

## Japan's Arctic Policy

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## **1 Introduction – Rapidly Changing Arctic Environment and Increasing Interest over the Arctic**

The first freighter to sail from Europe to Japan via the Arctic Sea Route arrived in 2012. In the same year, a Japanese research organization announced that sea-ice extent of the Arctic Ocean was the smallest in recorded history. In the context of rapid change in the Arctic environment, as typified by the shrinking amount of the Arctic Ocean sea ice, international interest over the Arctic has been increasing since the 1980s.

The Arctic environment is responding very sensitively to global warming, and Arctic Ocean sea-ice is decreasing at a pace exceeding scientific predictions. Over the past 35 years, the Arctic sea ice extent in the summer has declined by nearly two-thirds. If effective mitigation measures are not taken, and if global warming continues to accelerate at the maximum pace, a nearly ice-free Arctic Ocean in the summer by the mid-century is likely. Although the mechanisms of environmental change in the Arctic are still not sufficiently understood, the impact of global warming is amplified to a greater extent in the Arctic than in any other regions on the Earth.<sup>1</sup>

There is a risk that rapid change in the Arctic environment will have a drastic and irreversible impact on the foundations of the lives of indigenous peoples and others who live in such harsh environment, and on the ecosystem under the vulnerable environment in the Arctic. Therefore, the international society needs to act in a responsible manner. There are also concerns that environmental changes in the Arctic will accelerate global warming, lead to global sea-level rise, increase the frequency of extreme weather events, and adversely affect ecosystems.

At the same time, the decreasing amount of sea ice has expanded the navigable area, enabling the opening of shipping lanes in the Arctic Ocean and other new economic uses. Amid increasing interest in economic activities in the Arctic, including the development of mineral and marine living resources<sup>2</sup> and utilization of the Arctic Sea Route, discussions are underway at the Arctic Council (AC), the International Maritime Organization (IMO) and other forums regarding economic activities that can be carried out in a sustainable manner while preserving the vulnerable and low resilient Arctic environment as well as international rule-making. Some Arctic states, with a view toward securing their national interests and protecting their territories, have become active in the area of national defense. Moves toward expanding military presence may have an impact on the international security environment.

In this way, changes in the Arctic environment have political, economic, and social effects, not

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<sup>1</sup> Temperature variation according to the amount of carbon dioxide in the atmosphere is greater in the Arctic region than the global average. This phenomenon is called "polar amplification". It was predicted in the 1970s by computer models (Manabe and Wetherald 1975, Manabe and Stouffer 1979) and recently has been confirmed by scientific observations (Screen and Simmonds 2010, Serreze and Francis 2006, Serreze et al. 2009).

<sup>2</sup> However, it needs to be remembered that land areas in the Arctic are under the sovereign authority of the states in the region. A large part of the Arctic Ocean consists of the territorial waters of the coastal states, and these have sovereignty or sovereign rights to exclusive economic zones (EEZ) and continental shelves.

only in the Arctic but also globally. Resulting opportunities and issues are attracting the attention of the global community, both of Arctic and non-Arctic states.

Japan is called upon to recognize both the Arctic's latent possibilities and its vulnerability to environmental changes, and to play a leading role for sustainable development in the Arctic in the international community, with foresight and policy based on science and technology that Japan has advantage in order to achieve sustainable development.

## **2 Background and Purpose of Basic Policy**

On the basis of increased interest from the international community over the Arctic, the Basic Plan on Ocean Policy, adopted by the Japanese Cabinet in 2013, outlines the following as focus areas to be pursued strategically and comprehensively: (1) observation of and research on the Arctic from a global perspective; (2) international cooperation on the Arctic; and (3) examination of the feasibility of the Arctic Sea Route.

While basing on the philosophy of the Basic Plan on Ocean Policy, Japan's Arctic policy is intended to define policy for more specific measures. From the standpoint of "Proactive Contribution to Peace" based on the principle of international cooperation, the policy defines strategic initiatives in the fields of diplomacy, national security, environment, transportation, resource development, information and communications, and science and technology, from a multidisciplinary perspective with contributions from industry, academia, and the government. It aims to set Japan as an important player that contributes to the international community through its action to Arctic issues.

Against this background, Japan will:

- Make full use of Japan's strength in science and technology from a global viewpoint,
- Give full consideration to the Arctic environment and ecosystem, which is fragile, with a lower ability to recover,
- Ensure the rule of law, and promote international cooperation in a peaceful and orderly manner,
- Respect the right of indigenous peoples to continuity in their traditional economic and social foundations,
- Pay full attention to security developments in the Arctic,
- Aim for economic and social compatibility with climate and environmental changes, and
- Seek possible economic chances for the use of the Arctic Sea Route and for the development of resource

by implementing the following initiatives.

### **3 Need to Address Arctic Issues**

#### **○ Global Environmental Issues**

Rapid environmental changes in the Arctic, while the changes are increased and amplified by global environmental changes, should be regarded as global issues beyond regional issues because it is possible that the changes in the Arctic will affect globally including global warming. Although the major factor of climate change is global warming caused by increased emissions of greenhouse gases, the accelerated warming in the Arctic is caused by the interaction of a number of factors in a complex process, including the atmosphere, sea currents, and especially the decrease of sea ice in the Arctic Ocean. It allows more open water to absorb heat from the rays of the sun, a phenomenon that is demonstrated as a major amplifier of global warming. There are also concerns that change in the Arctic environment could increase the frequency of extreme weather events in Japan and other mid- and high-latitude states. It is projected that warming in the Arctic will likely continue, even in the absence of expanded economic activity. Therefore, the international community is faced with new challenges: clarifying the mechanisms of Arctic warming and its possible implications for the entire globe, and studying responses to Arctic warming. Furthermore, it is pointed out that development and expanded economic activity will result in pollution of the air and water, such as leaking and discharge of pollutants from ships into the Arctic Ocean.

Japan has played a leading role in formulating the Kyoto Protocol, the Aichi Biodiversity Targets, and other agreements through which the international community has responded to global environmental problems such as global warming and the loss of biodiversity. While strengthening international cooperation, including collaboration with the Asia Pacific states, Japan has proposed advanced efforts in both mitigation and adaptation. Japan should use its experiences and findings to contribute significantly to addressing these global environmental issues stemming from the environmental changes in the Arctic.

#### **○ Indigenous Peoples of the Arctic**

The Arctic is home to about four million people, including indigenous peoples. A wide variety of language, cultures, and traditions exist there, while many different kinds of identities exist. Indigenous peoples are easily affected by environmental change and expanded economic activity in the Arctic. Japan needs to examine how we can contribute to achieve sustainable development of which indigenous peoples can see benefits while protecting the foundations of traditional cultures and lifestyles.

○ **Science and Technology**

For more than half a century, since the 1950s, Japan has carried out observations of and research on the Arctic. From a global perspective, we have maintained a high level of scientific interest in the changes of the Arctic environment. In 1991, more than 20 years ago, Japan became the first non-Arctic state to establish an observation station in the Arctic. It was the first non-Arctic state to join the International Arctic Science Committee (IASC), which was established in 1990. Observation data and scientific knowledge from Japan have made major contributions to understanding the environmental changes in the Arctic. Japan has conducted satellite, ocean, and land observations and simulations at a high level, and has received a high evaluation from the international scientific community.

In 2015, amid growing international interest over the Arctic, the Arctic Science Summit Week (ASSW), the most important international conference on Arctic research was held in Japan. In addition to the importance of scientific understanding of the changes in the Arctic, there was renewed recognition of the importance of understanding the impacts on society, politics, and economy as well as the importance of cooperation among industry, academia, and government, including in non-Arctic states.

Although the Arctic has become an important issue to the international community in recent years, scientific understanding of the Arctic is still inadequate. More than ever before, Japan should make the best use of its strengths, engage in active international cooperation, and enhance collaboration between stakeholders in comprehensive, cross-disciplinary research. The changes in the Arctic and their influence on the Earth as a whole must be understood with a comprehensive and wide-ranging perspective, considering the climate, material cycles, biodiversity, and the effects of human activities. It is important to clarify the mechanisms or causes of the changes and to predict the changes occurring in future, and to strengthen comprehensive studies for assessing those socio-economic impacts. On the basis of these research results, it is significant to convey robust scientific information and to appropriately explain the methods and options for problem-solving to stakeholders in Japan and abroad.

At the same time, Japan should move toward establishing observation and research stations strategically in Arctic states, leading international initiatives, and training and supporting young researchers who can be active contributors to international discussions.

○ **Ensuring the Rule of Law and Promoting International Cooperation**

Up to the present, Arctic states have dealt with issues of territorial rights and maritime delimitation peacefully on the basis of international law. It is important to ensure that such actions continue to be based on the rule of law.

The Arctic Ocean and other oceans are subject to international laws, including the United Nations

Convention on the Law of the Sea. Freedom of navigation and other principles of international law must be respected. Especially in the "ice covered areas"<sup>3</sup> of the Arctic Ocean, it is necessary to cooperate with coastal states to ensure appropriate balance between the freedom and safety of navigation and the protection and preservation of the marine environment under the principle of international law.

In recent years, it has become clear that the climate and weather of Japan are being influenced by changes in the Arctic environment. Japan is also interested in topics such as the global environmental protection, sea lanes, and resource development. There is a need for Japan to be involved appropriately in formulating international agreements and rules regarding the Arctic. From this perspective, it is important for Japan to put its scientific knowledge and advanced technology to use in order to make further contributions to the activities of the Arctic Council (AC). It is also important for Japan to participate actively in international forums other than the AC, and to initiate constructive discussions based on its scientific knowledge when necessary.

In parallel with multilateral initiatives, it is also important to develop bilateral discussions and cooperative relationships with Arctic and other states concerned.

#### ○ Arctic Sea Route

If sea ice in the Arctic Ocean continues to decrease and the Arctic Sea Route is to be established along the coasts of Russia and neighboring states, then a voyage between Asia and Europe will become about 40% shorter than a voyage via the Suez Canal. Hence the interest is mounting from the international community in the feasibility of the Arctic Sea Route. Currently, in view of factors such as the sea ice conditions, the use of ports and other infrastructure along the route, and the status of services and regulations of coastal states, the Arctic Sea Route is not ready yet for safe and reliable use. But in view of the importance of diversified transport routes, private sector and the government should work together to give the future potential of this route serious consideration.

As shipping opportunities expand, increasingly active discussions are underway regarding the effect of shipping on the marine environment and on securing the safety of navigation. Japan should participate actively in the international debates regarding the drafting of new rules. It is also important for Japan to put its expertise in science and technology to use in developing effective new technologies to secure the safety of navigation in the Arctic Ocean.

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<sup>3</sup> According to Article 234 of the United Nations Convention on the Law of the Sea, ice-covered areas are "ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance."

○ **Natural Resources Development**

● **Mineral resources**

Although it is surmised that the Arctic Ocean area has a certain potential for undiscovered resources,<sup>4</sup> development in area of extreme cold and sea ice is with difficulties, requiring advanced development technology. Under these circumstances, resources should be addressed steadily over the mid and long term from the viewpoint of continued diversification of resources supplies, considering progress in resources development technology in sea ice regions, cooperative relationships with coastal states, and factors such as needs of private sector.

● **Marine living resources**

With respect to the development of unexploited marine living resources, it is necessary to promote through due cooperation with the coastal states and to secure the need for food security in balanced manner while ensuring the sustainability of the resources based on scientific evidences.

○ **National Security**

There is a risk that factors such as opening of new shipping route and the development of natural resources may become a cause for new friction among states. It is important to prevent moves to strengthen military presence in the region from leading to tension and confrontations. At the same time, while recognizing that these developments may become factors that change the international security environment, not only in the Arctic but for the surrounding states including Japan, it is necessary to pay close attention to moves by the states concerned and also to promote cooperation with the Arctic and other states.

**4 Specific Initiatives**

**(1) Research and Development**

● **Promotion of Arctic research to contribute to policy decision-making and problem-solving**

- Work toward a comprehensive understanding of the environmental changes in the Arctic and their effect on the rest of the globe, assess their socio-economic impact, and convey robust information to stakeholders to enable appropriate decision-making and problem-solving involving the Arctic via strengthened research and projects such as the Arctic Challenge for Sustainability Projects (ArCS), which began in fiscal year 2015.

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<sup>4</sup> According to a survey by the US Geological Survey (2008), estimated resources include 90 billion barrels of petroleum (13% of world total) and 1,670 trillion cubic feet of natural gas (30% of world total).



- **Strengthening observation and analysis systems and developing the most advanced observation instruments**
  - Conduct work to strengthen observations using advanced satellites, observatories stations, and research vessels, which represent Japan's strength, to acquire and analyze scientific data to further clarify the mechanisms of changes in the Arctic environment. In addition, work to develop observations instruments and other equipment which can withstand the harsh Arctic environment in order to enable more advanced observations.
- **Establishment of a research network in Japan**
  - Promote interdisciplinary initiatives and share scientific resources such as satellites, research ships, and computers, toward the solution of Arctic problems by establishing a network of multiple universities and other research organizations.
- **Establishment of research and observation stations in Arctic states**
  - Establish research and observation stations in the United States, Russia, and other Arctic states, and promote closer international cooperation through observations in the Arctic and joint research projects.
- **Data sharing and management**
  - Create a framework for the sharing of data between research organizations and scientists, and participate in international data sharing frameworks to enable more efficient research in the Arctic, where there is a lack of scientific data.
- **Training and supporting researchers**
  - Work to train young scientists, and dispatch young scientists to overseas research organizations and universities to allow Japan's arctic research to continue developing and develop the personnel who are able to play a leading role in international discussions of Arctic issues and their solutions.
- **Arctic research vessel**
  - Consider the design of a research ship for the Arctic as a new international Arctic research platform, with functions to enable participation in international Arctic observation projects using equipment such as autonomous underwater vehicles (AUV).

## **(2) International Cooperation**

- **Active participation in response to global issues regarding the Arctic and formulation process of international rules for the Arctic**
  - Amid growing concern over the impact of environmental changes in the Arctic on the environment of the Earth as a whole, including global warming and climate change,

actively convey the findings of its scientific observations and research, and work toward examining the possibility of enabling a new agenda based on wide-ranging international cooperation.

- The International Maritime Organization (IMO) has developed the "Polar Code", a binding international framework to specify standards for maritime safety in polar seas, protection of the marine environment, and the manning, certification, and training of sea farers. The code is being implemented as amendments to existing treaties, namely the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL) and International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). Continue to be an active participant in the discussions based on opinions from related industries.
- Participate actively in discussions with coastal and other states toward the formulation of rules for preservation and management of fishery resources in high seas of the Arctic Ocean toward sustainable use on a scientific foundation.
- **Further contribution to activities of the Arctic Council**
  - In May 2013, Japan gained observer status in the Arctic Council (AC). Japan will further strengthen its contributions to the work of the council, for example by dispatching experts and government officials to working groups, task forces, and other council meetings. Japan will also examine further contributions that can be made through policy dialogues with the AC chair, member states, and others.
  - From the standpoint of enabling further contributions to the AC, Japan will pay close attention to the discussions of the AC and how the role of observers is being examined within the AC. Japan will participate actively in discussions of expanding the role of observers.
- **Expansion of international and bilateral cooperation with Arctic and other countries**
  - In addition to furthering additional exchanges of opinions with Arctic states, consider initiating bilateral conferences with regard to the Arctic.
  - Promote scientific and technical cooperation on the basis of bilateral scientific and technical cooperation agreements with interested states, including the Arctic states, in polar research and related fields. Strengthen joint international Arctic research via the establishment of research and observation stations in the Arctic states and the dispatch of researchers.
  - Enhance Japan's presence by actively participating in the Arctic Circle, Arctic Frontiers, and other international forums related to the Arctic, to communicate Japan's viewpoint and observation and research results.

**(3) Sustainable Use**

- **Work toward greater involvement of Japanese companies in economic activities in the Arctic**
  - Consider measures to support Japanese companies, for greater awareness of business opportunities in the Arctic and networking with companies and individuals in the business communities of Arctic states, through events such as tours of the Arctic and involvement of Japanese companies in the Arctic Economic Council, which was founded in September 2014.
- **Arctic Sea Route**
  - Identify the natural, technical, systemic, and economic challenges of the Arctic Sea Route, and promote preparation of an environment for its utilization by Japanese shipping companies and others, by constructing systems to support maritime navigation such as a system to predict sea ice distribution and one to forecast weather.
- **Mineral resources**
  - Continue financial support for Greenland Petroleum Exploration Co., Ltd. which is participating in an exploration project in an ocean area northeast of Greenland, via the Japan Oil, Gas, and Metals National Corporation (JOGMEC).
- **Marine living resources**
  - In case marine living resources are developed, cooperate with other interested states, to consider establishment of a conversation and management framework for achieving their sustainable use based on scientific evidences and with consideration of the Arctic environment.