第22章　The Pan-Japan Sea Region Its Role and Future in the World

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1. Introduction

The Pan-Japan Sea region (hereinafter referred to as Region) is mutually significant in terms of its economic, social, environmental and political dimensions to the 5 countries, namely, Japan, South Korea, North Korea, Russia and China who have their jurisdictions extending over the waters of the Sea of Japan. The social, economic, environmental and political dimensions are inter-related and activities that originate from within one dimension have the potential of impacting other dimensions. For instance, economic activities in the region may have environmental, social and political consequences. The spillover may be of interest to the neighboring countries and the Asia Pacific region as a whole as well as the international community who may be affected due to first, the sensitivity of some of the issues and second, the great potential of the region. On the positive side of economic development growth in one country within the region may spill over in terms of creating new opportunities.

In this regard it is important for a coordinated arrangement among all of the countries of the Region on numerous issues of common interest, so that the issues are addressed in a more balanced and integrated manner to avoid negative impacts in the region and the world.

Moreover, at the international and regional levels a number of multilateral and bilateral arrangements relevant to the 5 countries exist and require both collective and individual action in order to ensure some harmonization between and among the countries in the region on the multitude of issues affecting the region. While there are both multilateral arrangements and bilateral cooperation between and among the countries, the arrangements are fragmented and require an umbrella organization that enhances coordinated cooperation in addressing the environmental, economic, social and political dimensions of the Region. In addition, the existing arrangements are merely frameworks and require detail work to be carried out by each country at the national level.

This paper explores primarily the role and future of the region in the environmental context while also taking into consideration the economic, social, and political factors. In particular, it intends to explore the current status of the region and its future prospects and barriers with the intention to suggest options for improvement. The main areas to be discussed here fall into 3 major sections and include the background of the Pan-Japan Sea region, environmental governance and the future outlook of the Region.

2. Background to the Pan-Japan Sea Region

2.1. Features of the Pan-Japan Sea Region

There are a number of obvious but important features about the Region that require discussion before understanding the role and future of the region in environmental and related dimensions. Historically, the region has experienced much activity in the economic, social, cultural and political dimensions. This fact continues to be true for today especially in the economic sense. While activities in the economic sector have increased, other activities especially military expansion and arms build-up with the exception of North Korea have declined (Kitazawa 1993). In fact, the features of a region can stem from both its historical and geographical features. The features can be determined by both artificial and natural causes.

Moreover, the region is vulnerable in terms of environmental, economic, political and social sectors. For instance, economic activities that cause environmental pollution in one country could spill over into the borders of the other countries easily due to the close proximity of the countries. Such effects could have economic, social and environmental consequences. Such consequences were seen in the case of the Russian oil tanker that ran off-shore in Fukui Prefecture along the coast of Japan in 1992 causing tremendous damage to the environment costing huge amounts of money for the cleanup purposes.

The region also possesses about 8.6 percent of the world's population (Pacific Northwest Center for Global Security (n.d.)). A big population could be seen as both a negative and positive thing. First, on the positive side, a big population may sometimes mean that there is surplus workforce that could contribute toward building the economy of the country if they are put to use efficiently as is seen in the case of China (Zhou 2004). If the resources and economic wealth are in abundance to sustain the population it may pose few problems, but if it is the reverse, then a big population might be a burden. Therefore a balance has to be maintained between the rising population and economic growth.

Given the long history and intensity of activities in the region today and also the big population, the region has the potential for growth and development. However, this potential has not been explored to its fullest. This will only come if the countries cooperate and coordinate among each other.

However, one fact that can be seen as a stumbling block for countries in the Region to cooperate is the historical experiences especially the consequences of the numerous wars that were fought between the countries. This historical experience is a sensitive one that not many prefer to talk about it openly. But in recent times the situation may be changing where more people are beginning to talk about it openly. This is evident when the Prime Minister of Japan, Junichi Koizumi, made a formal apology to some of the countries in the region who were victims of the Japanese military invasion in the past. This will perhaps loosen the tensions and attract more cooperation among the countries in the future.

A second factor that can discourage cooperation and enhance development in the region is the lack of an umbrella organization that could facilitate cooperation and progress in a number of sectors. One may argue that there may be no need for an umbrella organization to address issues of common interest to the region as bilateral relations and cooperation are sufficient. In contrast, more benefits could evolve if limited resources were mobilized and used collectively rather than dealing on a bilateral level because bilateral arrangements could give rise to redundancy if areas of common interest to the region were to be addressed. Moreover, the benefits will not only be limited to the region, but it will be important for the world as a whole due to the wealth the region already possesses and the potential that exists.

While there are barriers that need to be tackled, these very barriers could serve as opportunities for collaboration among the countries of the region.

In addition to the historical experiences that create the division between the countries, new and emerging issues, such as economic development and environmental concerns are common causes for closer cooperation among the countries. The potential for cooperation exists, but without easing the barriers and establishing supporting structures, any cooperation may not be successful.

2.2. Activities and Issues in the Pan-Japan Sea Region

There are a number of activities and issues that concern the Region collectively. Environmental concerns are indeed one important issue of concern to the Region. And it is obviously the consequence of activities for economic development taking place within the respective jurisdictions of the countries or from activities occurring in the common areas within the Region. Thus, it is an issue that has to be addressed promptly and collectively by all countries and with other sectors of development. Environmental issues are not isolated problems and must be addressed collectively with economic and social sectors. These three factors are inter-related issues and are regarded as pillars of sustainable development. In order to give sustainable development its true meaning the three pillars must be addressed simultaneously. To this end let

us begin by taking a glance at some of the activities taking place in the region and issues that concern the region.

2.2.1. Economic Development

Efforts in economic development in numerous sectors are evident on both land and sea. Some of these sectors include development of fisheries, trade (movement of people goods and services within and outside the region), maritime and air transport services, manufacturing industries, agricultural development, the development of the deep seabed resources and foreign direct investment (Arirang News 1999). Such activities have been increasing steadily in recent years and have generated both positive and negative outcomes.

On the positive side, Japan becoming one of the world's economic powers is an illustration of the intense activity leading to economic development of the country. China's economic boom since 1979 has been increasing (Zhou 2004) and is predicted to supercede some of the leading economies in the future. In addition, South Korea's economy is expected to pick up in 2005. A report by Samsung Economic Research Institute, a local think tank, indicates that the growth rate is expected to reach 4 percent in the later half of 2005 meaning that it will supercede the growth rates of Japan, the US (Arirang News 1999) and the EU respectively. Russia, after shifting toward a capitalistic economy is experiencing a steady growth. North Korea's economic growth which is the lowest in the region has however indicated some slight growth as can be seen from 1.2 percent in 2002 to 1.8 percent. This growth comes after it began to shift from Stalinist economic principles to free market principles. (Herald Tribune 2004)

Table 1. Economic Growth Rate in Selected Countries, 2004

Country/Region	Economic Growth Rate (%) est.
US	3.3
EU	2.1
Japan	2.4
China	8.6
South Korea	3.7
Russia	6.8
North Korea	1.8

One obvious fact that is illustrated from Table 1 above is that countries in the region are at different levels of economic growth with China leading and North Korea at the bottom. However, a common attribute is the increasing activity and effort to achieve economic development. For example, there has been heavy maritime traffic in recent years than ever before. This has been triggered by trade within the region and with other parts of the world, especially, with Europe and North America (Babbage and Bateman 1993). Furthermore, air routes in Japan originating from the coastal prefectures of the Sea of Japan to the neighboring countries and other parts of the world have increased. For instance, Toyama, Ishikawa and Niigata Prefectures located along the Sea of Japan have established flights that link the countries in the region. In addition, there are flights from Tokyo to the region itself and connect to Europe and other parts of Asia.

Given the two forms of economies, namely, capitalist (Japan and South Korea) and socialist (Russia, China and North Korea) observed by the countries, intraregional trade tends to be divide where the two economies are reflected. Those that observe a capitalist economy tend to trade and invest in business opportunities among each other more and the countries who observe a socialist economy tend to do the same among each other. (Pacific Northwest Center for Global Security (n.d.))

The contribution to the economy of the Region by each country is significant which comes in a number of ways. Russia provides timber, minerals and petroleum, and fish. China contributes inexpensive labor, heavy industry, agricultural products, and natural resources. Japan offers capital, technology and market for consumer goods. South Korea provides capital, technology, and natural resources. South Korea contributes a low-cost and disciplined labor force. A number of industries are generated by such resources and potential. Imaginably, manufacturing, extractive, construction, transportation and energy industries are found to be dominant in the Region. (Pacific Northwest Center for Global Security (n.d.))

The Tumen River Area Development project was one initiative for potential economic cooperation among the countries bordering the Tumen River. North Korea, China, Russia and Mongolia are the

main players in this project with Japan as an observer of the Consultative Commission. (Tsuji 2004) Although this area is upstream and may not pose major risks to the Sea of Japan, indirect consequences to the ecosystem and the increase of maritime traffic have been predicted.

On the negative side of the Region, despite the big population and cheap labor, the rich natural resources and its extractive activities and the intensity of intraregional trade, if all of these issues are not managed well they have a potential to cause harm to the environment. Environmental consequences have already been witnessed as a result of these activities for economic development.

Whether the outcomes are positive or negative will depend upon whether the countries in the region coordinate and integrate these issues in a well-balanced manner or not. If this can be done the road to success can be foreseen. If the contrary takes place there is a potential risk of political, security, and other disorder in the Region, which may also spill into neighboring countries and the world as a whole. Hence, the Region has a significant role to play contributing to economic development and maintaining ecological balance and peace in the world.

2.2.2. Environment

The Region is abundant in both terrestrial and marine biodiversity and natural resources. For instance, it houses rich fisheries to migratory birds, and those in between such as the insect diversity, mammals and other living creatures. The existence of biodiversity and natural resources and the development activities taking place within the region have a potential for economic growth, but simultaneously there is potential for environmental risks that could become a burden to the Region in a number of ways. Evidence of environmental pollution and harm and the decline of biodiversity have been seen taking place already in the Region. Moreover, the environment in the region is considered to be very vulnerable and requires careful measures.

2.2.2.1. Pollution

Pollution comes in many forms and has numerous sources. Thus pollution is defined by the Convention on the Law of the Sea (UNCLOS) as: "the introduction by man, directly or indirectly, of substances or energy into the marine environment including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities including fish and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities." (Article 1.4)

In the Region a number of contamination cases exist. A few include nuclear dumping, air pollution, thermal contamination, chemical and biological contamination, petroleum hydrocarbon contamination and yellow sand contamination are some specific illustrations. These pollution occur from both source-point and non-source point from both land and sea. Most of the pollution in the Region is caused by human activity with the exception of a few that are the result of natural phenomenon such as the yellow sand contamination. The following is a brief summary of some of the cases of pollution found in the region.

2.2.2.2. Chemical Contamination

The rapid industrialization, urbanization and population growth in the region have all contributed to chemical pollution. The large concentration of industry and population along the coastal areas of some of the countries in the region has caused various forms of chemical pollution. People and industry in China, South Korea and Japan have discharged sewage and industrial wastes directly into water bodies and the atmosphere.

China being the largest consumer of coal and its heavy dependence on it for its industry is predicted to cause air pollution that crosses into neighboring countries and eventually coming down as acid rain (TED n.d. and Delfs 1993). Similarly, South Korea due to its trends in industrialization has been contributing to air pollution especially through the emission of sulfur dioxide. In truth, it has been reported that acid rain with pH 4.5-5.0 have been recorded in Japan, China and Korea (Environmental Information Network in North East Asia Region 2003). China, Japan and South Korea are said to be responsible for 50 percent, 35 percent and 15 percent of sulfur ion emissions respectively that causes acid rain (Delfs 1993).

Japan while reducing industrial chemical waste pollution of the 1950s and 1970s that caused major pollution incidents including the Minamata and Itai Itai incidents has witnessed new trends of chemical contamination from household wastewater, which is now a major source of water pollution in Japan (Kambu 2001). Agricultural runoff is another source of chemical pollution found in the Region. These forms of chemical pollution place heavy burdens on the quality of environment and disrupt the ecosystem. As can be imagined, the damage could also extend to the cultural and historical heritage and human health.

2.2.2.3. Nuclear Contamination

The nuclear contamination in the Sea of Japan arises from 3 primary sources: global fallout from nuclear weapon testing; discharges from Japanese nuclear reactors; and, leakage from Russian disposal of radioactive nuclear wastes. These are cases of contamination from both intentional dumping and accidents. The Russian Navy is said to dispose liquid and solid radioactive wastes from decommissioned nuclear power ships and nuclear reactor submarines into the Sea of Japan since 1966. Meanwhile the disposal of nuclear weapons in Russia has been supported by Japan. There are still concerns to dismantle safely decommissioned nuclear submarines both for control of arms and for environmental reasons (MOFA 1995). Surprisingly, Japan dumps more radioactive wastes from its more than 50 nuclear reactors annually into the Sea of Japan than the Russian Navy. South Korea possesses 13 nuclear power reactors. North Korea had 3 and China also has 3 reactors. As can be predicted, the question arises on where the wastes will go from these nuclear reactors. One possibility is the Sea of Japan. There are high potential for risks to the environment and people in the Region and beyond. (Pacific Northwest Center for Global Security (n.d.))

2.2.2.4. Oil Contamination

Pollution from oil spills is not new to the world including the Sea of Japan. Despite the fact that approximately 60 percent of marine pollution is land-based, oil pollution has attracted much attention due to its character. (Henkin et al 1993) There have been a number of incidents involving oil spills on the Sea of Japan due to the heavy marine traffic and especially oil tanker traffic, which transports oil to feed the refineries in South Korea, China and Japan. Some of the incidents include the wreck of the tanker Juliana that spilled 6400 tons of oil, the South Korean Inchon spill involving 80 tons of oil and the recent spill of Nakhodka, the Russian oil tanker that involved 4500 mt of oil. (Pacific Northwest Center for Global Security n.d. and TED n.d.). As can be predicted, all of these spills involved tremendous damage to the environment and fisheries resources and caused great economic loss. For instance, the South Korean spill resulted in US$10 million in damages while it has been estimated that the Nakhodka spill amounted to at least 9 billion yen (TED n.d.).

One of the major concerns for the Sea of Japan and the marine environment is related to its geographical setting, especially its enclosed nature. Enclosed seas tend to possess higher concentrations than the open ocean as is evident in some of the enclosed seas including the Mediterranean Sea, the English Channel and the Caribbean. (Henkin et al 1993 and Pacific Northwest Center for Global Security n.d.) This situation poses tremendous risks to the marine environment of the Sea of Japan.

2.2.2.5. Yellow Sand

Yellow sand is a new and emerging environmental and health concern that are increasing in Japan and South Korea. It tends to have its origins in the arid areas of China and Mongolia (Murayama et al 2001). Due to its newness, research on the issue is at its early stages. Accordingly, limited information is available about the issue and poses uncertainties. The implications are that without information and facts about the problem, concrete measures may be delayed. However, in the absence prompt measures that may be based on facts, both domestic and international law have found a way to deal with uncertainties and that is through the application of the precautionary principle. This principle requires people to take precautions to avoid adverse significant consequences from their activities.

On the other hand, some facts are known about the yellow sand problem. What we already know is that it possesses both negative and positive consequences. On the positive side, it neutralizes acid rain because it possesses 1 percent of

carbonate and attach to inorganic nutrients including phosphate, calcium and ion. In addition, yellow sand particles are said to be a nutrient source for phytoplankton. The negative consequence is that, such particles can cause respiratory diseases and atmospheric pollution impacting climate. (Environmental Information Network in North East Asia Region 2003)

2.2.3. Consequences of Environmental Pollution and Harm

The consequences of environmental pollution and harm are obvious as experience has it and also from what can be predicted. First, environmental pollution and harm can cause depletion in biodiversity and renewable resources. Depletion means scarce resources and this may lead to increased competition for the limited resources. A chain reaction can be imagined in such a case where one problem leads to the other. Moreover, environmental pollution and harm may cause problems including environmental security, political tensions and conflict, food security and piracy. Second, environmental pollution and harm may have negative economic consequences. Third, it may have adverse consequences on culture and tourism. A final and important consequence can be human health concerns. All of these cases have been witnessed in some parts of the world and also in the Region with varying degree of seriousness.

2.2.3.1. Depletion of Marine (Fisheries) Resources and Wildlife

Depletion of renewable marine resources and fisheries due to environmental pollution and harm is not a problem that is or may be limited to the Pan-Japan Sea region. It is a worldwide problem that has been seen taking place in various parts of the world. The Sea of Japan is said to be rich in marine resources, especially fisheries resources (TED n.d. and Environmental Information Network in North East Asia Region 2003). Unfortunately, the fisheries resources have declined in recent years due to both environmental pollution and over-fishing. This can be witnessed in the 46 percent decline of fish catch in Japan between 1989 and 1996. A similar trend was seen in South Korea. This is not surprising because the oil spills that have occurred throughout the years in the Sea of Japan have had tremendous impacts on the fisheries and renewable marine resources. For instance, the Nakhodka spill destroyed shellfish, seaweed and edible algae. Damage was also done to marine wildlife including sea birds and auk which is endangered. Such consequences are predicted to take a toll on the fishing industry in Japan and environmentalists predict that the damage caused on marine and other wildlife will take up to 20 years to recover.

The scarcity of a resource can be the cause for conflict. This is a problem that is already seen occurring in some parts of the world. Scarce resources in parts of Africa have forced people to use arms to control the limited resources within the area they occupy. In South East Asia, piracy on sea is also seen taking place already. Moreover, depletion and scarcity of resources may cause both internal and external conflicts.

2.2.3.2. Economic Implications

The consequences of pollution and harm can also bring about economic constraints. Some living natural resources possess economic value. If such resources are destroyed through pollution, the consequence would be the decrease in the potential economic prospects of the resources. In addition, pollution that may require clean-up and restoration work can impose heavy economic burdens. Such work can cost huge amounts of money as already witnessed in the past with some of the pollution cases that required clean-up and restoration work including the Exxon Valdez spill in Alaska in 1989 where clean up costs amounted to US$2.5 billion (ITOPF 2001). Such huge amounts of money could be used elsewhere to develop other sectors than use it on clean-up activities. This can be considered a waste of resources and can contribute to slow progress for countries engaged such clean up activities.

2.2.3.3. Implications on Social, Cultural and Tourism Issues

In addition to the negative economic consequences of pollution and environmental harm, there can also be negative impacts on social, cultural and tourism sectors. Adverse impacts on the different sectors have been witnessed in the past in the region and in other parts of the world due to pollution and environmental harm. For instance, in the case of the Nakhodka spill, it is said that the cultural way of life especially fishing

and diving culture for marine resources such as shellfish has been affected and will not be the same for many years. The dive for shellfish in Japan is a cultural way of catching shellfish and it is usually done by women who are referred to as 'Ama'. Also, the diet culture of harvesting and consuming seaweed has been affected. Furthermore, the oil spill that moved inland contaminated a large area of the scenic beauty and rich environment on the coastline of Japan. The impact on the Noto Peninsula in Ishikawa Prefecture forced people not to swim during hot summer days. In Fukui Prefecture there were many cancellations from tourists who had booked and made arrangements to visit the hot spring resort areas and eat crabs, which is famous along the coast of the Sea of Japan during the winter season (pers. comm Hamaike and Sugihara). The impact on tourists to the region implies of the economic loss to the local area. At the time of writing which was 7 years after the spill had occurred and the environmental and other conditions seem to have returned to normalcy, but this has to be proven scientifically.

2.2.3.4. Political Implications

Environmental insecurity may trigger competition for the scarce resources which may spur off piracy and clashes on sea thus triggering conflicts at the political. Such a problem is foreseeable for instance, in case of territorial and fishing rights if fisheries resources were affected. In fact, cases of clashes between fishermen on the Sea of Japan have been reported in the past. Given the historical experiences of wars between the countries in the region and military and nuclear weapons upsurge, it is not favorable to stir new conflicts that may evolve from environmental insecurity, but rather to avoid them. Although political situations have improved to some extent after the cold war, there are still outstanding issues such as security risks due to North Korea's nuclear weapon expansion and the territorial issues concerning Japan and Russia and South Korea and Japan.

Furthermore, the occurrence of trans-border environmental issues obviously raises concerns of political boundaries of the countries in the region and the larger Asia Pacific region. This may spur off conflicts between and among countries in the region if they are not treated sooner than later. However, the political history of the countries in the region should be something the countries in the region should use to build new opportunities for cooperation rather than conflict.

2.2.3.5. Impact on Human Health

Health issues related to environmental pollution has had major tolls in the past and continues to be a major problem. The infamous industrial pollution related diseases of the Minamata, Itai Itai and the Yokkaichi asthma in Japan during the 1950s through to the 1970s are well-known cases of pollution related health tragedies. The Chernobyl explosion that left many dead and ill from nuclear radiation is another. A more recent case mentioned above is the respiratory diseases caused by yellow sand. Although a natural phenomenon it is also related to health problems. In the case of the *Nakhodka* spill 5 people involved in the clean-up exercise died from heart attacks (TED n.d.).

The causes of environmental pollution and harm are multiple and can have a number of serious consequences. Environmental security through pollution and other causes have resulted in negative economic, social, political and cultural sectors of the countries within the region as well as the world alike. As such, ensuring environmental security in the Pan-Japan Sea region is crucial not only for the region itself but also for the rest of the world. This is primarily due to the capacity of the region in numerous ways and what it can contribute to the world, economically, socially and through other means. It is also important that the region is in a stable state in order for it to continue contributing to the development of the region and on a broader scale.

3. Environmental Governance Relating to the Pan-Japan Sea Region

The environmental conditions of the region and the potential impacts it could have in the region as can be witnessed from above requires the countries in the region to take steps to address the environmental concerns collectively. Some of the environmental issues encountered in the region are similar to other parts of the world. Due to such common global environmental issues the international community has taken steps to address them through multilateral arrangements. Moreover, multilateral arrangements and institutions have been established to address

environmental issues which countries of the regions are also members. On the other hand, there are environmental concerns that are peculiar to a region. The Pan-Japan Sea region is one illustration. The Region's enclosed sea can be a risk to the flow and natural cleansing of wastes that end up in the Sea of Japan. Also, the movements of air and water currents that flow from mainland China, North and South Korea have the possibility of carrying with them pollutants and wastes across national borders thus causing serious transboundary environmental concerns. This situation certainly raises concerns for collective action at the regional level to address these environmental issues.

As a matter of fact, there are measures both at the global and regional level that exist to address these environmental problems. Thus far, there are over 800 bilateral and multilateral agreements both binding and non-binding that are directly or indirectly relevant to addressing environmental issues. (Weiss 1992) Thus, bilateral and multilateral environmental agreements comprise one way in which environmental issues are being addressed. They tend to provide some framework by which general or specific environmental issues can be addressed. Let us observe some of the global and regional arrangements that are relevant to environmental issues in the Region.

3.1. Multilateral Environmental Agreements

Of the multitude of general and specific bilateral and multilateral agreements established to respond to the environmental problems a number of them are relevant to the Region include the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the 1972 Convention on the Prevention of Marine Pollution by Dumping of Waste and other matter and the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL) and the 1992 Convention on Biological Diversity. In addition to the hard law instruments, there are the soft law instruments relevant to the countries of the region. Soft law instruments include declaration of principles, Charters and resolutions of international organizations. Some major ones are the 1972 Stockholm Declaration the 1992 Rio Declaration and Agenda 21. While soft law instruments do not possess legally binding force they are significant for their high moral value. (de Klemm and Shine 1993) To this end, both hard law and soft law instruments are vital in addressing environmental issues.

3.1.1. The Convention on the Law of the Sea

All the countries of the Region are parties to the UNCLOS. The Convention is a comprehensive framework that covers the rights and duties of parties regarding the use and development of oceans. In the course of using and developing the oceans, a number of important issues, such as territorial issues, pollution control and management of marine resources come to mind. These issues are some of the subject matters of the Convention. The issues are interconnected and the Convention attempts to cover them in an integrated manner. For instance, the use of oceans could be perceived in terms of navigational purposes or its utilization to exploit fisheries resources and the deep seabed resources to boost economic development. In the event of these activities, marine and other forms of pollution and harm can easily occur. In this regard, the Convention calls for parties to take all necessary measures to prevent, reduce, and control pollution and harm. It covers polluting activities both on land and sea and of all kinds. When considering pollution from land and especially within territorial waters of a country it is a matter of national jurisdiction. And each country is obliged to take measures to prevent pollution and harm resulting from activities within its jurisdiction.

As the UNCLOS is a Framework Convention it is meant to be a broad instrument and leaving the details to the respective countries to determine. One such measure as stipulated by Articles 192 and 194 is for countries to legislate and take all necessary measures to prevent, reduce and control marine pollution. This obliges parties to establish detailed standards, assess risks, cooperate at the regional level, and establish response measures for disasters and initiate other programs to prevent pollution and minimize harm to the marine environment.

However, in either setting standards or carrying out other tasks as required by the Convention, the existence of the financial, administrative and technical capacities of the countries would determine effective implementation. Given the different levels of economic, social and political conditions at which the countries of the Region operate, they vary vastly in their implementation

and policy approaches. It is difficult for countries in the Region to adopt uniform standards and this can give rise to free-riders and eventually can be the cause for marine pollution. For instance, Russia is said to set stricter effluent standards and water quality standards, at least on paper, than the neighboring countries. Enforcement is also said to be a problem where countries range from lax to stricter ones with Japan being the strictest. (Valencia 1998)

To exacerbate the situation there are numerous loopholes which can be found in the Convention itself and can contribute to the possibility of pollution and harm. Such loopholes can be found in the wordings of the Convention (Article 194) such as "…shall use the best practicable means at their disposal and within their capabilities…" Although such wordings do justice by removing the burdens for countries facing poverty of resources, they can contribute to environmental pollution and harm. In fact, it is a dilemma in itself and working out a solution still remains a challenge. This may require countries to cooperate at the regional level to achieve some of the objectives of the Convention which still is far from reality. To this end Article 197 calls for cooperation at the regional level to deal with regional seas.

3.1.1.2. Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter (London Dumping Convention 1972)

In addition to the UNCLOS which is a broad instrument, there are also specific instruments addressing specific environmental issues and one of them is the London Dumping Convention. This Convention covers the prevention of dumping of wastes at sea. Four of the five countries in the Region except for North Korea are members to the Convention. The Convention requires parties to act either individually or collectively to promote the effective control of all sources of pollution of marine environment and to take all practicable steps to prevent the pollution of the sea by the dumping of waste which may create hazards to humans, the living resources and marine life (Article I). The Convention in Annex I lists a number of toxic substances, items and activities that it strictly prohibits. Just to name a few, organohalogen compounds, mercury and mercury compounds, cadmium and cadmium compounds, incineration of industrial waste, radioactive wastes or other radioactive matter, crude oil and its waste and persistent plastic such as netting and ropes are those that are prohibited under Annex I. In Annex II and III there are other substances, items and activities, which it requires permits and prior approval to be sought before dumping or conducting of activities. In any polluting activity it would be difficult to establish a 100 percent pollution-free situation. One has to trade-off some pollution, but on the condition that such pollution do not cause significant damage or pose serious risks to human health and the environment. The countries of the Region take different stances regarding the ban on dumping of wastes at sea with Japan stating in 1993 that it will continue to dump industrial wastes at sea and China and Russia abstaining (Valencia 1998).

3.1.1.3. International Convention for the Prevention of Pollution from Ships

Another important multilateral instrument regulating specific sources of pollution relevant to the Region is the International Convention for the Prevention of Pollution from Ships of 1973, also known as MARPOL 73/78. All of the 5 countries of the Region are Parties to the Convention. The Convention was modified by a Protocol and adopted in 1978. It entered into force in 1983. The Convention contains general provisions for all oceans. MARPOL regulates the prevention of all sources of marine pollution coming from ships. The Convention covers pollution by oil, sewage, garbage from ships, air pollution from ships, harmful substances from packaged form and pollution by noxious liquid substances. As marine traffic is intense in the Region and also because of past experiences of oil spills from tankers on the Sea of Japan, this Convention is very important to the region.

3.1.1.4. Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is also crucial in a general way that it calls for the Parties to conserve and use their biodiversity, both terrestrial and marine, in a sustainable manner. This implies that Parties to the CBD are encouraged to use their biodiversity as they please, but also to ensure its sustainability. In this regard, all activities including pollution that would have an adverse impact on terrestrial and marine biodiversity must be avoided and activities are assessed (Article 14) before they are pursued.

Assessing activities before they actually begin would minimize the risks or harm that may occur as a consequence of the activity. Again, the 5 countries of the Region are parties to the CBD and are obliged to carry out the activities in accordance with the spirit of the CBD. The Sea of Japan is regarded as an enclosed sea and as urbanization and development along the coastal areas and the sea increase, the ecosystems and the biodiversity can be threatened significantly. To this end, major activities that have the potential of causing significant harm to the environment have to be assessed and avoided.

3.2. Bilateral and Regional Arrangements

In addition to the global multilateral arrangements there are some bilateral and regional arrangements relevant to some of the major environment and development issues in the Region. These arrangements include UNEP's Regional Seas Programme, the bilateral arrangements between Japan and Russia (Nuclear issues – dismantling, clean-ups, dumping, etc.) and Japan and Korea. The cooperation between Russia and Japan is on nuclear, environmental and territorial issues. The arrangement between Japan and South Korea concerns the development of deep seabed resources.

3.2.1. UNEP Regional Seas Programme (North West Pacific Action Plan)

As countries around the world realize the importance of economic development from the contribution of marine resources, they are beginning to incorporate conservation and sustainable use of their marine resources into development projects. The United Nations Environment Programme (UNEP) through its Regional Seas Programme has been taking the lead in such initiatives to address the multidimensional issues affecting marine and coastal areas. Thus, the Northwest Pacific Action Plan (NOWPAP) was created as part of UNEP's program for its member countries to collaborate and cooperate in managing marine pollution and for mutual assistance on marine pollution preparedness and response to pollution in the Region. NOWPAP has some framework to deal with marine pollution arising from ships.

However, no regional Convention has evolved from this initiative to date. If there were to be one there is still a long way to go in securing consensus from the member states due to a number of practical problems that the program is struggling with and needs to settle for effective outcomes. The primary problem stems from the different levels of financial, technological, infrastructure and political conditions of the member countries. These differences influence the various stances and approaches member countries tend to pursue. First, some countries are dissatisfied with the definition of the region. China and South Korea want to focus on Yellow Sea with Japan wishing to focus on the Sea of Japan as Yellow Sea is irrelevant. Second, on priority areas for cooperation, regional assessment, establishment of database, monitoring and cooperation in emergencies have been suggested, but again there was disagreement on the areas by member countries. While China, North Korea and Russia supported monitoring, Japan saw this as unnecessary and would be redundant because it is already at an advanced stage of monitoring. A third disagreement was on discharge standards. China who places emphasis on development takes a stance to pursue industrial development and North Korea is unwilling to cooperate. In addition, given the differences in the kind of technologies used, uniform discharge standards will be hard to achieve. Fourthly, the financing of the projects had caused some friction where China, North Korea and Russia may not have the financial ability to contribute the amount expected to manage the program. This would mean that Japan and South Korea would be funding most of the program where this may cause some reluctance by the two countries. In addition, Japan does not have official ties with North Korea and this may further cause some hesitancy on the side of Japan. As can be imagined, if most funding had to come from Japan and South Korea the leadership issue has to be settled. (Valencia 1998) The leadership issue has been settled between Japan and Korea.

Despite the challenges, Japan following the World Summit on Sustainable Development (WSSD) has recently vowed to strengthen its regional cooperation through the UNEP Regional Sea Action Plans, especially through NOWPAP.

3.2.2. Japan-Russia Joint Efforts for Denuclearization, Disarmament and Environmental Protection

Nuclear weapons have a very high potential of

cause mass destruction to both humans and the environment. Given Russia's history of nuclear weapons buildup and now faced with the challenge to denuclearize it after the collapse of Communism, Japan has stepped in to assist Russia in efforts to disarm and denuclearize the nuclear weapons in efforts to ensure safety for human health and the environment of the Region. The Japanese Government has been providing US$70 million to Russia since 1993 to denuclearize the nuclear weapons. This will perhaps continue for some time.

3.2.3. Japan-South Korea Arrangement

Japan and South Korea have a bilateral agreement to cooperate in developing the southern part of the continental shelf adjacent to the two countries. The Agreement specifically relates to developing natural resources including petroleum (natural gas) and other underground minerals. In this development agreement there are certain provisions that provide for the prevention of pollution of the sea that may arise from the exploration or exploitation of the natural resources (Article XX).

Generally, the Region compared to its neighbors especially the Association of Southeast Asian Nations (ASEAN) and the South Pacific Region, is faced with many problems at different levels of cooperation. The Region lags behind on collaborative and cooperative initiatives regarding its common environmental concerns. The ASEAN which was created initially to cooperate on social and economic issues have expanded into addressing environmental concerns of the region. The South Pacific Region is perhaps the most developed of the three regions. They have established the South Pacific Regional Environment Programme (SPREP) which specifically deals with regional environmental issues and has a number of programs regard various thematic areas ranging from climate change issues to marine conservation. ASEAN and SPREP respectively have established numerous Conventions whereas the Pan-Japan Sea Region is still yet to achieve that level of concreteness. In fact, it can be said that initiatives are fragmented, less-developed and countries have too many differences including national interests and approaches that tend to keep the countries apart in the Region. It will take some to for the Region to reach the level that SPREP and ASEAN are at currently. In the mean time, instruments and approaches existing at the national and global levels must be considered and applied in order to put the breaks on environmental destruction in the absence of a regional organization or overarching mechanism to deal with environmental and related issues facing the Region.

3.3. Interim Measures to Ensure Environmental Security and Safety

Before any institutional framework for the region is established to deal with the regional environmental and related issues, it will take some time. For the interim, what might be useful under the circumstances would be to apply some common principles and tools or instruments to guide the countries to ensure environmental security and safety. Some of these common principles are found in both hard law and soft law instruments existing in bilateral and multilateral instruments. And they include limited territorial sovereignty, the precautionary principle, environmental impact assessment (EIA), exchange of information, knowledge and awareness and the human rights law. Some are old and others have entered into the environmental law and policy arena in the last 3 or 4 decades.

3.3.1. National Sovereignty

Under international law, national sovereignty is and has always been the fundamental principle upon which states have based their actions upon in relation to their interaction with each other and also to carry out activities within their jurisdictions. Based on this principle states have the authority to use, exploit and destroy the environment within their jurisdiction as they please without interference externally. (de Klemm and Shine 1993) While this is a right of states, they also have a responsibility-also fundamental to international law. In the past national sovereignty was regarded as absolute. However, with the increasing environmental pollution and destruction causing damage to human health and the decline in biodiversity countries began to take a positive approach by observing their obligations more than their rights with regard to the use and exploitation of the environment. They began to realize that while they have the right to conduct activities within their jurisdiction, they also have a responsibility to not cause harm to the

environment within their own jurisdiction and of others alike. They began to realize that the environment even within their own jurisdictions that fall under the national sovereignty rule was a common heritage of mankind and use of it must be sustainable so as to maintain it in the state that is fit to be handed down to future generations. With this stance there was a shift from absolute territorial sovereignty to limited territorial sovereignty. (Plater et al. 1992) This is something which is very natural as rights always have limitations in that rights are to be exercised in such a manner that other right holders do not suffer damages as a result of abuse. In other words this principle is the good neighborly law where one conducting activities is also required to take precaution so as not to injure or infringe upon its neighbor's rights and interests.

3.3.2. Precautionary Principle

The precautionary principle is a relatively new principle that evolved out of the German environmental law and policy arena and has quickly entered the global environmental law and policy platform. It has also entered the domestic environmental law and policy fora of other countries. In fact, this principle evolved as a response to meet the problem of avoiding activities that have the potential of causing serious or irreversible damage. The lack of scientific information or evidence in determining risks or harm should not be a reason to pursue the activity. In fact, the lack of scientific uncertainty should be the reason that countries should refrain from conducting activities that may cause significant damage. It is currently being applied to many areas of environmental concerns that are believed to involve risks and harm, but lack scientific information or evidence. The logic behind taking precautions in the absence of scientific information or evidence is to prevent the unexpected consequences that may evolve if the activity were carried out. As the saying goes "prevention is better than cure" and this principle exists to give effect to this maxim.

3.3.3. Environmental Impact Assessment

Nowadays, most international environmental instruments provide for Environmental Impact Assessment (EIA). For instance, the UNCLOS (Articles 205 and 206), (Kimball 2001) the CBD (Article 14) and the Rio Declaration (Principle 17) all provide for EIA. Similarly, most countries have incorporated EIA and require those intending to conduct activities to assess possible adverse effects of planed activities. In the event of a region, countries are required to consult with potentially affected neighboring states. The countries of the Pan-Japan Sea Region are obliged under international law, both soft and hard, to assess possible effects of planned activities and consult with each other to prevent significant damage to the marine environment. This process is important in that risk minimization will take place and may save costs and even harm from occurring.

3.3.4. Exchange of Information, Knowledge and Awareness

One crucial matter that can contribute tremendously to achieving better results in environmental governance or management is the availability of up-to-date and accurate information. The availability of information can raise the awareness of those that intend to contribute to environmental conservation and protection. However, information is not readily available to many today. There is in fact an imbalance in the distribution of information in the globe today. At often times, the poorer countries do not have the appropriate information to facilitate their efforts of environmental decision making and management. This requires the sharing and exchange of information between and among countries. This is particularly important for countries in a particular region. In our case it would be the countries of the Pan-Japan Sea Region exchanging information. Collaboration of the countries in the Region at this level is significant. The existence or non-existence of information can make a big difference. For instance, the availability of information can allow one to be engaged in achieving effective environmental protection or be prepared for emergencies. The worse could happen if information is not available as was seen in the case of the Chernobyl explosion. Thus, most of the soft and hard laws encourage the exchange of information between and among countries in order to engage in effective environmental management.

Although each of the instrument or principle described above has something valuable to contribute, it may have limitations as a 'stand

alone' approach to put brakes on the environmental problems. (Gunningham, Grabosky and Sinclair 1998) It is therefore encouraged that a set of principles, instruments and conventions combined and applied simultaneously may yield more effective results.

4. The Future Outlook

The future of the Region is one of a mixed nature. From the facts and situations existing in the region as can be witnessed from above there are prospects for growth and development, but simultaneously there are also risks that may spur off serious problems. Whether the results are positive or negative will depend largely on whether the countries of the region cooperate and work together in the spirit of consensus or if the contrary is promoted. The negative results are not favorable to any one country and must be avoided at all costs.

The Region has a very promising future in terms of its economic and social development. For instance, China's cheap labor, the natural resources especially minerals, petroleum and forestry existing in Russia, the fisheries resources in the Sea of Japan and the technology embraced by Japan and South Korea. If such resources were managed and used wisely within a coordinated regional framework, they can contribute to building an economic block for the region which would in turn contribute to the domestic and global economies. In order to exploit the potential role the region can play, a number of prerequisites must be met based on the existing facts and situation. Such prerequisites include the establishment of a regional organization, streamlining existing initiatives, and employing the inter-linkage approach. In other words the supporting structures are needed to enhance the potential of the Region.

4.1. Need for Regional (Umbrella) Organization

To date, a concrete and all encompassing regional organization that could address sustainable development is lacking in the Region. The need to establish a regional organization to facilitate cooperation has been proposed in the past, but this idea has failed to materialize. (Lopez-Reyes 2000) Instead, there are bilateral arrangements or countries striving individually to manage and develop their resources to boost economic development while at the same time maintaining ecological balance and stability. Even on an individual basis, Japan contributes significantly to the world in terms of technological, financial and technical dimensions. As described earlier NOWPAP exists to deal with marine pollution from ships, but it is faced with a number of problems. Other numerous initiatives are fragmented such as the bilateral arrangement between Russia and Japan or South Korea and Japan. The question now arises as to whether bilateral and individual efforts are sufficient. For some the answer may be yes. They may be content with the current situation and see no need in creating a regional organization or regional block, such as the European Union (EU), ASEAN or SPREP to deal with common areas affecting the region.

However, there are many good reasons why creating a regional organization to deal with economic, environmental and social issues affecting the region might be necessary. First, a regional organization will provide an opportunity for the countries of the region to coordinate among each other to contribute to sustainable development (especially to achieve further economic development, environmental security and social development) in the Region. Second, it will also allow for the countries in the Region to share limited resources. There is an imbalance in various sectors among the countries in the Region, especially in terms of financial, technological, and administrative capacity. Regional cooperation may enable mobilization of such resources to ease burdens. This can have a reciprocal impact and benefit each other. The third reason why a regional organization may be necessary is to maintain a balance in all sectors affecting the region. For instance, environmental pollution in the region can be a source of other conflicts leading to instability and slow progress. But if collective action were taken through a regional framework this may pave the way for peace, sustainable development and the contribution to the Region and the world.

4.2. Inter-linkages Approach

Another possible approach that may be useful in addressing common regional environmental issues is the inter-linkages approach. At present there are a number of multilateral environmental

agreements which the 5 countries of the region are members. In order to achieve an integrated approach to environmental decision making and management, it is crucial to employ the inter-linkages approach. (UNU-IAS 2004) This approach will among other reasons prevent redundancy in implementation of environmental agreements, hence, allowing the wise use of limited resources. As our discussion concerns the Pan-Japan Sea Region, regional institutions are required to facilitate this approach. At this stage NOWPAP is the only regional initiative that exists, but as discussed above, it lacks the capacity at the administrative, technical and financial level to take on new or overarching initiatives. (Valencia 1998) There is a need for expanding existing institutions or either for the establishment of new institutions to address sustainable development in its entirety. Only when there is a regional organization and a framework can one streamline existing initiatives or take on new tasks affecting the Region.

5. Conclusion

The Pan-Japan Sea region can play a significant role in the region and the world as a whole in economic, environmental, social and political dimensions. The region contributes about 1.1 percent of the global trade which is small due to 3 socialist economies. However, there is potential for more contribution due to the recent changes of economic principles of the 3 communist countries. However, individual countries especially Japan contributes considerably to the global economy and also in terms of financial aid or technical assistance. China and Russia are growing very fast and South Korea is on its way to a developed nation. In this regard, the region has the potential to expand further.

The activities and growth in the region have however, contributed to the environmental pollution and degradation in the region of which acid rain, oil spills, nuclear contamination, and air pollution are among the problems facing the Region. Most of these problems are transboundary in nature. With transboundary pollution, there is a potential for spurring off political and other conflicts. And conflicts are often the cause for instability in a country, region or the world. Without stability economic and social development can be hindered or halted. It is important now when the risk is realized for countries of the Region to take measures that would avoid conflict and instability. It is very easy for conflicts to occur in the Region because historically this Region has been experiencing conflict and instability of serious nature and tensions still remain.

However, there is also potential for the region to develop more. When there is growth and development, the Region can play an even bigger role in world affairs. Its success will largely depend upon whether countries collaborate or not.

One way forward might be to establish a regional organization that could deal with affairs in the Region. This may prompt a new era in the Region where trust must be restored and should form the basis for cooperation and sustainable development in the Region. This will require a step-by-step process beginning with the reeducation of its citizens and the establishment of a regional organization to deal with economic, social and environmental sectors. Once this is achieved the strategies including inter-linkages approaches would require the streamlining and integration of existing tools, principles and instruments to enable effective environmental decision making and management to occur. Moreover, supporting structures are required for any success in achieving sustainable development in the Region. Supporting structures refer to the institutions and the resources needed to facilitate the capacity of an institution for its effective functioning. That is something that is lacking in the Region.

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