

Ocean Management Regimes in the Sea of Japan: Present and Future¹

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ABSTRACT

Warming relations between the nations of Northeast Asia, extended jurisdiction through Exclusive Economic Zones (EEZs), and the coming into force of the Law of the Sea Treaty (UNCLOS) provide an excellent opportunity to build a comprehensive environmental management regime for the Sea of Japan. Although the Sea's environment is relatively pristine, the dumping of nuclear waste and recent oil spills have raised concern among policymakers and the public about its future. Existing regimes which touch upon the Sea include UNCLOS, IMO Conventions, the London Dumping Convention, the Montreal Guidelines, and environmental initiatives in APEC and the Tumen River Area Development Programme. Marine scientific research initiatives include WESTPAC, PICES, and the UNDP/GEF Program. There is also a web of bilateral fisheries arrangements but they are insufficient, fragmented, and outdated. The above set of regimes and arrangements is constrained by several problems—redundancies, insufficient knowledge and awareness, differing national perspectives and priorities, and institutional inadequacies. A comprehensive marine environmental management regime would address these problems and embody an increased sharing of both the capacity and responsibility for managing the Sea's environment. Japan and the United States can play a role in developing such a comprehensive regime.

TABLE OF CONTENTS

1. Political and Natural Setting	1
2. Existing Regimes.....	2
2.1. United Nations Convention on the Law of the Sea (UNCLOS)	2
2.2. International Maritime Organization (IMO)	3
2.3. London Dumping Convention (LDC)	4
2.4. Montreal Guidelines on Land-Based Marine Pollution	4
2.5. APEC	4
2.6. The North-West Pacific Region Action Plan (NOWPAP)	5
2.7. Tumen River Area Development Programme (TRADP)	11
2.8. Marine Scientific Research	13
2.9. Working Group for the Western Pacific (WESTPAC)	13
2.10. North Pacific Marine Science Organization (PICES)	13
2.11. UNDP/GEF Program on Prevention and Management of Marine Pollution in East Asian Seas	13
2.12. Other Initiatives	14
2.13. Fisheries	14
3. Problems and Inadequacies of Existing Regimes	16
3.1. Redundancy	16
3.2. Insufficient Knowledge and Awareness	17
3.3. Different National Perspectives	17
3.4. Institutional Inadequacies	19
4. Japan, the US, and a Regional Marine Environmental Protection Regime.....	21
Endnotes.....	27

1. Political and Natural Setting

The countries included in this analysis are the four countries which border the Sea of Japan (referred to in this document as “the Sea”)—the Democratic People's Republic of Korea (DPRK or North Korea), Japan, the Republic of Korea (ROK or South Korea), and the Russian Federation, as well as China by virtue of the Tumen River whose watershed encompasses Chinese territory and which may provide China access to the Sea.

For millennia, the Sea of Japan (or East Sea as it is referred to in the Koreas) has served as a conduit for the flow of culture, people, and goods between the Asian mainland and Japan. However, during much of this century, relations between most of the region's countries have been constrained by significant political and ideological differences. As a consequence, the Sea was a site of tension and potential conflict, and development of the coastal portions of all countries bordering the Sea lagged behind development of the opposite coasts of the above four countries.

We are currently witnessing, though, a transformation of the political system in the region. As survival has ceased to be the prime concern of powerful Northeast Asian states, their quest for relative gains has become less driven and consistent. Most governments are now more oriented towards maximizing wealth than controlling territory. Because of development of political multipolarity and the abandonment of Stalinist economic models, economic relationships have begun to develop a more “natural” pattern. These economic relations have tended to concentrate in those boundary areas where the economies of adjacent regions obviously complement each other, and comprise “natural economic territories” (NETs)—southern China, the Yellow Sea Rim, the Tumen River area, and the Sea Rim.

In this context, the use of the Sea's resources could stimulate economic growth along its coasts and thus help to reduce the internal economic gap in each country. Extension of coastal state jurisdiction over maritime resources and activities has encompassed the entire Sea and there are several areas where claims overlap. Given these overlapping claims and the transboundary nature of the ocean's resources, co-operation in their management is essential. Indeed, opening a new chapter in cooperative use of the Sea's resources and environment may help fulfil for the DPRK, Japan, the ROK, and Russia the promise of the Pacific Age and turn this Sea from a zone of conflict and isolation into a zone of peace and prosperity.

Because of its importance, shared benefits and costs, and relative low political sensitivity, co-operative management of environmental quality would be a good place to start. The coastal rim of the Sea is relatively free of pollution although there are significant exceptions such as mercury off Niigata, and oil and heavy metals in Peter the Great Bay. Recent revelations of dumping of nuclear materials and chemical munitions in the Sea by the former Soviet Union and the large oil spill from the Russian tanker *Nakhodka* have raised concern for the Sea's environment. South Korea and Japan have both established and used dump sites in areas of uncertain or overlapping jurisdiction in the Sea. Agreement on dump sites and cooperative monitoring thereof is advisable. If tourism and marketable fish catch are to be sustained, the Sea must be kept clean from both land- and sea-based sources. Indeed, the relative pristine nature of the Sea—an ironic beneficial by-product of the ideological Cold War—may be short-lived. As visionaries and industry eye the

possibility of a Sea Natural Economic Territory,² it is becoming more urgent to put a process or infrastructure in place to manage the Sea's environment and living resources.

There is little information on fish catch and the status of stocks in the western part of the Sea. The North Korean catch may be very high—almost as high as that of Japan, which is about 2.5 million tons. Total production increased from about 9 million tons in 1982 to 12 million tons in 1985. Most conventional species are fully exploited but the total catch might be increased to about 13 million tons. The species composition of the catch has changed over time. This may be due in part to use of different fishing gear but it probably also implies changes in the ecosystem for both demersal and pelagic fish. Coastal fisheries stocks are in reasonable shape but there is specific concern about the stocks of flying fish, Pacific herring, sandfish, halibut, Alaska pollack, and Japanese sardine. Exchange of information and cooperation in fisheries research and management is necessary and urgent.

The regions of greatest possible conflict between living resources and shipping are in the relatively narrow Korea Strait, where there are major routes into the Korean ports of Pusan and Ulsan and cross-strait traffic between the Korean ports and the entrance to the Inland Sea. The Korea Strait also harbors two whale calving areas and spawning areas for both demersal and pelagic fish. Only two other minor routes (from the Korea Strait to Nakhodka and to the Tsugaru Strait) might interfere with calving or spawning. Otherwise, the Sea has been remarkably free of serious interference by shipping. But this will change as trade expands among the formerly estranged Sea countries.

2. Existing Regimes

2.1. United Nations Convention on the Law of the Sea (UNCLOS)

The United Nations Convention on the Law of the Sea, or simply, Law of the Sea, creates an international umbrella framework for developing coherent national marine pollution policies.³ Indeed, it is generally accepted that Part XII of UNCLOS—Protection and Preservation of the Marine Environment—is the strongest and most comprehensive global agreement ever negotiated on the marine environment. It is of major significance for at least two reasons. First, it provides that all states have a general obligation to protect and preserve the marine environment, as well as a duty to enforce international regulations to protect the marine environment from all sources of pollution. Second, it places parties to the Convention under an obligation to enforce generally accepted international rules and standards established in other maritime conventions, such as those negotiated under the auspices of the International Maritime Organization (IMO), even if they are not parties to such conventions. Section One of Part XII obligates nations to take all necessary measures consistent with the Convention to prevent, reduce, and control pollution of the marine environment from any source. This obligation is complemented by Section Five's call for the enactment of national legislation and regulations controlling specific sources: land-based, dumping, vessels, and seabed activity. Enforcement of marine pollution laws is dealt with in Section Six, which stipulates that coastal states are to enforce their land-based pollution laws against their own polluters. Moreover, coastal states have a responsibility to protect their marine environment out to the boundary of their Exclusive Economic Zones (EEZs), which can extend up to 200 nautical miles (nm) from baselines.

UNCLOS also provides a framework for countries wishing to build cooperative marine environmental protection regimes. For example, it calls on states bordering semi-enclosed seas to harmonize their policies regarding protection of the marine environment. The countries around the Sea have similar wastes and, other than Japan, a similar level of technology for disposing of the wastes. Theoretically, they might adopt similar or uniform standards. The fact that they do not reflects both a lack of communication and real differences in national priorities for environmental protection in general, and for specific pollutants and pollutant sources in particular (Tables 1 and 2). Although they all have both effluent standards and water quality standards, they differ widely in strictness. For example, Russia's water quality and effluent standards are, on paper, generally much stricter than those of its neighbors. China's water quality standards are the most relaxed. Of course, enforcement of these standards is another matter, and other than in Japan, is generally quite lax. Moreover, they regulate different substances and use different policy instruments. Such differences are consistent with the Convention, since it provides that states "shall use the best practicable means at their disposal and within their capabilities to prevent, reduce and control pollution."⁴ However, it is expected that countries with strong environmental standards will try to encourage other countries to adopt similar standards in order to reduce any competitive disadvantage to their own industries.⁵

Now that UNCLOS is in force, the region's countries must decide how to adjust their national initiatives to be compatible with emerging international legal and technical obligations or, conversely, the extent to which each state wishes to ignore or deviate from international practice. For example, there is a basic need to draft national regulations that reflect and incorporate the vaguely defined intent of UNCLOS Articles 192 and 194. These articles charge states with the "duty to protect and preserve the environment" and obligate them "to take all measures necessary to prevent, reduce, and control marine pollution and to ensure that activities under their jurisdiction or control do not cause pollution damage to other states or otherwise spread beyond the seas where they exercise sovereign rights."⁶ Yet, there are no agreed upon scientific criteria to determine the precise meaning of such terms as "prevent, reduce, and control." It is also difficult to determine how to justify and enforce legal prescriptions, given the limitations of scientific and technical knowledge. There is a large gap between acceptance of a vaguely defined legal framework, which moves from "obligations of responsibility" to "obligations of regulation and control," and the willingness and ability of states to establish and enforce standards and rules.

2.2. International Maritime Organization (IMO)

Regional law drafting and policy development for the Sea is quite limited and is mainly a response to the IMO of which all Sea governments are members, and to Law of the Sea-related initiatives. Even then, the extent and level of participation and implementation reflects varied domestic interests and priorities. Thirteen IMO treaties focus specifically on pollution prevention from ships (Table 3). Russia and Japan have subscribed to the most pollution treaties, ten and eight, respectively. China has ratified five treaties. South Korea has ratified only two treaties—the original Civil Liability Convention and the Convention for the Prevention of Pollution from Ships. North Korea has acceded to Annexes 3, 4, and 5 of the Prevention Convention, and all but South Korea have signed the Civil Liability Convention. Only Russia has joined the 1973 Intervention Convention. All six have acceded to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78).

2.3. London Dumping Convention (LDC)

China, Japan, and Russia are parties to the 1972 LDC. North Korea and South Korea are not members. LDC members have an obligation to report ocean-dumping permit activity so that all concerned countries are aware of the kind and quantity of wastes that enter their shared waters. The signatories approved permanent total bans on toxic industrial waste disposal at sea beginning in 1996. The ban would include export of waste to nonsignatory countries for ultimate disposal at sea and the burning of waste at sea. In the 1993 vote banning disposal at sea of all nuclear wastes, both China and Russia abstained,⁷ although China subsequently declared it would adhere to the ban.⁸ Japan has said it will continue to dump industrial waste at sea⁹ because a ban would severely impact Japanese industry which is the largest marine dumper in the world at 4.5 million tons per year in the Pacific Ocean and the Sea.

2.4. Montreal Guidelines on Land-Based Marine Pollution

UNEP experts fashioned the Montreal Guidelines on land-based marine pollution (LBMP) in 1985 to help integrate the regional harmony called for in UNCLOS and the responsibility to prevent transnational pollution.¹⁰ The Guidelines' purpose is to serve as a checklist for regional conventions and national legislation. When viewed as a checklist, the heart of the Guidelines lies in Guideline no. 13 on the development of control strategies and no. 16 on adoption of national laws and procedures. Although the body of the Guidelines appears softened by compromise, the scientific recommendations contained in its annexes bolster its credibility. Despite its weaknesses, the Montreal Guidelines could be helpful to the nations of the Sea, which have yet to reach a regional agreement and which continue to look for guidance in refining their land-based marine pollution laws and regulations.

2.5. APEC

The Asia Pacific Economic Cooperation Forum (APEC) environment ministers met in Vancouver in March 1994 to discuss a regional environmental strategy. Marine pollution was among the topics discussed.¹¹ The ministers issued two documents. The first was the APEC Environmental Vision Statement, which urges among other things, that the APEC Senior Officials develop multi-sectoral exchanges at the regional level, including the exploration of an Asia Pacific Round Table on the Environment and the Economy. The second was a Framework of Principles for Integrating Economy and Environment in APEC, including sustainable development, internationalization of environmental costs, fostering of science and research, technology transfer, application of the precautionary approach, mutually supportive trade and environmental policies, environmental education and information to the public, financing for sustainable development, and the role of APEC. Marine-oriented environmental initiatives and objectives of APEC's working groups include technical exchange on red tide/toxic algae; compilation of national reports on land-based sources of pollution, coastal zone management policies, and responsible national agencies; and coordination and networking with other organizations in the APEC region to pursue the UNCED Oceans chapter recommendations.

2.6. The North-West Pacific Region Action Plan (NOWPAP)

Of the several ongoing multilateral cooperative efforts focused on or including marine environmental protection, the most advanced is the United Nations Environment Programme (UNEP)'s NOWPAP as part of UNEP's Regional Seas Programme.¹² However, implementation is lagging well behind expectations. Globally, the UNEP has almost two decades of experience. Its Programme presently encompasses 13 regional seas and involves the participation of some 140 coastal countries and island states and territories. Nine 'action plans' are operational. Nine conventions and twenty eight protocols have been signed and seven conventions are in force.

The substantive aspect of any regional programme is outlined in an 'action plan' which is formally adopted by an intergovernmental meeting of the Governments of a particular region before the programme becomes operational. In the preparatory phase leading to the adoption of the action plan, governments are consulted through a series of meetings and missions about the scope and substance of an action plan suitable for the region. In addition, reviews on the specific environmental problems of the region are prepared with the cooperation of appropriate global and regional organizations to assist the governments in identifying the most urgent problems in the region and to set priorities for the activities outlined in the action plan. UNEP coordinates the process leading to the adoption of the action plan directly, or in some regions, indirectly through existing regional organizations.

All action plans have similar structures, although the specific activities for a particular region are dependent upon the needs and priorities of that region. An action plan usually includes the following components:

- (a) *Environmental assessment.* This involves the assessment and evaluation of the causes of environmental problems as well as their magnitude and impact on the region. Emphasis is given to such activities as baseline studies; research and monitoring of the sources, levels and effects of marine pollutants; ecosystem studies; studies of coastal and marine activities and social and economic factors that may influence, or may be influenced by, environmental degradation; and the survey of national environmental legislation. Environmental assessment is undertaken to assist national policy makers to manage their natural resources in a more effective and sustainable manner and to provide information on the effectiveness of legal/administrative measures taken to improve the quality of the environment.
- (b) *Environmental management.* Each regional programme includes a wide range of environmental management activities. Examples of such activities are: cooperative regional projects on training in environmental impact assessment; management of coastal lagoons, estuaries and mangrove ecosystems; control of industrial, agricultural and domestic wastes; and formulation of contingency plans for dealing with pollution emergencies.
- (c) *Environmental legislation.* An umbrella regional convention, elaborated by specific technical protocols, most often provides the legal framework for cooperative regional and national actions. This is particularly important because the legal commitment of governments clearly expresses their political will to manage individually and jointly their common environmental problems.

- (d) *Institutional arrangements.* When adopting an action plan, governments agree on an organization to act as the permanent or interim secretariat of the action plan. Governments also are expected to decide on the periodicity of intergovernmental meetings to review the progress of the agreed workplan and to approve new activities and necessary budgetary support.
- (e) *Financial arrangements.* UNEP, together with selected United Nations and other organizations, provide 'seed money' or catalytic financing in the early stages of regional programmes. However, as a programme develops, it is expected that the governments of the region will progressively assume full financial responsibility. Government financing is usually channelled through special regional trust funds to which governments make annual contributions. These funds are administered by the organization responsible for the secretariat functions of the action plan. In addition, governments contribute by supporting their national institutions participating in the programme or by financing specific project activities.

China, South Korea, and Russia would like to see some form of regional cooperation in combating marine pollution problems. Originally, Japan supported the idea of NOWPAP in principle but felt that there was not a consensus on the issue and that the lack of diplomatic relations between some of the countries would prevent such a consensus. It probably was also leery of having to provide the bulk of the financial support. However, Japan did support an initial meeting of experts in the region to discuss common problems, as a first step toward attaining a consensus for such a program.¹³ Apparently UNEP itself was reluctant to act until all the relevant countries asked UNEP to initiate such a program. Moreover, it seemed that the UNEP Oceans and Coastal Areas Programme (OCA/PAC) was not fully supportive of the concept because of the continuing uncertainty regarding the stability of Russia and its effects on political relations in the region, as well as the fact that Japan and South Korea are developed countries and should not need UNEP's help.

Nevertheless, at the Fifteenth Session of the UNEP Governing Council, held in Nairobi from 15 to 26 May 1989, the states of the North-West Pacific officially indicated that UNEP assistance would be welcome in resolving regional marine pollution problems.¹⁴ Consequently, the UNEP Governing Council (Decision 15/1, Nairobi, 15-26 May 1989) called for the preparation of new action plans for the seas not yet covered by the Regional Seas Programme. The North-West Pacific region was specifically mentioned in the Decision as the region for which an action plan should be prepared. As a follow-up to this Decision a letter from the Assistant Executive Director was sent to UNEP Focal Points in China, Japan, North Korea, South Korea and the then USSR to explore their Governments' interests in the development of a regional action plan for the protection and development of the marine and coastal environment of the North-West Pacific. Positive reactions to UNEP's involvement in the development of NOWPAP were received from all involved countries.

Next, the Oceans and Coastal Areas Programme Activity Centre of UNEP convened an informal meeting on NOWPAP (Nairobi, 29 May 1991). Representatives of China, North Korea, Japan, South Korea and the then USSR participated in this meeting. Different views on the geographical coverage and scope of the Action Plan indicated that further consultation among countries was necessary at this early stage. A consultative meeting was thus convened to consider the

geographical coverage of the Action Plan, and to formulate a workplan and timetable for its development. This meeting was held in Vladivostok, Russia from 26 to 31 October 1991. The participants agreed on the workplan and the timetable for the development of the Action Plan as well as on the contents of national reports which should be submitted to UNEP. However, the geographical coverage of the Action Plan remained controversial. The majority considered that the Action Plan should initially cover the marine environment and the coastal areas of the Sea of Japan and the Yellow Sea without prejudice to its possible future extension to the East China Sea. On the other hand, the view was expressed that the geographical coverage of the Action Plan should be considered and defined on the basis of further deliberations, including the possible content of such an Action Plan. North Korea did not participate in the first meeting. However as a result of UNEP's entreaties, the General Bureau of Environment Protection and Land Administration of the DPRK was nominated as the National Focal Point for the development of NOWPAP.

Establishment of the following structures were suggested in the national reports submitted to UNEP:

- A regional coordinating center (China);
- A regional center on the monitoring and assessment of the state of marine environment (Russia);
- A regional center for information and data exchange (South Korea);
- A permanent task-force or group of experts from the riparian countries (China and South Korea).

The participants agreed that National Focal Points henceforth would prepare national reports for future meetings which would cover the status of the marine environment and coastal areas; national policies and measures to deal with marine pollution; and proposals for steps to be taken in a Regional Action Plan. They noted that regional cooperation in response to a pollution emergency would be appropriate for joint activities in the future.

A second meeting of National Focal Points was convened by UNEP in Beijing, 26 to 31 October 1992 to consider the regional overview and a draft Action Plan prepared by UNEP. National reports were to be prepared by the National Focal Points and submitted to UNEP. The following information was to be included in the national reports:

- (1) the present state of the marine and coastal environment;
- (2) national policies, measures, and relevant activities dealing with marine pollution problems;
- (3) proposals on ways and means to resolve the differences regarding the contents of the Action Plan.

However, not all objectives were met. China, South Korea, and Russia submitted their reports to UNEP. Although North Korea was represented for the first time, it did not submit a useful report. The National Focal Point of Japan submitted only the first two parts to its national report, but not the last part related to proposals on ways and means to resolve the problems. Japan also insisted that the section of the Action Plan on Biodiversity and Ecological Resources be deleted except for the material on wetland reserves and genetic resources. Although IMO was invited to present a

document on “Legal implications of international conventions and a review of possible mechanisms for regional cooperation in combating marine pollution especially in the case of pollution emergencies,” it declined to prepare the document.

The Third Meeting of Experts and National Focal Points on Development of the NOWPAP was held in Bangkok in October 1993.¹⁵ The overall goal of the NOWPAP is “the wise use, development and management of the coastal and marine environment so as to obtain the utmost long-term benefits for the human populations of the region, while protecting human health, ecological integrity and the region's sustainability for future generations.” Subsidiary and complementary goals include:

- the control, halting and prevention of any further degradation and deterioration of the coastal and marine environment and its resources;
- the recovery and rehabilitation of coastal and marine environments that have been degraded and which still have the potential for such a recovery; and
- the long term sustainability of coastal and marine environmental quality and resources as assets for the present and future human populations of the region.

Objectives include monitoring and assessment of the state of the regional marine environment; creation of an efficient and effective information base; integrated coastal area planning; integrated coastal area management; and establishment of a collaborative and cooperative legal framework. More specifically, the objectives are:

- (1) To assess regional marine environmental conditions by coordinating and integrating monitoring and data gathering systems on a regional basis, making the best use of the expertise and facilities available within the region on a consistent and collective basis;
- (2) To collate and record environmental data and information to form a comprehensive database and information management system which will serve as a repository of all relevant, available data, act as the sound basis for decision-making, and serve as a source of information and education for specialists, administrators, and others;
- (3) To develop and adopt a harmonious approach towards coastal and marine environmental planning on an integrated basis, and in a pre-emptive, predictive and precautionary manner;
- (4) To develop and adopt a harmonious approach towards the integrated management of the coastal and marine environment and its resources, in a manner which combines protection, restoration, conservation and sustainable use;
- (5) To develop and adopt a regional framework of legislative and other agreements for mutual support in emergencies, collaboration in the management of contiguous bodies of water, and cooperation in the protection of common resources as well as in the prevention of coastal and marine pollution.

UNEP was to provide US\$417,000 for 1994-1995 to cover costs of the secretariat and the implementation of the Action Plan. The first projects have been approved for implementation. They include in order of priority: (1) establishment of a comprehensive data base and information management system; (2) survey of national environmental legislation, objectives, strategies and policies; (3) establishment of a collaborative, regional monitoring program; (4) development of

effective measures for regional cooperation in marine pollution preparedness and response; and (5) commencing the establishment of regional activity centers and their networks. A NOWPAP Intergovernmental Forum is to be established to provide policy guidance and decisionmaking for the Action Plan and will include representatives of relevant regional and international organizations. The NOWPAP states will continue to work towards the development of a regional convention for the protection and management of the coastal and marine environment and resources. A Regional Coordinating Unit (RCU) will be established with the assistance of UNEP to ensure the integrated and managed execution from within the region of Action Plan projects. Until the RCU is established, UNEP will coordinate projects and prepare a program based on regional government priorities. And most important to the implementation of the Plan, the regional governments must adopt it and agree to establish a NOWPAP Trust Fund to finance its implementation. The first Inter-Governmental meeting was held in Seoul in September 1994. This meeting was considered critical both for continued progress on the Action Plan as well as regional cooperation in general. The fact that North Korea did not attend was a disappointment for UNEP. In addition to setting project priorities for 1994-1996, the meeting selected Japan to host the second NOWPAP Intergovernmental Meeting in 1996 and decided to implement a trust fund as soon as it exceeds US\$50,000.¹⁶

NOWPAP faces many problems. Some parties are uncomfortable with the definition of the region for cooperation. The present compromise definition is the Yellow Sea and the Sea of Japan with provision for including adjacent areas in the future. This excludes Taiwan and the China/Taiwan problem. But the Sea of Japan and the Yellow Sea are quite different areas and have different problems. Moreover, South Korea and China prefer to focus initially on the Yellow Sea where they have already initiated a cooperative project. Japan is more interested in work in the Sea of Japan where some cooperation is ongoing because of the Russian dumping of nuclear waste there. Different names are used for the seas by different countries underscoring the political difficulties for cooperative work.

There is still some disagreement regarding priorities of projects for cooperation. The present compromise is (1) regional assessment, (2) establishment of a data base, (3) monitoring, and (4) cooperation in emergencies. The differences in country priorities reflect different levels of economic development. China, North Korea, and Russia all welcome monitoring, but Japan is not as interested because this is already well established in Japan.

Prevention of disposal of radioactive waste at sea was added as a NOWPAP task although Japan expressed reservations, presumably because it wishes to maintain the option of discharging such waste into the sea. There are also differences regarding the means of implementation of the projects. For example, Russia proposed the use of a Russian ship and this was agreed to by North Korea, but Japan and China were not interested in financing it. Another alternative is to use work already done or being done by the coastal states to develop a standard method. Japan and China support this approach. But South Korea is more interested in a contingency plan for emergencies particularly for the Yellow Sea.

Harmonization of legislation and the ultimate goal of a regional convention also present technical and political problems. The coastal nations have different levels of economic development and different discharge standards. China emphasizes its industrial development rather than pollution

control and North Korea is reluctant to participate and thereby reveal the state of its environment. Moreover, the industrial structure and technology is different from country to country, as is the preferred use of maritime areas. And even if the water quality and discharge standards were to be made similar, enforcement standards would differ widely. For example in China, the concentration is strictly controlled but not the total amount discharged. Japan would have difficulty signing a formal convention, presumably because of its lack of relations with Russia and North Korea, and because it feels that the Plan implies that its adoption may obligate it to ratify all relevant international agreements. Thus Japan wants to separate the international legal agreement from the rest, and to make the regime *ad hoc*. However, North Korea strongly suggested that such excuses should not be accepted as a means to avoid full participation in NOWPAP.

There is also disagreement over the all-important allocation of costs. Japan's Environment Agency does not have significant money to fund the program and thus funds would have to come from the Ministries of Finance (MoF) and Foreign Affairs (MFA). Japan could dispense such money as part of its ODA but Japan does not consider Russia a developing country, and it does not have political relations with North Korea. Thus the MoF and MFA do not want to send representatives to UNEP meetings because they do not want to be embarrassed by requests for money. Moreover from Japan's own point of view, Japanese have little expertise in foreign countries, do not generally speak foreign languages, and are familiar only with the problems of an advanced country. Alternative models for allocation of costs are (1) an equal division—which is not feasible for China, Russia and North Korea; (2) proportional to the UN scale; and (3) most borne by Japan and South Korea. The latter option is complicated by some rivalry between Japan and South Korea regarding leadership and financial support of the regime. Japan wants to lead the initiative but South Korea feels it should be led by North and South Korea because of their geographic location bordering both seas.

UNEP's entire Regional Seas Programme approach has been criticized—in general, and with specifics. Some argue that the entire Programme needs a new perspective and restructuring.¹⁷ It is linked to only one sector—prevention and control of marine pollution. However, some critics believe protection of the marine environment should be addressed in holistic terms requiring an intersectoral approach and new leadership at the national and local levels. The Programme has only infrequently yielded results of immediate practical value to decisionmakers. Action plans have been less successful where the scientific capability was not present or scientists lacked access to their government's decision-making processes. Indeed after withdrawal of UNEP support, a region's momentum persists only in those regions with a strong indigenous scientific capability and network. And in the Mediterranean, discrete networks of scientists interacted independently of one another, neither exchanging information nor coordinating their actions; environmental assessments were thus conducted in a vacuum.

The approach generally caters only to environmental elites—the environmental ministries/agencies, academics and NGOs. Thus it needs to involve the private sector, unions and the general public and to address ministries responsible for activities which generate pollution—e.g., energy, tourism, port authorities, public works, and agriculture. Its regional conventions have rarely led to the desired national legislation and decision making. Indeed, a general malaise follows the withdrawal of UNEP support. Governments take several years to regularize their allocations to the trust funds, support fades in terms of attendance at meetings, financial

contributions and level of activity. Institutional arrangements thus face enormous problems. Traditionally, there has been great competition and duplication of effort among the UN specialized agencies dealing with oceans. And financial support has not reached the expected level or degree of autonomy to meet the present and projected needs. Basically, the Programme was structured during the Cold War and it needs to be restructured based on new political and economic realities.

Nevertheless, the regional seas programs have made some advances. They have educated regional elites to the need for more comprehensive regional environmental policy. They have created or extended domestic constituencies for environmental protection. They have contributed to the body of international environmental law. They have enhanced the knowledge of the quality of regional seas. And they have transferred marine science technology and knowledge to many developing countries and thus increased their capacity and confidence to participate in regional marine environmental protection regimes. It is this latter achievement that is likely to be most significant and long lasting.

2.7. Tumen River Area Development Programme (TRADP)

The environmental component of the United Nations Development Programme (UNDP)'s TRADP is perhaps the most advanced of the several regional environmental activities, and may establish important legal and political precedents that will influence other regional environmental agreements. The original concept behind TRADP was to use Japanese and South Korean capital and technology and Chinese and North Korean labor to process Russian, Mongolian, and Chinese resources—timber, minerals, fish, and agricultural products. This mammoth undertaking would involve heavily polluting industries, for instance industries which preprocess minerals and timber using coal-fired energy. If the project hopes to receive seed financing from the Asian Development Bank (ADB) or the World Bank, it must undertake extensive environmental impact assessments and be designed to mitigate significant impacts.

Already, pollution from industrial waste, sewage, and erosion has led to the destruction of most life forms in parts of the lower Tumen River.¹⁸ Various pollution impacts on industry, agriculture, and domestic water supplies have also been recorded in the Tumen River basin over the past two decades. Unfortunately, the warm Korean Current that flows north along the coast and into Posiet Bay has the potential to carry pollution from areas in the south, including from Rajin-Sonbong in DPRK and the Tumen River. Air pollution is also a problem in the Chinese part of the Tumen River catchment, with national standards for total suspended particulates being exceeded for most of the year. There are serious marine pollution problems in parts of the Vladivostok-Nakhodka area which are caused by industrial wastes, sewage, hydrocarbons, and sediment. Local administrations do not have an integrated approach to natural resource management. This arises from lack of appropriately trained staff, low levels of coordination and communication, and extremely low levels of funding. More attention must be paid to the impact of Tumen River pollution on wetlands and the potential impact of development projects. The scarcity of good quality water is a major constraint to regional economic development.

Another environmental problem in the Tumen River area is the threat of an oil spill along the coast. Oil shipments to or from Sonbong, Vladivostok, Nakhodka, and other ports in the region

run the risk of a major spill, which would be extremely serious for the ecology and marine fisheries. The wetlands serve as one of the most important staging sites on the East Asian/Australasian Flyway. Furthermore, there are two marine reserves off the Primosky coast and hundreds of thousands of birds breed or over-winter along the entire coast of the Khasan District in Primosky Territory. An emergency response system in the event of an oil spill is urgently needed.

For the purpose of attaining environmentally sound and sustainable development of the Tumen River area, and its northeast Asian hinterlands, members of the Tumen Consultative Commission signed a Memorandum of Understanding on Environmental Principles Governing the Tumen River Economic Development Area and Northeast Asia (MOU) in New York in 1995.

In the MOU, the member countries affirmed their intention to cooperate and coordinate with each other to protect the environment of the region, and more specifically they agreed:

- to undertake joint efforts in environmental data collection and analysis;
- to conduct joint regional environmental assessments evaluating the planned development of the area;
- to prepare a regional "Environment Mitigation and Management Plan" for Preventing Harm to the Environment;
- to cooperate in legal and institutional arrangements; and
- to conduct project-specific environmental impact assessment for any proposed development project in the region with potentially significant environmental impacts.

Since the signing of the MOU in December 1995, however, relatively little progress has been made in realizing the agreed goals and principles. While a Tumen Environmental Protection Working Group has been established, the main focus to date has been preparation of a submission to the Global Environmental Fund (GEF). The submission proposes development of a Strategic Action Programme (SAP) at a cost of approximately US \$5.5 million over a two year period. In accordance with the objectives of the GEF, the SAP will address global concerns in two fields: international waters and biodiversity. That is, it will address concerns incremental to or beyond what would normally be considered the responsibility of national governments.

With respect to the environment, there are three main areas for regional cooperation among TRADP Members:

- 1) cross-border environmental problems that create externalities or costs for neighboring countries, and that can only be solved by cooperation among the countries involved;
- 2) cross-border environmental assets that can only be protected by cooperation among the countries that share the asset, such as fish stocks; and
- 3) the common needs of the TRADP Members that may be more effectively met by joint action, such as common training needs.

2.8. Marine Scientific Research

Prospects for improved transnational cooperation may depend on better understanding of the impacts of pollution by both policymakers and the public. Monitoring and research would provide this critical information. And effective study of transboundary contamination requires a high level of cooperation and synoptic sampling to enable integration of data across the region.

2.9. Working Group for the Western Pacific (WESTPAC)

All Sea countries are members of the 10-nation WESTPAC which was established by UNESCO at its Tenth Assembly in 1977 to plan and coordinate multilateral ocean science programs. WESTPAC has focused on intercalibration exercises, with the collaboration of the Global Investigation of Pollution in the Marine Environment (GIPME) and the International Oceanographic Commission (IOC) Group of Experts on Methods, Standards, and Intercalibration (GEMSI).

The goals of WESTPAC are:

- define regional problems and develop marine scientific research programs
- implement IOC global marine scientific research programs at a regional level
- facilitate the regional exchange of scientific data, especially to developing countries.

To achieve its general objectives, WESTPAC identified nine projects at its meeting in Hangzhou, China in February 1990, and adopted a Medium Term Plan (1991-1995). These nine projects were: Ocean Science in Relation to Living Resources; Marine Pollution Research and Monitoring Ocean Dynamics and Climate; and Ocean Science in relation to Non-Living Resources.

Progress has been slow and sporadic. The organization involves scientists only and some mutual suspicion still hinders data sharing. No real multilateral cooperative scientific effort has yet been undertaken which simultaneously involves all Sea countries.

2.10. North Pacific Marine Science Organization (PICES)

This organization has goals, objectives, interests, and scientific projects similar to some of those of WESTPAC and NOWPAP.¹⁹ These include data and information exchange, common assessment methodology for marine pollution, marine pollution monitoring techniques (e.g., mussel watch, sediment monitoring), land-based sources of pollution, fluxes and their impacts on the marine environment, cross-boundary transportation of contaminants from the Northwest Pacific region to the open ocean, intercalibration exercises and development of environmental criteria and standards. PICES/Marine Environment Quality Scientific Committee will focus on algal blooms and priority chemical and biological contaminants in the whole North Pacific region.

2.11. UNDP/GEF Program on Prevention and Management of Marine Pollution in East Asian Seas²⁰

In response to a number of requests from East Asian nations regarding management of the marine environment, the United Nations Development Programme, Regional Bureau for Asia and Pacific,

Regional Programme Division with support provided from the pilot phase of the Global Environment Facility developed a program entitled Prevention and Management of Marine Pollution in East Asian Seas. The countries included in this regional program are ASEAN (Burma, the Philippines, Malaysia, Indonesia, Brunei Darussalam, Singapore, Thailand, and Vietnam), Cambodia, China, and North Korea. The initial approved budget was US\$8 million with an additional cost sharing contribution from the Government of Australia of A\$5 million.

The long-term objective of the program is to support the efforts of the participating Governments in the prevention, control and management of marine pollution, at both the national and regional levels, on a long-term and self-reliant basis. The program concept includes four main project areas, defined by the following objectives:

- 1) to assist in the prevention, control and management of marine pollution problems through proper assessment of the state of marine pollution, including the effects of marine, coastal, and other land-based activities on biodiversity and environmental quality;
- 2) to assist in the development of policies, plans, and programs on prevention, control, and management of marine pollution including measures for their support and implementation at both the national and subregional levels;
- 3) to strengthen national and subregional institutional infrastructures and implementing mechanisms, and upgrade technical skills and management capabilities on prevention/control of pollution, management, and enhancement of the marine environment; and
- 4) to establish appropriate financial arrangements and/or mechanisms for the long-term sustainability and self-reliance of national and subregional efforts at protection of the marine environments.

North Korea subscribes to the objectives of this Program and participates on a case by case basis. It is particularly interested in the proposed network of information management and marine pollution monitoring centers and in assistance to upgrade the equipment and facilities of its West Oceanographic Research Institute.

2.12. Other Initiatives

While certainly falling short of regime status, there are a variety of general environmental initiatives in the region, but partly in deference to UNEP's NOWPAP, few specifically include marine environment on their agenda. Those that do are:

- 1) the Northeast Asia Regional Environment Plan produced by the Meeting of the Senior Officials on Environment Co-operation in Northeast Asia organized by ESCAP ("recognition of the problem of land-based ocean pollutants"), and
- 2) "policies regarding prevention of ocean pollution" in the Asia Foundation's International Symposium on Environmental Co-operation/Northeast Asia Environment Co-operation.

2.13. Fisheries

There is presently a web of nine bilateral fisheries agreements in force in Northeast Asia involving all the Sea region's governments in one or more agreement.²¹ These agreements provide a solid

background of experience on which to build a multilateral regime. An analysis of this web of agreements and arrangements reveals certain commonalities.

First of all, Northeast Asian countries do appreciate the value of scientific information and can act in multilateral concert when the stocks are threatened.²² Except for the North Korea-Japan and Russia-Taiwan arrangements, all agreements established specific Fisheries Committees as advisory bodies. The committees hold joint annual meetings to discuss the state of the resources and fisheries and to revise the fishing conditions for the forthcoming fishing season. However, details of the discussions held or the documents used at such meetings are not made public.

Second, Japan is by tradition and mastery of techniques the most important fishing nation in the region, having achieved access to every other nation's resources. This importance is also demonstrated by the extent of its deployment and size of catch, and its bilateral agreements with every country. But because of the tenuous relations between Japan and several of the region's nations, these agreements are often between fishermen's organizations, rather than between governments. And these agreements apply more to bottom fisheries than to pelagic fisheries, which migrate and occupy different areas at different times for spawning and feeding.

Third, overall political relations provides the context for the agreements. For example, for the Sea, both the Japan-ROK and Japan-Russia agreements were reached within the context of the normalization of respective bilateral diplomatic relations. In both cases, the fisheries talks affected and were affected by the negotiation of overall diplomatic relations. Despite their overall shortcomings, the Japan-Russia and Japan-ROK fisheries regimes have provided a modicum of stability and predictability to fisheries relations in the postwar period. The annual fisheries committee meetings under the two regimes have allowed fisheries experts from the countries involved to exchange their respective assessments of the fisheries stocks concerned and to recommend to their governments acceptable, if not optimal, levels of fishing effort and regulatory measures necessary to achieve those levels in theory, assuming there is no or little noncompliance. Thus, negotiations between government representatives, occasionally including cabinet ministers, have managed to produce mutually acceptable agreements and the whole process has thus forced the governments to coordinate to some degree their respective policies.

Fourth, other than the declaration of fisheries and exclusive economic zones, probably the single most important development that has affected the bilateral fisheries relations between Japan and Russia and between Japan and South Korea has been the expansion of the fishery industry in Russia and South Korea since the 1970s. Although these two fisheries regimes have shown sufficient flexibility to accommodate these trends, the consequences for Japanese fishermen have been painful.

Despite this web of bilateral arrangements, the current fishery regime in the Sea is insufficient, fragmented and antiquated. Although the Sea entities have undertaken unilateral measures to regulate foreign fishing in their coastal waters,²³ none of the regulatory regimes include all coastal or fishing nations, nor is any state a party to all the agreements. Because of overlapping claims and unresolved boundaries, there is no clear dividing line for national fisheries areas. And geographically, none of the bilateral agreements take into account all of the region. Thus, there is no forum wherein all Sea fishing nations can meet to discuss the distribution of catches.

Under the present de facto regime, coastal states have attempted to reserve coastal fisheries for their own fishing interests. The bilateral agreements make some modest attempts to indicate sharing of catches within jointly regulated areas or to limit effort in order to stay within catch quotas for designated areas. But direct discussion of allocations would entail reviewing systematically the existing de facto allocations and re-examining the legal regime in the area with respect to fishing rights. Discussion of shared stock questions in the Sea would also require the involvement of North Korea. This situation creates the possibility of eventual competitive bidding for quotas which could undermine stock management.

It also constrains sharing of scientific information. The bilateral fisheries commissions established under the agreements generally do not publish their decisions or results of scientific deliberations for peer evaluation or general public information. Without information on the basis for the decisions made, the necessity of and rationale for the regulations cannot be fully understood, nor can their success be evaluated.

Despite some advantages (namely, until recently, the lack of overt conflict due mainly to self-restraint) the present regime is fundamentally flawed in terms of fisheries management. Few species can be managed by only one country. Although the stocks are often transboundary in distribution involving two or more states, there is no corresponding multinational body to manage them. And the parties concerned often produce significantly different resource assessments. Japan is a fisheries hegemon, with a virtual monopoly of quality information—although there remain significant knowledge gaps regarding stocks in the Sea. Theoretically this system—an interlocking web of bilateral agreements dominated by one nation—although perhaps inequitable, could successfully manage the region's fisheries, particularly if hidden factors serve to make the regime more equitable. But the advent of UNCLOS, the extension of jurisdiction, development of China's and North Korea's offshore fishing capability, utilization of unconventional species, and the full or overexploitation of most stocks indicate a need for regime change.

Indeed, failure to agree on a modus operandi for Tokdo/Takeshima and the surrounding waters and thus on a maritime boundary led in January 1998 to Japan's unilateral termination of its fisheries agreement with South Korea. South Korea then lifted all restrictions on South Korean fishing boats operating in Japan's claimed waters. In response, Japan began arresting South Korean boats fishing within its territorial seas. This in turn inflamed the South Korean public, resulting in anti-Japanese demonstrations and calls by politicians for South Korea to recall its ambassador to Tokyo.²⁴

3. Problems and Inadequacies of Existing Regimes

3.1. Redundancy

There is considerable redundancy of activities envisaged under the auspices of WESTPAC, UNDP/GEF, PICES, and NOWPAP. WESTPAC anticipates conducting training in the modeling of coastal circulation in order to predict and control accidental oil spills. It is also developing a WESTPAC Action Plan as a follow-up to UNCED. Both activities appear to be similar to activities contemplated by NOWPAP. However, WESTPAC activities can also complement the strong national marine scientific and technological capabilities in Sea states. Moreover,

WESTPAC's SEAWATCH program may be helpful in the implementation of NOWPAP. Work by Sea WESTPAC members (which are also members of NOWPAP) on continental shelf circulation, ocean dynamics, paleogeographic mapping, tectonics and coastal zones, and on musselwatch and harmful algal blooms are implemented on a western Pacific-wide basis without subregional focus. The objectives of the UNDP/GEF Program also seem to greatly overlap those of the NOWPAP and the Program also includes North Korea and China in its terms of reference. A mechanism may be needed to coordinate WESTPAC and UNDP/GEF activities with NOWPAP, similar to the Coordinating Body on the Seas of East Asia (COBSEA) operative in Southeast Asia.

3.2. Insufficient Knowledge and Awareness

The concept of the EEZ is not yet ingrained in the psyche of policymakers. Problems are most likely to arise in waters close to land, and national attention is therefore concentrated on protecting the health of the coastal waters rather than offshore areas, especially in semi-enclosed seas like the Sea. Moreover, countries generally resist involvement of other nations in their coastal waters, no matter how well-intentioned. And aside from physical and ecological degradation of the coastal and near-shore zones, and of course, nuclear waste dumping and massive oil spills, continuous pollution from land-based sources is at present the single most important threat to the Sea marine environment.

Prospects for improved transnational cooperation in environmental management depend upon better understanding of the causes and consequences of marine pollution in open-sea areas. Indeed increased knowledge is extremely important to the creation of regimes and accounts for the expansion and strengthening of marine pollution regimes worldwide.²⁵ The most successful efforts to deal with marine environmental problems appear to have been carefully nurtured with simultaneous institution-building, scientific, and treaty-drafting activities at the regional level. But this can come about only with strong and sustained littoral state support and state or international organizational leadership. Environmental consciousness in the region must be further raised, new institutional arrangements developed, and new economic theory applied, incorporating environmental benefits and pollution costs. Laws must be harmonized and cooperative monitoring achieved, particularly regarding future industrial development. Particular emphasis should be placed on ocean dumping, red tides, oil transports, and the environmental hazards of nuclear power and dumped nuclear waste.

3.3. Different National Perspectives

The Sea countries have fundamental differences in their approaches to regional cooperation in environmental protection.²⁶ China believes such cooperation should focus on urgent issues— industrial pollution, soil erosion, desertification, decrease in agricultural output, marine pollution, and depletion of marine resources. China prefers an informal mechanism to facilitate periodic meetings and exchange of relevant information and personnel in environmental management; legislation; pollution control; monitoring and data collection; resource accounting, pricing policy, and economic incentives; joint research on hazardous waste, acid rain and environmental management; pilot projects on desulphurization in power plants, toxic and hazardous waste treatment facilities, the prevention and control of lake eutrophication; and the prevention of marine pollution. Further, it believes the developed countries in the region and international

institutions should contribute technical and financial assistance to projects in these issue areas. This position may reflect in part the fact that China is more an exporter than an importer of pollutants. Indeed, China considers transboundary environmental issues to be quite sensitive.

Regarding the establishment of a forum for regional environmental cooperation, Japan prefers to start with an exchange of information and knowledge and then to gradually move to policy-oriented dialogue on common environmental concerns. Japan does support the establishment of a central secretariat to organize meetings, publish a newsletter, and administer subcommittees which would handle concrete issues. But Japan feels that the establishment of a framework for implementation of multilateral cooperation will take a long time. Indeed, Japan feels that discussions on a new institutional mechanism are premature and that it is preferable to implement bilateral programs. Japan has suggested four priority areas for environmental programs—regional marine conservation, acid rain, and air and water pollution.

Japan opposes a regional forum composed solely of officials of environmental agencies, because it feels economic ministries must also be involved. Further, Japan is concerned that any regional environmental cooperative body not become just another channel for its largesse. Rather it should spawn concrete projects involving sharing of domestic experiences, monitoring of the regional state of the environment, and transfrontier pollution. Also such projects should not duplicate Japan's existing bilateral and multilateral assistance projects, including the existing UNEP Environmental Technology Centers in Osaka and Shiga.

Russia clearly requires financial assistance to protect its environment. It prefers ecosystem management and more practical and action-oriented cooperation programs.

South Korea emphasizes the necessity of regional cooperation for environmental protection. South Korea feels such cooperation should include both technical projects as preferred by China, and environmental management projects such as a joint survey of the state of the environment as preferred by Japan. Indeed, South Korea has attempted to arbitrate between China and Japan by proposing a top priority project of energy and air pollution. South Korea also supports a coordinating mechanism for environmental assessment and management which would channel financial assistance from UNDP and ADB, and institute regional projects. South Korean priorities include transboundary air pollution, marine pollution, capacity building, technical cooperation and waste management. It is also concerned that the many initiatives on environmental cooperation in Northeast Asia be harmonized.

The most formal forum—the Senior Officials Meeting—has revealed the sharpest differences. China opposes a focus on transboundary air pollution; Japan opposes new institutionalization of cooperation, and providing financial assistance to it; and South Korea supports both approaches. These disparate positions may be explained in part by the perceptions that China is more an exporter than an importer of pollutants; Japan is an exporter notably with oil that may be spilled from its tankers and its effluent from nuclear power plants; and South Korea is perhaps more an importer than an exporter of pollutants. Russia certainly exports more marine pollutants and North Korea probably exports more than it receives. Thus at this stage, less formal fora are more acceptable because they do not produce highly binding mechanisms. Although inconsistencies and

overlaps exist, different fora may actually play complementary and reinforcing roles and thus support a trend towards establishment of an efficient cooperative regional mechanism.

3.4. Institutional Inadequacies

In few other semienclosed seas are multilateral measures for marine pollution control as deficient as those in the Sea. Indeed beyond coastal waters, most of the Sea is a “mare nullius” in terms of marine environmental protection.²⁷ In the terminology of international relations theory, international anarchy prevails.²⁸ Nevertheless, sensitive political relations and uncertain boundaries have not been conducive to information-sharing and cooperation on many matters, let alone the environment. This situation has made it difficult to evaluate the nature and extent of support for international environmental activities or even national positions thereon.

There is a general dearth of capacity and will to cooperatively monitor marine pollution. There is no formal infrastructure to bring about the critical mass of international collaboration and cooperation in monitoring and research activities that would delineate the spatial distribution of a contaminant and its subsequent effects, and, in particular, whether it would cross national boundaries. The lack of such a structure prevents the development of well-coordinated cooperative baseline studies and coordination in emergencies (such as a spill of oil or other toxic and hazardous materials). Monitoring and research programs are ineffective because they stop at artificial, politically-determined borders, rather than at a physical or chemical border. There is a discrepancy among the countries in the level and effectiveness of marine pollution monitoring and research in support of regulation. Japan is clearly far superior in terms of marine environmental knowledge and technology. Russia may have the capability but not the will nor the means to fully utilize it. Comprehensive marine research programs in South Korea have begun more recently. It is unknown but doubtful if North Korea has undertaken such activities.

Except in response to occasional tanker accidents that have destroyed coastal fisheries and aquaculture areas, and severe public health effects from untreated industrial effluents, there has been only minimal overt recognition by the Sea coastal states in recent years of the long-term effects of land-based, vessel, and air-borne pollution on people and the marine environment. Scientific questions on factors affecting the health of marine species and ecosystems are poorly articulated, and the relevance of national laws and policies to regional environmental protection has not been seriously considered by the coastal states. Indeed, a review of national legislation shows little evidence of laws and regulations being developed with specific relevance to natural features or processes that may affect pollutant transport, circulation, transformation, and dispersion. Laws and policies are couched in terms that separate legal justification and intent from the reality of people, ecosystems, and place. This is not unique to this region but is more important here, because the apparent failure to relate law more directly to nature through improved scientific understanding supports a general impression of regional disinterest in marine environmental issues.²⁹

Moreover, the degree of concern with marine pollution is quite varied, and actual practice is even more diverse. Japan is clearly the leader in marine pollution policy and prevention in the Northeast Asian region, but even it is now backsliding in policy and enforcement. Marine pollution awareness and prevention are much more recent phenomena in China, South Korea, and Russia,

and although their laws and regulations are sufficiently strict, there is a wide gap between the law and its implementation and enforcement. Although marine pollution is becoming a critical problem in these countries, industrial and economic growth remains the dominant national ethos.

Efforts to implement unfamiliar and untried regulations have had mixed results. In some cases, planners and policymakers have made ad hoc modifications of traditional criteria for selecting development priorities and allocating funds in the face of the possibility, if not the reality, of environmental regulation. Thus organizational and institutional arrangements for managing marine environmental protection have become ad hoc and variable. This variability has in turn reduced the governments' willingness and ability to understand and regulate marine pollution and resource conservation.

Uncertain jurisdiction due to the lack of agreed EEZ boundaries in the Sea complicates any effort towards cooperation and perhaps necessitates the involvement of an international organization as an intermediary or coordinator. All littoral states have now declared 200 nm Exclusive Economic Zones (EEZs). But the unwillingness of some to specify the limits of their claims causes uncertainty and tension. Yet modeling of hypothetical oil spills from point sources in the Sea and experience with real spills like the *Nakhodka* demonstrate that such spills can easily cross claimed maritime boundaries and eventually impact valuable and vulnerable marine resources—fisheries, coastal aquaculture, fragile wetlands, fish spawning grounds, and endangered species such as seabirds, whales, seals, and porpoises.³⁰ If jurisdiction is uncertain, so may be the responsibility for cleanup and compensation. Thus, a major transnational environmental disaster such as the *Nakhodka* brings into focus questions of jurisdiction and responsibility. Cooperation and a coordinated effort to clean up such a spill can be hampered. Movement of personnel and equipment across a hypothetical median line without prior permission—even for the express purpose of combating marine pollution—could be constrained or even provocative. South Korea and Japan have both established and used dump sites in areas of uncertain or overlapping jurisdiction in the Sea. Agreement on dump sites and cooperative monitoring thereof is advisable.

In summary, there was, and still is, except in some heavily polluted coastal areas, little public awareness of the importance of marine environmental protection, and central governments still tend to see environmental problems as peripheral issues to be acknowledged but effectively ignored. Whatever attempts were made to draft regulations have been hindered by the need to balance the interests of competing national and province-level sectors, such as coastal and offshore shipping interests, fishing and fish processing enterprises, coastal inland development construction and water conservancy bureaucracies, port and harbor administrations, and agriculture and industrial ministries.

Thus, the main constraints to regional cooperation in marine environmental protection are poor political relationships and environmental apathy. Addressing transboundary pollution, coordination of regulations and their implementation, and prevention of a “tragedy of the commons”³¹ are the most pressing issues. Two trends are relevant for the Sea: increasing marine pollution with concomitant damage to living resources, and a growing environmental consciousness which may spill over into the marine sphere. What is not clear is whether warming political relations and increasing environmental consciousness will overtake and mitigate an environmentally damaging ethos before irreversible damage is done.

4. Japan, the US, and a Regional Marine Environmental Protection Regime

Despite the relatively poor record of the region's entities in joining or adhering to international conventions protecting the marine environment, the new environmentalism combined with the muting of the Cold War in Northeast Asia has stimulated a proliferation of multilateral discussions and program proposals for environmental protection. However, the motives and rationale for these new initiatives may be broader than concern for the environment. By calling attention to politically benign but mutually threatening environmental issues, states sometimes can achieve broader objectives. For example, North Korea sees cooperation on environmental issues is one way of reducing tension in the region. Indeed, although marine environmental protection is a minor peripheral issue in relations among the East Asian coastal states, negotiations or provisional agreement on environmental questions may permit parties to avoid more controversial issues such as boundary delimitation. It can be argued that since the prevention of pollution of an international space such as the ocean cannot be adequately managed by individual ocean users, this situation is an incentive for states to resolve this “dilemma of common aversion” by establishing a regime of joint decision making to coordinate their restraint in the common use of the ocean.³² New norms have been created and need to be operationalized,³³ e.g., the obligation to protect and preserve the marine environment; the duty not to transfer or transform pollution, and the human right to a quality marine environment. Others are evolving, e.g., the obligation of monitoring and environmental assessment, and of providing technical assistance to developing countries for the protection and preservation of the marine environment.

There is also a slowly growing realization that regional cooperation can bring economic benefits from: knowledge spillovers and accelerated learning curves; economies of scale in data collection and information management, including storage and dissemination; economies of scale in scientific, managerial and administrative training; better and cheaper enforcement mechanisms; economies of agglomeration (the creation of one or more centers or fora for regional environmental management) including knowledge spillovers, reduced transport costs, and cheaper inputs; reduced transactions costs of trade and investment stemming from a common environmental regulatory framework; resource pooling; and elimination of regional standards-lowering competition.

Japan and the United States should collaborate to encourage and support a formal marine environmental protection regime for the Sea. This regime would be the integration of many building blocks which could be the focus of interrelated U.S.-Japan initiatives. The ideal regime must satisfy many theoretical needs as well as national interests. Above all it should rectify existing inadequacies. It should rationalize the redundancy of the existing and proposed international programs. It should provide the consultative channels or infrastructure for cooperation to provide synchronic monitoring, coordinated baseline studies, and prevention and clean-up of transnational pollution. It should coordinate policies and regulations for national zones and tailor them to fit natural features and processes, e.g., current systems and ecological zones—nearshore, offshore, temperate, and boreal. It should foster coordination and sharing of results of research in individual zones. It should serve to educate the public and policymakers as to the causes and consequences of marine pollution and thus even up the degree of knowledge and concern among the various countries, particularly for the offshore living resources and ecosystems.

Perhaps most important, it must provide opportunities to upgrade the capacities of North Korea and China to assess, monitor, prevent, control, and combat marine pollution. Without this assistance, North Korea and perhaps China may not be able to participate effectively in negotiations and ensure their concerns are reflected in policy formulation and would thus be less likely to comply with resultant agreements. Indeed such assistance may be the major incentive for North Korea, China, and perhaps Russia to participate in the regime. And Japan and South Korea may be motivated by the opportunity to establish a stronger relationship with North Korea. Moreover the increased scientific knowledge can reduce ecological and economic uncertainty regarding the distribution, effects, and costs of pollution. This could, as in the Regional Seas Programme for the Mediterranean, mitigate the developing country fear that developed countries are trying to make them pay for pollution caused by the developed countries, and to make them less competitive by diverting resources from economic development.

There is a convergence of factors which makes formation of a marine environmental regime in the Sea more likely now than ever. Only four states actually border the Sea, thus lowering the complexity of the bargaining process. First, there is a growing recognition that successful efforts in environment regimes could have spill over effects to other spheres closer to the core of international relations, such as security and trade. Its unsettled maritime frontiers may offer an opportunity for innovative management approaches. The interconnectivity of the waters and their biota, including fisheries resources are increasingly apparent. Moreover, the Sea is considered relatively unspoiled and therefore a prime candidate for preservation. The nuclear waste disposal controversy and the *Nakhodka* spill were the exogenous shocks to the system that can enhance regime formation and speed it along. They have certainly raised public awareness and placed the issue of marine pollution on the national policy agenda. Moreover a community of scientists and environmentalists is emerging in the bordering countries to press for policy action.

Stimulants include fear and uncertainty regarding the long-term effects of radioactive pollutants, and the high cost of gathering information—as well as the necessity to cooperate when undertaking research beyond national jurisdiction. Finally, the obvious need for continuing management and enforcement of anti-dumping regulations—and indeed—broader pollution monitoring and control measures argues for a mechanism to coordinate policies and approaches. Pressure to formulate sound environmental policy has increased since UNCLOS came into force in November 1994 obliging nations to protect the marine environment and providing further ammunition to NGOs to persuade governments to do so. Of course the North/South Korea dynamic is an obstacle but if relations improve somewhat, cooperation on marine environmental matters would be another opportunity to feel each other out and to build confidence for cooperation on a broader front.

Because of the tentative relations, competition, sensitivity regarding national jurisdiction, and mutual suspicions, the Sea regime should initially be consultative and of the self-help genre. Each country must manage its own waters. But a loose consultative mechanism can discuss common policies, cooperative research, education, and training. Here the lead of a capable medium power, South Korea, might be acceptable to all parties. South Korea—as it has historically—can serve as a buffer between the major powers and mitigate their reluctance to follow each other's lead. To decrease sensitivities, areas of overlapping claims, around Tok Do/Takeshima, and perhaps the Southern Kuriles, might be initially excluded from the purview of the consultative mechanism.

This consultative mechanism could also become the focal point for rationalizing the various international organization initiatives with a marine environmental focus, e.g., NOWPAP, WESTPAC, and UNDP/GEF, and for coordination of implementation of UNCLOS environmental responsibilities. As confidence builds and a habit of consultative and cooperative behavior gains a foothold, an organization could be added. This organization could involve conferences of environmental ministers which would make the delegates directly responsible to their populaces and thus more difficult for laggards to retard the process.³⁴

The process of regime creation should recognize the natural course of events and allow the regime to form in stages, i.e., to evolve. It should begin with a limited and temporary focus on monitoring and possible clean-up of dumped radioactive materials and perhaps on oil spill modeling and contingency plans. But policymakers should be prepared to move rather quickly beyond this limited ad hoc arrangement to a broader coordination regime which would agree on rules and procedures while leaving each member free to implement them in their own way at their own pace. This more advanced arrangement would focus on service functions, e.g., information exchange, data gathering and analysis, consultation, coordination of research programs, and planning for joint action in emergencies. Gradually and incrementally addressing ever more competing uses of the seas can produce a more coherent, comprehensive, balanced set of arrangements. The trend from a use-oriented to a resource-oriented approach can move successively from pollution protection to species conservation, to collective management and more refined monitoring and research. Eventually the parties could agree on pollution reduction targets as well as on reporting on implementation, and on improved public access to information.³⁵

Although the environmental scope of the regime should be expanded to include all major sources of pollutants—atmospheric, shipborne, dumping, drilling, and land-based—it should not become multisectoral. Multisectoral approaches are expensive, unfamiliar to bureaucrats, lack a public constituency and suffer from the inherent conflicts that create their apparent need. An expanded scope will allow for side-payments and for each participant to play multiple roles. For example, with an expanded scope, Japan can be satisfied that its concerns with the dumping of radioactive material will be addressed, while Russia and North Korea will be assured of assistance in training and research.

The regime should be simple but not too loose. The first step is to define the problem accurately, i.e., the varied capacity and will to cooperate in a structured manner to monitor and control marine pollution, particularly that beyond the narrow coastal zone. This requires intensive self-examination and specification of needs and intents. Rights and rules must be defined and agreed. Initially each government would manage its own jurisdictional areas according to agreed standards, perhaps using those of South Korea as a base, but with the monitoring capability of Japan—the most developed country in the region. Decisions should be by consensus and implemented by voluntary acquiescence to the rules. There is little point at this early stage in attempting to coerce compliance, and voting in international fora is generally an anathema to Asian countries. Compliance would be via detection, publicization and persuasion, as well as the costs—including loss of face—of purposefully and continually “defecting” from the regime, once having joined. Differences would be discussed openly in the working committee meetings and, if necessary, in the plenary.

Over time, a higher functional level may be reached at which laws and policies are harmonized, and common standards and regulations are set, monitored and enforced—by national teams in their own waters. Eventually one might envision an organization with a secretariat comprised of technical and policy representatives from each party, charged with developing recommendations for regional policies, laws, standards, procedures, training, research and environmental assessment, and management. A regional self-help arrangement is perhaps preferable to an international organization-led and managed effort—because it is more efficient, more flexible, and easier to control and use. However, an international organization could be the catalyst to start the process—as UNEP has attempted to do. Leadership is a critical need—both at the state and individual level. Indeed, although the stage is set, it awaits the appearance of an individual of sufficient energy and stature to convince and entice their colleagues in other countries to join in moving a regime onto the policy agenda.

What specifically needs to be done and where should the U.S./Japan initiative focus its efforts? Most appropriate for cooperation in the region are marine environmental monitoring and assessment; development, upgrading and harmonization of marine environmental legislation³⁶; transfer of technology involved in marine pollution control; and the combating of marine pollution, especially in the case of pollution emergencies stemming from incidents involving vessels. Education and training should be an integral part of all areas of cooperation. Environmental monitoring and assessment should be decision-oriented and receive high priority. Research priorities might include a synthesis of information on the state of marine pollution and of dumping in the Sea—perhaps resulting in a dynamic computer-based atlas of ecology, sea use, and pollution in the Sea. Needed ultimately is the harmonization of national legislation, and preparation and adoption of an umbrella convention on the protection of the marine environment. Supporting efforts might include joint assessment of priorities for marine resource management and areas most at risk. Recommendations for integrated coastal zone and marine environment management might be developed at the regional level. Cooperative projects on training in environmental impact assessment, coordinated creation of marine parks, management of wetlands, and control of industrial, agricultural, and domestic wastes are also priorities.

Cooperation on transnational issues should include studies of transboundary pollution, including intercalibration, baseline studies, coordination in emergencies, enforcement of environmental regulations near or across disputed boundaries as well as the transnational effects of ocean disposal; and adjustment of national initiatives to be compatible with emerging international legal and technical obligations (e.g., UNCLOS, LDC, UNEP's NOWPAP) and with one another.

Consideration should be given to a number of possible measures to enhance overall maritime safety and environmental protection beyond the IMO-coordinated international conventions. Mitigating or precautionary actions might include the establishment of tanker exclusion zones to protect coastal environments, or moving safety zones, with escorts, around tankers. Another could be the formation of regional pollution response teams, multinational in composition and authorized to act immediately, regardless of the national jurisdiction of the waters affected. Emergency response vessels, powerful tugs with pollution control equipment, tanks, towing, and other emergency gear, would have to be readily available. Existing search-and-rescue organizations and facilities could provide the nucleus around which these pollution response

teams could be built. The countries bordering the Sea might also consider establishing a regional compensation fund for damage caused by polluting accidents.

The benefits of a marine environmental protection regime will be positive but varied for each participant. Although all participants will lose the ability to treat the Sea as a free waste dump, all will clearly benefit from cleaner seas. The actual benefits are large but unquantifiable because of the long-term nature of the impacts of an environment which is less polluted than it might have been, and the uncertainty regarding the causal relationships between pollution and ecosystem damage. Perhaps most important, the level of marine environmental technology and expertise will be evened up throughout the region. The overall objective of the arrangement would be to manage the marine environment of the Sea. But a not-so-hidden agenda would be the provision of greater equity—equity in the sense of increased national capacity and responsibility to control pollution with potential transnational effects—and equity in the sense of a transfer of technology and knowledge from the rich to the benefit of all. In short, the major trade-off would be the benefit to Japan and South Korea of the adherence by China, North Korea, and Russia to a predictable regime with common minimum standards of discharge in exchange for training, equipment, and technical assistance from Japan and South Korea.

Endnotes

¹ Parts of this paper were derived from Mark J. Valencia, *A Maritime Regime for Northeast Asia*, Oxford University Press, 1997.

² Peter Hayes and Lyuba Zarsky, *Regional co-operation and environmental issues in Northeast Asia*, Nautilus Pacific Research, 1 October 1993.

³ United Nations Convention on the Law of the Sea, done at Montego Bay December 1982, UN Doc. A/Conf.62/122 of 7 October 1982.

⁴ *Ibid.*, Part III, Article 194 (1). Done at Montego Bay, December 1982, UN Doc. A/Conf.62/122 of October 1982.

⁵ Peter M. Haas. "Protecting the Baltic and North Seas" in Peter M. Haas, Robert O. Keohane, and Marc A. Levy, *Institutions for the Earth: Sources of Effective Environmental Protection*, The MIT Press, Cambridge, Massachusetts, 1993, pp. 133-181.

⁶ United Nations, *supra* n. 4, Article 194(2).

⁷ David Pitt, "Nuke dumping: Russia pressed on nuke waste accord," *New York Times*, 5 December 1993.

⁸ Symposium on Sea of Japan International Cooperation, RA Report No. 15, July 1993; China decides to sign the London Dumping Convention on waste disposal, *World Journal*, 19 February 1994, p. 9.

⁹ BIS-EAS-93-043 8 March 1993; *Japan Times*, 10 April 1994, p. 5.

¹⁰ UNEP/WP, Protection of the Marine Environment Against Pollution from Land- Based Sources (Montreal Guidelines), 120/3 (Part IV), Ad hoc Working Group of Experts, 11-19 April 1985, Montreal.

¹¹ APEC Environmental Vision Statement and Framework of Principles for Integrating Economy and Environment in APEC, mimeograph.

¹² United Nations Environment Programme (UNEP). Draft Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the North-West Pacific Region. Nairobi, September 1993.

¹³ Ivan Zrajevskij, "The North-West Pacific Region Action Plan: Progress problems and lessons learned", in Hyung Tack Huh, Chang IK Zhang, and Mark J. Valencia (eds.), *Proceedings of the International Conference on East Asian Seas: Cooperative Solutions to Transnational Issues*, Seoul: Korea Ocean Research and Development Institute and East-West Center, 1992.

- ¹⁴ International Environment Reporter, 4 December 1991, p. 657.
- ¹⁵ United Nations Environment Programme, Draft Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the North-West Pacific Region.
- ¹⁶ Environmental Conference drops 'Sea of Japan.' FBIS-EAS-94-180, 16 September 1994, p. 4; United Nations Environment Programme, Preparatory Meeting of Experts and National Focal Points for the Intergovernmental Meeting on the Northwest Pacific Action Plan, Report of the Meeting, UNEP (OCA)/NOWPAP WG.4/5, 13 September 1994; United Nations Environment Programme, Draft Action Plan for the Protection, Management and Development of the Marine Coastal Environment of the North-West Pacific Region.
- ¹⁷ Alicia Barcena. Cooperation for development in regional seas. General evaluation of the Regional Seas Programme. Paper presented at Pacem in Maribus XXI, Takaoka, Japan, September 1993; Peter M. Haas. Save the seas. UNEP's Regional Seas Programme and the coordination of regional pollution control efforts in Elisabeth M. Borgese, Norton S. Ginsburg, and Joseph R. Morgan, eds., Ocean Yearbook 9, 1991, The University of Chicago Press, 1991, pp. 188-212.
- ¹⁸ Northeast Asia's Tumen River Economic Development Area 1994: Collected Papers: Report G: Preliminary Environmental Study, Chinese Research Academy of Environmental Sciences, Lishuiqiao Anwai, Beijing, PRC.
- ¹⁹ United Nations Environment Programme (UNEP). Third Meeting of Experts and National Focal Points on the Development of the North-West Pacific Action Plan, 10-12 November 1993, Bangkok, Report of the Meeting. UNEP (OCA)/NOWP.WG3/6.
- ²⁰ Chua Thia Eng, Robert Cordover, Miles Hayes, Celso Roque, David Shirley, Gurpreet Singhoti and Philip Tortell. Prevention and Management of Marine Pollution in East Asian Seas. Formulation Mission Report Prepared for the United Nations Development Programme Division, Regional Bureau for Asia and the Pacific, April 1993, pp. 2-11-2-27.
- ²¹ Tsuneo Akaha. 1985. Japan in Global Ocean Politics. Honolulu, Law of the Sea Institute and the University of Hawaii Press.
- ²² FBIS-EAS-93-128, 7 July 1993, p. 3.
- ²³ Mark J. Valencia, International Conference on the East-West Environment and Policy Institute Occasional Papers, No. 10, 1989. Sea of Japan.
- ²⁴ Reuters, Seoul-Tokyo tensions escalate over fishing dispute, 26 January 1998.
- ²⁵ Boleslaw A. Boczek. Concept of regime and the protection and conservation of the marine environment in Elisabeth Mann Borgese and Norton Isinsburg, eds., Ocean Yearbook 6, Chicago: University of Chicago Press, 1986, pp. 288-292.

²⁶ Han Taek-Whan. Northeast Asia environmental cooperation: progress and prospects. Paper presented to the Workshop on Trade and Environment in Asia-Pacific: Prospects for Regional Cooperation, 23-25 September 1994, East-West Center, Honolulu.

²⁷ Mark J. Valencia and John Klarquist. 1992. National marine environmental policies and transnational issues in Joseph R. Morgan and Mark J. Valencia, eds., *Atlas for Marine Policy in East Asian Seas* (University of California, Berkeley Press), pp. 136-142; 139.

²⁸ Oran Young, *Resource Regimes: Natural Resources and Social Institutions*. Berkeley: University of California Press, 1982.

²⁹ Valencia and Klarquist, *supra* n. 22, p. 139; For example, the northern and southern parts of the Sea of Japan differ sharply with respect to hydrography, circulation, continental shelf width, submarine topography, and coastal geomorphology. Indeed, hydrography and circulation in the Sea resemble that of a 'mini-ocean' with regard to temperature and salinity differentials between northern and southern zones, circulation patterns, and zonal mixing. There are also contrasts between the narrow continental shelves and smoother coastline with its complex links between coastal and submarine geomorphological processes in places like the Yamato Basin and Toyama Bay.

³⁰ Lee Dong Soo and Mark J. Valencia. Pollution in Joseph R. Morgan and Mark J. Valencia, eds., *Atlas for Marine Policy in Northeast Asian Seas*, University of California, Berkeley, 1993, pp. 125-135.

³¹ Garrett Hardin. The tragedy of the commons. *Science*, v. 162, 1968, pp. 1243-1248.

³² Arthur A. Stein. Coordination and collaboration: regimes in an anarchic world in Stephen D. Krasner, ed., *International Regimes, International Organization (Special Issue)*, v. 36, no. 2, 1982, pp. 299-324.

³³ Boczek, *supra* n. 25.

³⁴ Haas, *supra* n. 5.

³⁵ Steiner Andresen. The effectiveness of regional environmental cooperation in the northern seas. Paper presented at the 36th Annual Conference of the International Studies Association, Chicago, February 1995; Haas, *supra* n. 5.

³⁶ Mark J. Valencia, *International Conference on the Yellow Sea. East-West Environment and Policy Institute Occasional Papers*, No. 3, pp. 88-90.