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A Proposal for an International Okhotsk Maritime Regime

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Proposal of a Marine Environment Management Scheme for the Sea of Okhotsk

In a world with diminishing natural resources, arctic and sub-arctic areas have become a region of global importance because of their abundant resources and strategic position. In these areas, operations demand a high level of scientific and technical achievement.[15,16,25] Recent high oil prices have deepened interest of Asian markets in oil and gas production on the Sakhalin shelf.[12] The volume of oil and gas transportation in the Sea of Okhotsk will grow dramatically in a few years, which might cause serious tanker accidents, or more probably, frequent though small spills of pollutants.

The increase in marine access for transport and offshore development requires new international and revised national regulations on marine safety and environmental protection. Workable measures should be taken to increase services such as improved ice charting and forecasting, traffic control and routing measures, strengthening of port-state control ability,

improved facilities for waste disposal on shore and enhanced emergency response systems focusing on oil-in-ice cleaning capabilities. Every regulation should be based on reliable scientific update data. However, scientific data of the Sea of Okhotsk, in particular ecological data seems to be insufficient for clear and responsible regulations.[28] Prior to an international agreement on a marine environment management, an international agreement for scientific study of the Sea of Okhotsk is vital. This will likely be carried out by core members of Japan and Russia on the basis for a long term. Comprehensive studies are also necessary to map environmentally sensitive and important areas. Such studies should be repeated or at least, carried out periodically.

A maritime regime would play a significant role in solving or at least managing the problem in attaining environmentally sound and sustainable development.[31,32] Lacking reliable and satisfactory scientific data on natural and biological conditions, it might be premature to propose a maritime regime in the concrete, but we point out and assert aggressively the absolute and urgent necessity for a maritime regime for the Okhotsk Sea, particularly for sustainable resources development and their transportation in the area.

An Okhotsk marine regime would derive valuable suggestions form the Norwegian environmental measures for the Barents Sea,[22,23,24] the Canadian ice regime,[18,19] the Russian ice certification and the NSR regulations which were studied in the JANSROP II reports.[20,21,30] The IMO's Particularly Sensitive Sea Areas (PSSA) Guidelines[2] are also valuable, as well as a number of papers published on the effectiveness of international environmental regimes analyzing their casual connections and behavioral mechanisms.

For the moment, the proposal of a substantial structure of the Okhotsk regime is out of our scope and excludes legal and jurisdiction issues, which are matters of considerable concern in the regime structure. We simply point out major elements to consider for the regime from the scientific and technological views on the marine environment. Such a proposal might encounter legislative criticism from specialists on international law. We will humbly accepted the comments. Figuratively speaking, to excite such reaction is surely one of the objectives of our regime proposal.

On the Regime Principle

Moral justification, the weakest of four categories of justification, i.e. utilitarian, ecological, aesthetic and moral, has to do with the belief that various aspects of the environment have a right to exist and that it is a moral and therefore social obligation of human beings to many nonhuman organisms, to entire ecosystems and even to inanimate objects.[11,13] The United Nations General Assembly World Charter for Nature, signed in 1982, states that species have a moral right to exist. The analysis of such issues is the province of a new discipline known as environmental ethics. Another major concern of environmental ethics is our obligation to future generations. Sustainability should be defined as ensuring that future generations have equal or more

opportunities to the resources that the earth offers.[14]

The Sea of Okhotsk falls almost entirely under the jurisdiction of the Russian Federation, with the exception of islands of Hokkaido of Japan. The high sea area is totally enclosed by the Russian EEZ. The Sea of Okhotsk and surrounding regions have been relatively undeveloped with very low shipping frequency particularly in the long winter season. Even though overfishing in the area is at the threshold level, Russia and the most of the Far Eat Asian countries have deeply been dependent on the marine products.[30]

However, recent rapid exploitation and development of oil and gas on the continental shelf of the Sakhalin Island have begun to show symptoms of changing the features and threatening the ecosystem of the region, in particular in the coastal zones. In developed countries, to ignore the role of humans and their impact on coastal evolution would be fallacious. Almost all coastal systems have been influenced by human intervention, and the last two centuries of evolution have been dominated by attempts to control the shoreline. Shorelines have significant influence on coastal ecosystem. Coastal resources are now seen as valuable (for tourism, minerals, agriculture, aquaculture, fishery, marine industry, etc.), although it is only since the 1970's that any serious resource conservation has been attempted, and often then on a limited scale. National initiatives are now emerging in various countries, and further efforts are being made in developing countries where most coastal resources are still being depleted. However, it is very difficult to break free of existing administrative structures, and in many places regional and local interests still have over-riding influence. In the Sea of Okhotsk, it is still not too late to prevent such over-riding influence on the shoreline and coastal ecosystem. The proposal for maritime regime should take into account of these natural, social and jurisdictional conditions.

Measures, matters and elements relevant for the protection of marine environment of the Sea of Okhotsk were discussed in several papers[7,8] and especially in detail in Schei's and Brubaker's papers.[23,24] In this paper, we will simply sum up proposals for promoting deeper interest in environmental issues of both governmental and non-governmental decision-makers, for urging them to initiate action on immediate and effective measures, and for linking domestic and international pollution control.

Measures and Matters Relevant for the Protection of Marine Environment of the Sea of Okhotsk

The measures and/or matters relevant for the sustainable development and marine environment protection under an Okhotsk Maritime Regime which should be adopted, or at least thoroughly discussed include the following.[1,3,4,5,7,8,10,17,18,21,22,23]

· further investigation of nature and ecosystem of the area with collaboration between Russia, Japan and other countries.

· establishment of a global international or bi-national cooperation system for environmental protection of the area;

· conclusion of effective regional cooperation agreement for executions of marine environmental protection;

· establishment of a closely linked international monitoring system for marine environment and data centre;

  · a physical-oceanographical monitoring system for marine resources,

  · a marine biological monitoring system(in future),

· responsible fishery management in an international framework;

· reasonable environmental regulations for exploratory and productive drilling;

  · thorough surveys before any drilling,

  · continuous monitoring,

  · drill-mud reinjection and discharge,

  · drill-water discharge,

  · trawl-safe seabed installations,

  · minimizing surface installations,

· use of the same environmental standards by Western oil companies in conjunction with their consortium partners and subcontractors as in their home countries, particularly the E.U. and the U.S.;

· reasonable vessel requirements suitable for the Sea of Okhotsk;

  · structure requirements

  · stopping and maneuverability requirements

  · icing requirements

  · speed limitation guidelines

· bi-national traffic management system based on vessels information and traffic analysis;

  · marine traffic service,

    · optimum routing service with hydrometeorological information,

    · real time ice information service with forecasting,

  · traffic separation schemes,

  · automatic identification system,

  · implementation of routing regime,

  · compulsory pilotage in selected and informed coastal areas,

    · year-round pilotage,

    · seasonal pilotage,

  · mandatory ship's reporting,

· international collaborative search and rescue system;

· international sharing the use of emergency units and facilities;

· preparation of hazardous and sensitive area maps, and guidance based on them;

- unusual features,
    - depth of water,
    - sunken rocks,
    - sea bottom slope,
    - wind and predominant wind direction,
    - waves and swell,
    - ice concentration and features,
    - fog,
- accessibility of rescue station or emergency assistance,
- marine ecosystem,
    - fish hatching zones,
    - peculiar crustacea,
    - marine mammals,
    - marine birds,
- fishery,
    - scientific rationale for studies on marine resources
- aquaculture spots,
- marine protected areas,
    - adoption of protected marine areas; advanced UNCLOS PAs;
- non-anchoring areas and areas to be avoided,
- beach and coastal peculiarity,
- areas which are 'hot spots' where several interests intersect,

· electronic chart display and information system;
· contingency management;
· open and digital display of risk analysis and oil spill contingency assessments;

- safety assessment, risk analysis and presentation of the procedures,
- formulation of and implementing risk control and management,
- oil spill contingency assessments,

· places of refuge and beaching;
· tugboat with fire pump at strategic locations;
· management of oily wastes, hazardous chemicals, sewage and garbage;
· reception facilities of oily waste, hazardous chemicals, sewage and garbage in port facilities;

- fee reductions in port and other incentives to promote facility use,
- speeding-up in processing of waste,
- update facilities information service for waste management,
- promotion of waste recycle,

· management of ballast water and other polluted water on board;
· control of emission of engine-exhaust gas to air, NOx: SOx, suspending particles, etc.;

· control of noise from vessels;
  · noise emission to air,
  · noise emission into water,
· strict control for dumping from vessels;
· loading and unloading guidance to avoid pollution through cargo handling;
· reporting system of ship data, data centre and information service;
· quick and easy inspection system for vessels in ports with instructions by specialists via satellite conversation and information exchange;
· training and certification of crew for operations in ice-infested waters;
· support of the international funds for marine environment protection, including clear and reasonable procedures of indemnity and establishment of a higher tier international indemnity if necessary;
· international or bi-national secretariat for management of marine environment protection;
  · international scientists committee,
  · executing committee,
  · contingency committee,
  · planning section for more effective system for marine environment protection,
  · fund committee
· establishment of a guideline for tourism;
  · certification of agents and tour-guides,
  · protected areas for tourism,
· protection of indigenous peoples' life, society and culture.

Some of these measures should urgently be carried out, while others can be employed through considerable commercial operations and practical experience.

To protect vessels and offshore structures, particularly from damage due to ice, effective and reliable means should be adopted, including those to avoid accidents caused by icing in the Sea of Okhotsk. An urgent issue is additionally to develop and improve response options for dealing with accidental oil spill in ice-covered waters, and to determine the most appropriate strategy for coping with spilled oil in specific ice conditions which vary with the time and place. Successful oil spill response is dependent upon immediate availability of the best clean-up technology. Responding organizations need access to all available responding equipment in a timely manner through multi-national and regional collaborations beyond the jurisdictional borders.

Currently mechanical recovery of spilled oil in pack ice is limited, and new techniques to deflect and separate oil, ice and water should be developed. The use of dispersants for spills in ice has been little considered. In some occasions, icebreakers and ice-strengthened vessels could be useful in creating mixing energy for the longer retention of dispersants in cold water, where a

lack of natural mixing energy exists due to the dampening forces of the ice and increasing of viscosity. Particular attentions should be paid to the following technical issues;

· detection of oil in ice by remote sensing,
· deflection of oil and separation of oil, ice and water,
· transfer of icy, oily waste,
· updating of mechanical recovery, and
· limited use of dispersants with some additional systems.

Legal and Other Elements Relevant for an Okhotsk Maritime Regime

Ship-source marine pollution has attracted special attention for a long time, and international agreements and regulations have been widely accepted by States for reducing and/or diminishing marine pollution accidents. This is probably because shipping is an international industry that could be regulated with globally admitted international rules established and developed through intergovernmental organizations. Current intergovernmental regulations and the background behind their establishments and revisions are certainly useful references for discussion of an Okhotsk regime.

The regime can take some credit for increasing the number of reception facilities available today and for expanding regulations to include accidental oil spills, platforms, and a wide array of other marine and air pollutants from ships. The regime has been most effective when targeting the actions of non state actors in way, that take account of the existing incentives and abilities of governments and corporations. Progress, when it has occurred, has required the coupling of pressures from powerful states with evaluation of previous experience to direct efforts toward successful new policies.

Satisfactory marine environmental protection for the Sea of Okhotsk will necessitate discussion and /or consideration of the following items and elements.[2,6,18,26,27,29]

· the pre-cautionary approach;
· effectiveness and institutional design of international environmental regime;
· legal and normative approach,
· political approach,
· economic approach,
· flexibility of the regime;
· public participation in establishment and management of the regime;
· a high regard for legal experts' suggestions;
· serious attention to the reality, scientific evidence, biological views, and viability;
· conventions, protocols and agreements on marine environment;
· Agenda 21,
· UNCLOS and UNCLOS PA,
· London Dumping Convention

· MARPOL73/78,
· SOLAS,
IMO PSSAs,
· OSPAR Convention,
· NOWPAP,

· national law and regulations governing;
· Draft Russian Federal Law on Northern Sea Route,
· Russian Ice Certification system,
· book of navigation,
· Maritime Law and Relevant Regulations of the Russian Federation,
· Regulations for Navigation on the Seaways of the Northern Sea Route,
· Guide to Navigating through the Northern Sea Route,
· Implementation of the Russian domestic environmental regime,
· Japanese law and regulations for maritime issues,
· Canadian Zone/Dates system,
· flexible table of entry and exit dates,
· Canadian Arctic Ice Regime Shipping System,[29]
· ice numeral system,
· Canadian Arctic Shipping Pollution Prevention Regulations,
· fishery management;[9,17]
· CBD,
· Convention on Fishing and Conservation of the Living Resources of the High Seas,
· CCAMLR,

Concluding Remarks

We would like to humbly accept comments and criticisms to our perhaps somewhat indefinite proposal. However, it be realized that our human society has now become powerful enough to cause unrecoverable damage to our environment on earth. It is difficult to generalize the role of international environmental regimes as forces in domestic laws and regulations. Even sometimes, well-financed private actors have had a capability to avoid international environmental regulations and agreements. Ironically, the occasional serious marine disasters, followed by marine pollution appear to have considerably benefited the marine environment, by providing revisions of international and domestic regulations, by attracting policy-makers' and legislators' attention, and by stimulating pollution control and relevant scientific research. Despite the IMO's guiding principle of 'safer ships and offshore structures in cleaner seas and oceans', which is now replaced by "safe secure and effective shipping on clean oceans", the marine society has indeed been dependent upon disastrous marine accidents to force the revisions of rather weak

agreements and for establishment of more effective regulatory frameworks. We need to cease with such a bad habit in the shipping world, particularly so in the Sea of Okhotsk with an extremely fragile ecological structure.

Careful reviews of the major marine conventions, protocols, and international agreements, the domestic law and regulations in Russia, as well as the current state of hydrocarbon development the region, suggest that it might be rather late to think about and implement a maritime regime for the Okhotsk Sea, although Russian and Canadian experiences clearly show that resources development, shipping experience and environmental regime are a sort of the Trinity which deeply influence one another.

It is a matter of regret that we cannot yet turn them into a unique maritime regime for the Okhotsk Sea. Until governments systematically examine needs and existing responsibilities, such a regime will have to be on the order of the oceans for the twenty-first century.

To make the world a better place, our path towards sustainable development involves an evolution of our values to include human beings within a framework that is socially, politically, economically and environmentally just.

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