate change, ocean observation, marine science and technology, marine industries, and marine resources. Given current social and economic trends and interest in the Arctic, both domestically and internationally, such as approval of Japan’s application for observer status in the Arctic Council of May 2013, formulation of Japan’s Arctic Policy of October 2015, recognition of the positive contributions of Observers to the work of the Arctic Council, as well as encouraging further efforts to strengthen relationships with Observers in the Fairbanks Declaration of May 2017, policy elements regarding the Arctic in the ocean policy are more im-

¹ Arctic Monitoring and Assessment Programme (AMAP), Snow, Water, Ice and Permafrost. Summary for Policy-makers, 2017.

portant than ever. Therefore, while there are broadly common elements between Arctic policy and ocean policy, policies on “the Arctic” should be treated as an independent section in the Third Revised Basic Plan on Ocean Policy in order to make the content of Arctic policy more concrete and effective.

Furthermore, since Arctic policy covers a wide range of areas such as diplomacy, security, the environment, maritime shipping, resources, information and communications, and science and technology, it should be addressed in a cross sectoral and multidisciplinary manner. Nevertheless, Arctic policy in Japan continues to be implemented based on the jurisdiction of each ministry and agency, and not necessarily strategically coordinated among ministries and agencies due to the compartmentalized government structure. Taking into account the cross-sectoral nature of Arctic issues, it is essential for Japan to establish a coordinating system that allows for implementation of integrated measures for addressing these issues, under the general coordination of the National Ocean Policy Secretariat of the Cabinet Office as the “control center,” to coordinate relevant ministries and agencies from an “All Japan” perspective.

In addition, nearly two thirds of the Arctic region are covered by ocean waters, but, unlike Antarctica, there is no single comprehensive legal regime governing the Arctic region. Therefore, the law of the sea, especially the United Nations Convention on the Law of the Sea (UNCLOS), is the main legal regime governing the Arctic. In this context, it is appropriate that Arctic policy is recognized as part of the ocean policy.

Against this background, the Study Group for the Future of the Arctic has considered measures and policies on the Arctic that should be given consideration in the Third Revised Basic Plan on Ocean Policy (2018 to 2022), and recommends the following initiatives.

○Policy Areas Related to Each Priority Issue

1 Enhancement and Promotion of Arctic Research

The effects caused by global warming, such as the rapid reduction of sea ice, the rapid rise in sea temperature, and ocean acidification are seen prominently in the Arctic. Global warming gives rise to a number of effects such as extreme weather events not only in the Arctic region but also in non-Arctic states, including Japan. However, the mechanism of environmental change in the Arctic is still not sufficiently understood.

Japan has continued its research and observation activities on environmental changes in the Arctic using research vessels and earth observing satellites for many years, and has long actively contributed to international scientific cooperation. The results of Japan’s continued research and high-precision observation in the Arctic region, where limited means of observation are available, are highly appraised internationally, and the international community has large expectations for Japan. It is important to play a leading role in efforts on the Arctic through active international cooperation, cross-cutting and comprehensive research, and coordination and collaboration with stakeholders by making use of Japan’s strengths in science and technology.

The Arctic region research project funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), called ArCS (Arctic Challenge for Sustainability) is currently underway (from September 2015 to March 2020), and researchers in the field of natural sciences and in the social sciences and humanities are working together on various initiatives, such as the construction of a network of social scientists of the Arctic and the implementation of joint research projects. However, more can be done, including coordination of implementing organizations and projects, international joint research, and enhancing the roles for Arctic policy recommendations. It is therefore essential to create an effective research system, including the strengthening of the ArCS project, in order to establish Arctic research in Japan in the future.

In addition, in order to provide a more accurate understanding of environmental changes in the Arctic, it is necessary to conduct research in the Arctic in seasons other than in summer and to make observations on the ocean, sea ice, and weather. However, the current oceanographic research vessel *MIRAI*, operated by Japan Agency for Marine-Earth Science and Technology (JAMSTEC), has no icebreaking capabilities, so only limited marine areas and periods for research and observation in the Arctic are possible. In the Asian region, China and Korea have already constructed and are operating icebreaking research vessels. Given this situation, it is essential for Japan to construct its own icebreaking research vessel in order to continue high-precision research and observation in the Arctic and to enhance Japan’s presence in Arctic research. It will also be vital to improve the research infrastructure that allows the comprehensive promotion of Arctic research, including the development of observation equipment such as remotely operated vehicles (AUV, etc.) and observing satellites.

(1) Enhance initiatives related to Arctic research

- In order to increase Japan's presence in international fora and facilitate various initiatives specified in Japan's Arctic policy, it should improve and strengthen support systems for the current ArCS project and create an enabling system for the future development and long term implantation of Arctic research. For that purpose, Japan should improve measures for promoting and supporting Arctic research, such as through the establishment of a research network and a research stations under the ArCS project, strengthening collaboration in the fields of natural sciences and in social sciences and the humanities, as well as the promotion of an interdisciplinary approach to international joint research projects.

(2) Strengthen and support infrastructures for scientific research in the Arctic Ocean

- Provide support for the development of infrastructure and the research environment that enables scientific observation to fill the data gaps in the Arctic Ocean, such as ice-covered areas, the central Arctic Ocean, and Russian coastal areas. For that purpose, Japan should improve infrastructure, including the construction of a new research vessel for Arctic research and platforms for observations, such as observation equipment (AUV, etc.), develop human resources, and provide support for implementing joint research projects with the Arctic coastal states.
- It is necessary to construct a research vessel for the Arctic with icebreaking capabilities by the early 2020s at the latest, in order to continue high-precision, multi-parameter, and wide-area observation in the Arctic. It is also important to consider year-round utilization of the research vessel, including research and observation in areas other than the Arctic, towards the most efficient operation of the research vessel.
- Efforts should also be made to strengthen the development of leading-edge technologies, such as AUVs for the polar areas, in order to allow research and observation in areas which vessels cannot access.
- Develop and maintain the Microwave Scanning Radiometer onboarded observing satellite and its successor, which is necessary for observing sea ice and monitoring climate change in the Arctic ocean.

2 Protection of the Marine Environment of the Arctic Ocean: Responses and Contributions

The effects of climate change are more evident in the Arctic than anywhere else in the world, with impacts not only on the Arctic, but the entire planet. For example, it has become increasingly clear, according to the scientific findings by Japanese researchers based on research in the Arctic Ocean, that extreme weather in the northern hemisphere, such as extremely warm winters, a series of very cold weather periods, and heavy snows in the northern hemisphere, has links to changes of sea-ice area in the Arctic Ocean. It has also been reported that the temperature of the Arctic Ocean is increasing as a result of the melting of the sea ice by global warming, and desalination and acidification are affecting marine ecosystems. This indicates that environmental change in the Arctic is not only a problem for Arctic nations but also has the potential to affect Japan's weather and fisheries resources, and to eventually cause environmental change on a global scale. Furthermore, management of the high seas of the central Arctic Ocean is the responsibility of the entire international community, including Japan. Given these facts, it is of great importance to continue and advance scientific understanding of environmental changes in the Arctic, as well as take measures to protect the marine environment of the Arctic Ocean, including implementing relevant international agreements.

For these purposes, Japan should create an enabling system for continuous and long term engagement in research and observation of environmental changes in the Arctic, and for promoting research and development of methods for marine environmental impact assessments, including further improvement in numerical modeling. In addition, Japan should contribute to efforts to reduce global warming in the Arctic and protect the marine environment of the Arctic Ocean through appropriate national implementation of UNCLOS and other international agreements, such as the Polar Code, that formulate mandatory international standards for the safety of ships operating in polar waters, as well as the Paris Agreement, which is the international framework for GHG emission reductions from 2020.

Furthermore, when the Arctic Sea Route becomes open more frequently for navigation due to the decline in sea ice in the Arctic Ocean, three straits (Tsushima, Tsugaru, and Soya) that enter and exit the Sea of Japan will become congested and pose numerous ship-based marine environmental problems, including oil

pollution arising from maritime accidents and collisions with marine mammals. It will therefore be essential for Japan to designate sea lanes and examine ex-ante and ex-post measures for preventing, minimizing, or mitigating marine environmental damages such as those caused by oil spills.

- (1) Efforts to Address Environmental Change in the Arctic Ocean
 - Continue efforts to conduct observation and scientific research in the Arctic Ocean and promote technological developments for enhancing the system of observation and forecasting in order to understand the effects of environmental change and its impacts accurately.
- (2) Ensuring the Conservation of the Marine Environment of the Arctic Ocean
 - Develop domestic laws and take necessary measures to support related industries to properly implement the International Code for Ships Operating in Polar Waters (Polar Code), which includes related amendments to the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL) of the International Maritime Organization (IMO).
 - Make efforts towards appropriate domestic implementation of the Paris Agreement on climate change and the United Nations Sustainable Development Goals (SDGs), with close cooperation between ministries and agencies involved in contributing to measures addressing climate change in the Arctic region.
 - To prevent unregulated high seas fishing in the central Arctic Ocean and appropriate management of fisheries resources in that area, actively participate in discussions of rulemaking on the Arctic with relevant countries, including Arctic coastal states, and actively contribute to the realization of sustainable use of the Arctic region.
 - Actively participate in discussions regarding marine environmental problems in the Arctic Ocean held at the forum, such as the working group of the Arctic Council and other related meetings, and make further contributions to the consideration of prevention and response measures through utilization of Japan's experiences, scientific knowledge, and leading-edge technologies.
 - Take appropriate measures, including the designation of sea lanes and measures on oil spill control in order to prevent marine environmental problems in the marine zones surrounding Japan due to increased use of the Arctic Sea Route.

3 Promotion of the Ocean Economy (Blue Economy) in the Arctic Region

While the decline in sea ice in the Arctic Ocean due to global warming has a negative impact on the natural environment in the Arctic, it also creates more opportunities for the use of the Arctic Sea Route, tourism, access to and development of natural resources (both mineral and living resources) and marine energy resources, as well as the development of port facilities and telecommunications. In this way, changes in the Arctic Ocean affect our society and economy in both positive and negative ways. In particular, the opening of the Arctic Sea Route provides a new commercial shipping route between East Asia and Europe, and there are also expectations that it will contribute to the policy for revitalization of local economies, with a particular focus on Hokkaido.

However, economic activities such as the use of the Arctic Sea Route and the development of natural resources in the Arctic Ocean are subject to a number of restrictions both procedural and substantive: concerns over marine pollution, increases of GHG emissions, and negative effects on the vulnerable Arctic Ocean ecosystems associated with navigation and resource development; cost issues in construction, maintenance and personnel of icebreaking research vessels; concerns over stability of the shipping route, such as weather, sea ice and geopolitical risks; human resources; and its sustainable profitability. Given these circumstances, the interest of Japan's business community in a blue economy² in the Arctic region is limited, and there is also insufficient information for the formulation of policy at the government level.

The blue economy can include established ocean industries such as shipping, fisheries, offshore renewable energy, and marine biotechnology as well as natural assets and ecosystem services provided by the oceans, and they are closely related to each other. It is therefore necessary to provide safe and environ-

² The "blue economy" concept refers to the sustainable use of ocean resources in a variety of economic areas, and seeks to promote economic growth, social inclusion, and the preservation or improvement of livelihoods while at the same time ensuring environmental sustainability of the oceans and coastal areas. (World Bank and United Nations Department of Economic and Social Affairs, *The Potential of the Blue Economy*, World Bank, 2017.)

mentally sound maritime conditions for promoting the blue economy. For that purpose, Japan should endeavor to take measures not only for stimulating the economy, such as through improving infrastructure for promotion of the use of the Arctic Sea Route, raising public awareness for increasing its utilization, establishing a favorable investment environment, and inspiring and supporting innovation, but also to emphasize that environmental and biodiversity impact assessments are used to a greater extent in the Arctic. These impact assessments are used, for example, in assessing various risks pertaining to the economic activities in the Arctic region, including impacts caused by climate change, and gathering background and compiling information to support the assessment, as well as in the utilization of ocean resources. It is therefore important that due consideration be given to both the environment and the economy in any measures taken.

Furthermore, Japan should attach particular importance to building bilateral cooperation with the Arctic coastal states in connecting the promotion of the blue economy in the Arctic and the sound development of Japan's marine industries. In order to enhance the international competitiveness of Japan's marine industries, it is necessary to take measures, through joint efforts of the public and private sectors, for encouraging Japanese companies to participate in economic activities in the Arctic Ocean. For that purpose, Japan should support active involvement of Japanese companies in international fora for dialogues in which large numbers of industry representatives participate, such as the Arctic Economic Council and the Arctic Circle, and promote initiatives for building up knowledge of Arctic regions and toward industrialization by the Japanese business community.

- (1) Support innovations for promoting a sustainable blue economy in the Arctic
 - Related government ministries and agencies, local governments, private corporations, and academic institutions should cooperate to collect information and conduct research on scenarios of commercial use of the Arctic, such as the utilization of the Arctic Sea Route, the development of natural resources in the Arctic Ocean, and tourism in the Arctic Ocean that are compatible with the conservation of the Arctic environment. For this purpose, Japan should establish a forum for industry-academia-government collaboration and continue its discussion.
 - Through collaboration with the industrial, academic and governmental sectors, Japan should support formation of the business model and innovation on the utilization of Arctic Ocean and Arctic Sea Route, including demonstration projects conducted by the government and utilizing public funds.
 - Strengthen activities for raising awareness and increasing publicity of economic activities with regard to the Arctic, including organization of events such as seminars or symposium on these topics.
 - Take proactive measures to improve and expand the infrastructures, such as new or upgraded harbors, railways, airports, and the trunk road network connecting the Arctic Sea Route, including development of laws, with a particular focus on Hokkaido by giving the future potential of this route serious consideration.
- (2) Create Arctic-related business opportunities
 - Create international business opportunities in the Arctic, including cross-sectoral innovation supports in the field of oceans, improvement of the hub for research, development of ocean technologies and joint innovation, and exchange of views with Arctic and other states concerned.
 - For the purpose of promoting cooperation with the relevant states on resource development in the Arctic Ocean, take measures, including building consortiums or hosting symposiums in collaboration with the government, industries and academic institutions of the states concerned.
 - With coordination among the industrial, academic and governmental sectors, consider measures for supporting industries in the Arctic, including provide supports for active participation by the Japanese private sector in the Arctic Economic Council or the Arctic Circle.

4 Securing Safety and Security of the Arctic Ocean

Safety and security on the oceans has a multi-dimensional nature, and the Arctic Ocean is no exception. In the Arctic Ocean, the decline in sea ice caused by climate change is likely to create more opportunities for use of the Arctic Sea Route, including the development of resources and expansion of accessible areas for marine scientific research. At the same time, there are unresolved issues among the Arctic states bordering the Arctic Ocean over maritime delimitation and extension of the continental shelf, and some Arctic states have been proactively deploying military forces in the Arctic region to secure their interests in re-

source development and use of the Arctic Sea Route with a view to protecting their maritime interests and defending their territory³.

Since expansion of economic activities due to the reduction of sea ice in the Arctic Ocean is expected, it is essential for Japan, as a nation promoting the use of the Arctic Sea Route and contributing to the protection of the Arctic environment through scientific activities, to urge upon all relevant states the importance of bilateral and multilateral dialogues as a way to avoid escalation of military tensions in the Arctic region⁴. As a prerequisite for ensuring safety and security in the Arctic Ocean, Japan should attach particular importance to maintaining the rule of law in that area. Based on this understanding, Japan should continue to stress the importance of respecting international law, including UNCLOS, with particular emphasis on the principle of the freedom of navigation, by actively utilizing opportunities such as the Arctic Council. It is also an important issue for Japan to reinforce the capacity of Maritime Domain Awareness (MDA) in the Arctic in order to respond to changes in the safety and security environment of the Arctic Ocean.

As indicated, ensuring the rule of law is crucial for safety and security in the Arctic Ocean, so Japan should actively participate in and contribute to the maintenance of order on the sea and the development of international agreements regarding the Arctic Ocean. In addition, in order to contribute to ensuring the rule of law, Japan should maintain and reinforce close cooperation with the Arctic states and other relevant states and endeavor to build diplomatic trust with those countries through forums for dialogue on the Arctic, such as the Arctic Council or bilateral or multilateral forums for Arctic-related issues.

Furthermore, as economic activities in the Arctic Ocean expand, maritime transport on the Arctic Sea Route will likely become congested. It is therefore important to consider appropriate support and responses for addressing maritime casualties and maritime disasters in that area. It will also be important for Japan to contribute to the maintenance of safety and security of the Arctic Ocean by making use of its main strength, creating for example, nautical charts and sea ice flash charts for safe navigation along the Arctic Sea Route, including conducting hydrographic surveys in the Arctic Ocean, and using sea ice observation data collected by satellites through cooperation with the Arctic coastal states.

- (1) Contribute to maintaining the rule of law in the Arctic Ocean
 - In multilateral forums such as the Arctic Council and in bilateral dialogues with Arctic and other concerned states, continue to encourage that the United Nations Convention on the Law of the Sea (UNCLOS) be applied to activities in the Arctic Ocean and that related principles recognized under international law, including “freedom of navigation,” be respected.
 - In order to maintain order on the ocean, Japan, as a concerned state, should actively participate in the future process of international rule-making on the Arctic Ocean and build close cooperative relationships with relevant states for ensuring peaceful use of the Arctic Ocean.
 - In preventing an escalation of tensions, such as over resource development in the Arctic Ocean, into military tensions, encourage the need for fostering a common understanding about the rule of law at sea among states in related forums, including the Arctic Council, and in dialogues with other concerned states.
- (2) Enhance maritime domain awareness (MDA) in the Arctic
 - In order to address conditions and trends in the Arctic Ocean that may affect our safety, security, commercial or environmental interests, establish a mechanism for comprehensive collection and management of marine-related information in the Arctic, and enhance coordination and cooperation for maritime-related information sharing and management among related ministries.
 - Make efforts for the improvement and strengthening of observation, research, and monitoring capabilities in the Arctic Ocean, including development of necessary facilities and establishment of technologies and systems for ocean observations.
 - Make progress in charting and mapping the Arctic Ocean and waterways and create sea ice flash charts for safe navigation along the Arctic Sea Route, together and in cooperation with the Arctic coastal states, and also share this information with other concerned states.

³ See Defense of Japan 2017 (Annual White Paper), Part I, Chapter 3, Section 3, pp.190-191.

⁴ The Ottawa Declaration (adopted on 19 September 1996), which announced the establishment of the Arctic Council (AC), stated that the AC “should not deal with matters related to military security.” With regard to military and security issues in the Arctic, the Arctic Security Forces Roundtable (ASFR), which is made up of representatives of national security forces centering on those of the member nations of the AC, plays the role of a forum for improving Maritime Domain Awareness (MDA) in the Arctic Ocean and promoting cooperation and the sharing of information in the area of search and rescue.

5 Promotion of International Cooperation on the Arctic

Environmental changes in the Arctic pose various challenges to the international community, whether Arctic or non-Arctic nations, so bilateral and multilateral cooperation are vital for responding to those issues. At the same time, international cooperation at the national level as well as cooperation among industries and research communities are important for promoting sustainable development in the Arctic, where environmental changes are creating new commercial opportunities, such as the use of the Arctic Sea Route and the development of natural resources.

Since rule-making regarding and coordination of international cooperation in the Arctic is substantially assigned to the Arctic Council, proactive engagement with the discussion is necessary in order to safeguard Japan's national interests. It is also necessary to bear in mind that Japan has observer status in the Arctic Council, and a greater contribution to addressing Arctic issues is therefore expected. For this purpose, Japan should attach importance to developing experts on Arctic issues who are able to propose specific measures for the sustainable development of the Arctic and to participate in and contribute to the discussion in international fora, including the Arctic Council. It is also important to promote and strengthen joint international Arctic research with interested states, including the Arctic states, in an effort to increase international cooperation on human resource development.

The challenges facing the Arctic are far too multifaceted and broad for any single individual state or the Arctic states alone to successfully deal with. In order to address Arctic issues and create new opportunities that are transnational and global in nature, Japan, by making use of its strengths in science and technology, should attach importance to further strengthening bilateral and multilateral cooperation with Arctic and non-Arctic states and make contributions to various international frameworks for advancing the agenda on ocean governance.

It is also important for Japan to contribute to facilitating the “Sustainable Development Goals (SDGs)⁵” in the Arctic as part of its international cooperation efforts. In relation to this, the Arctic Council has reaffirmed “the United Nations Sustainable Development Goals and the need for their realization” in the Fairbanks Declaration of May 2017. As a maritime nation and an observer state in the Arctic Council, contribution to the realization of SDGs in the Arctic is also an important issue for Japan. It is therefore essential for Japan to give due consideration to the elements of SDGs in planning ocean measures related to the Arctic, and to actively contribute to their realization.

- (1) Contribute to the process of international rule-making on the Arctic
 - Actively participate in meetings related to international rule-making on the Arctic, such as the Arctic Council (AC), and encourage constructive discussions based on scientific grounds in order to ensure the interests of Japan and the international community.
 - Actively encourage related countries to take actions based on the “rule of law” in order that relevant international law, including the United Nations Convention on the Law of the Sea (UNCLOS), be applied and that the principles recognized under international law, including “freedom of navigation” be secured on the seas, including the Arctic Ocean.
- (2) Promote international scientific and technological cooperation in the Arctic
 - By promoting international joint research not only in the field of natural science but also in the social sciences and humanities, and disseminating its findings internationally, contribute to addressing environmental issues in the Arctic, such as the warming of the Arctic Ocean and its impact on global climate.
 - Promote Arctic cooperation with the Arctic states, including the conducting of bilateral and/or multilateral joint research on Arctic Ocean, and the concluding of an agreement on scientific and technological cooperation.
- (3) Develop and foster human resources to be able to contribute to solving problems in the Arctic
 - In order to contribute to solving problems in the Arctic, facilitate support for education and research for training and securing specialists not only in the field of the natural sciences, including technologies, but also in the social sciences and humanities.
 - Contribute to the capacity building of people in the Arctic, as part of international cooperation,

⁵ 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs) with 169 targets, adopted at the UN on 25 September 2015. The goals address the needs of people in both developed and developing countries. In relation to the oceans, “Conserve and sustainably use the oceans, seas and marine resources for sustainable development” is taken up as Goal 14.

through providing support for international joint research with Japan, including improvement of hubs for research and observation and the exchange of researchers in the Arctic states.

- (4) Contribute to achieving the United Nations Sustainable Development Goals (SDGs) in the Arctic
- Give consideration to the Arctic's unique characteristics when taking measures to promote “the Sustainable Development Goals (SDGs) Implementation Guiding Principles” and “Specific Measures to Achieve the Sustainable Development Goals,” that were adopted by the “Sustainable Development Goals (SDGs) Promotion Headquarters” at the Prime Minister’s Office of Japan in December 2016, with particular focus on achieving Goal 13 on Climate Change and Goal 14 on Oceans and Seas.

Proposals on the Ocean Acidification issues toward the next Japan's Basic Plan on Ocean Policy (August, 2017)

Ocean acidification(OA) is a problem referred to in recent years as “The Other Carbon Dioxide Problem,” as along with global warming it is an environmental impact factor on a global scale. This led in 2015 to its being one of the targets of the UN Sustainable Development Goals (SDGs), which call for efforts to “Minimize and address the impacts of ocean acidification.” The Fifth Assessment Report of IPCC points out that if emission reduction measures of carbon dioxide aren't sufficient, ocean acidification might pose a serious risk to marine ecosystems. There are also predictive studies which indicate that areas suitable for reef-building coral will disappear from the seas around Japan by the 2040s due to the rise of water temperature and ocean acidification. At the same time, the predictions do contain uncertainties, so better understanding of the progress of ocean acidification and its impacts on marine creatures and marine ecosystems are urgent issues.

Taking these current situations into consideration, we will submit the following proposals for inclusion in the next Basic Plan on Ocean Policy.

1: Promotion of understanding based on scientific knowledge and consideration of countermeasures

Though there are fears of impacts on marine creatures, etc., current understanding is not sufficient. To address this situation, scientific research on ocean acidification's impacts on marine creatures and marine ecosystems should be promoted and related analysis technologies developed. In order to monitor the progress of ocean acidification, hydro-chemical time-series observations of 137° E line and K2 station as well as observation at coastal areas should be continued. Also, not only should effective monitoring be promoted that is suitable to the unique characteristics of each ocean area, including coastal areas, but efforts should also be made on related technical development and international standardization.

Based on the scientific knowledge obtained from these activities, studies should be promoted on adaptation measures, such as the specification of less impacted areas and their conservation.

2: Increase international contributions

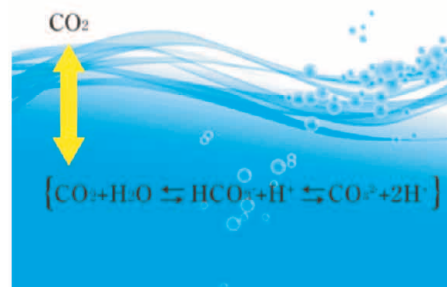
Participate in and contribute to the international framework of data sharing, such as the Global Ocean Acidification Observation Network (GOA-ON). Based on worries over the impacts on reef-building corals, which play an important role in the environments, economies, and disaster prevention in developing countries of the Asian Pacific region, capacity development activities should be aggressively promoted and scientific research such as in situ monitoring should be supported.

3: Promotion of emission reduction measures of carbon dioxide (promotion of mitigation measures)

If emission reduction measures of carbon dioxide aren't sufficient, the ocean environment will be affected seriously through global warming and ocean acidification. Given this situation, work on domestic reduction measures should be steadily carried out and leadership demonstrated internationally towards achievement of the Paris agreement, which called for “keeping global temperature rise well below 2 degrees Celsius” and “pursuing efforts to limit the temperature increase even further to 1.5 degrees Celsius.”

4: Promotion of Public Awareness Activities

Ocean acidification is not only an environmental impact factor on a global scale but also an issue that might affect marine ecosystems and fisheries in the future around Japan. Taking these situations into account, public awareness activities should be promoted based on scientific knowledge. It is important to promote public awareness activities with the cooperation of regional communities, indicating the necessity of measures to minimize impacts of ocean acidification in coastal areas, such as by reducing the inflow of organic matter from land.



Fact Sheet

■ “The Future We Want” (Rio+20, 2012)

We call for support to initiatives that address ocean acidification and the impacts of climate change on marine and coastal ecosystems and resources. In this regard, we reiterate the need to work collectively to prevent further ocean acidification, as well as enhance the resilience of marine ecosystems and of the communities whose livelihoods depend on them, and to support marine scientific research, monitoring and observation of ocean acidification and particularly vulnerable ecosystems, including through enhanced international cooperation in this regard.

■ “Sustainable Development Goal (SDGs)” (2015)

Target 14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.

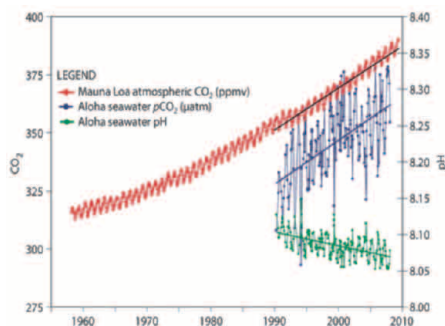


Figure 1. Time series of atmospheric CO₂ at Mauna Loa (ppmv) and surface ocean pH and pCO₂(µatm) at Ocean Station Aloha in the subtropical North Pacific Ocean

Source: Feely, R.A., S.C. Doney and S.R. Cooley (2009), ‘Ocean acidification: present conditions and future changes in a high-CO₂ world’, *Oceanography*, 22 (4), 36-47.

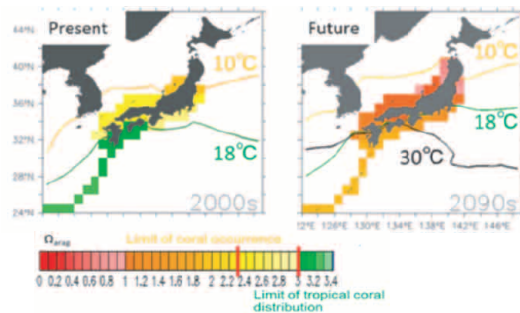


Figure 2. Future prediction using “Business as usual (BAU)” scenario

Source: Yara et al. (2012) Ocean acidification limits temperature- induced poleward expansion of coral habitats around Japan.

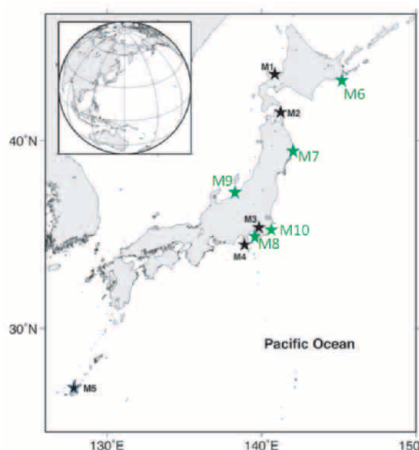


Figure 3. Ongoing Japan-coast pH monitoring sites

Source: T.Ono, International conference “Impacts of Global Warming and Ocean Acidification on Marine Ecosystems and Necessary Policy Measures” in Tokyo on 19-20 January 2017.



Lectures



Monitoring



Planning

Photos. As part of the efforts to raise public awareness on OA in Japan, OPRI-SPF has been coordinating guest lectures on the issue at Kanagawa Prefectural Marine Science High School since 2016. In August 2017, they started pH monitoring activities in areas near the school.



In order to address the issues of ocean warming and acidification, OPRI-SPF is developing “Marine Crisis Watch”.

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