

Toward Establishing the Marine Peace Park

in the Western Transboundary Coastal Area of the Korean Peninsula

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KMI
SPECIAL SUMMARY REPORT
2007



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ACKNOWLEDEMENTS

Korea Maritime Institute would like to thank the members of the International Advisory Group (IAG) for their assistance in developing the promotional strategies for the establishment of a Marine Peace Park in the western transboundary coastal area of the Korean Peninsula.

IUCN	Peter Shadie, Hyun Kim, Trevor Sandwith
NOWPAP	Jeungsook Park
UNESCO	Salvatore Arico
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FOREWORD

As the world becomes more global, cross-border interactions and cooperation have substantially increased. The present international borders have been drawn for political purposes. However, political boundaries do not limit plant and animal species and communities. Many countries in the Northeast Asian region, which encompasses the Korean Peninsula, share common biological and natural resources beyond boundaries. Moreover, exchanges of people and goods are growing rapidly due to accelerated industrialization and urbanization in the region. Therefore, a strategic framework for transboundary conservation is vital to protect ecosystems and provide economic opportunities to local inhabitants. In addition, it can help resolve longstanding territorial disputes between the two countries by providing an effective way to reach a lasting peace settlement.

Inter-Korean relations have been unstable due to North Korea's nuclear issues and deteriorated U.S.-North Korea relations. However, through the 2007 South-North Korean Summit, the two Koreas have agreed to work together for forging a permanent peace regime on the Korean Peninsula, ending military tensions, and expanding South-North cooperation in politics, economy, and humanitarian projects. Moreover, the summit yielded a variety of cross-border cooperation projects, like the creation of a joint fishing area and economic zone along the disputed western sea border. In this context, people's interest in the rational and sustainable use of transboundary areas such as Demilitarized Zone (DMZ) and coastal areas of the West Sea will be greatly increased in the near future. Growing exchanges and cooperation on these transboundary areas will lay a cornerstone to generate more social, political, and economic progress between North and South Korea.

A useful mechanism for promoting the sustainable use and management of transboundary resources (biodiversity, natural resources, cultural heritage) needs to be developed. For instance, on land areas, there have been several initiatives to designate the DMZ as a Biosphere Reserve of UNESCO. On the other hand, the need for developing an effective transboundary mechanism to manage coastal and marine areas has been raised in recent years. The strategies for establishing a ‘Marine Peace Park’ has been developed by the Korea Maritime Institute since 2005. It will be a strategic management tool to achieve the protection of biodiversity and cultural resources, and the establishment of a firm basis for peace promotion and economic development in the transboundary coastal areas of the West Sea.

This report will contribute to facilitating inter-Korean exchanges and cooperation in the fields of socio-economic development and environmental protection, and reducing hostilities between the two Koreas through the establishment of a Marine Peace Park in the western transboundary coastal area. I sincerely hope that the successful establishment of a Marine Peace Park and other collaborative efforts will further improve inter-Korean relations and help build an enduring peace regime on the Korean Peninsula

Jeong-Hawn Lee
President
Korea Maritime Institute

Summary

This study aims to suggest the effective strategies to be followed for enhancing the cooperation between North and South Korea in the western transboundary coastal area of the Korean Peninsula through the establishment of a Marine Peace Park. The need for and feasibility of building a Marine Peace Park in the western transboundary coastal area is examined in this paper. Natural environmental features, socio-economic features, the political-military environment, and the legal and institutional arrangements of the area are thoroughly analyzed for designating and developing the Marine Peace Park initiative. The basic principles, the promotional strategies, and the stepwise plans for the successful establishment of the Marine Peace Park are elaborated as well.

Through careful examination of the potential Marine Peace Park in the transboundary coastal area, the study is intended to contribute to the peace settlement, the protection of precious coastal and marine ecosystems, and the facilitation of local economy development on the Korean Peninsula, by laying a strengthened foundation for inter-Korean cooperation in coastal and marine areas.

Keywords: Marine Peace Park, the MPP Korea, the Western Transboundary Coastal Area, 3Ps (Peace, Protection, Prosperity), the Special Peace and Cooperation Zone in the West Sea.

Abbreviations and acronyms

ADB	Asian Development Bank
COD	Chemical Oxygen Demand
COMPAS	Co-managed Marine Protected Area System
DMZ	Demilitarized Zone
DPRK	Democratic People's Republic of Korea
EAS	East Asian Seas
EABRN	East Asian Biosphere Reserve Network
ESCAP	Economic and Social Commission for Asia and the Pacific
EU	European Union
GIC	Gaeseong Industrial Complex
GIS	Geographic Information System
IAG	International Advisory Group
ICM	Integrated Coastal Management
IUCN	The World Conservation Union
KMI	Korea Maritime Institute
LME	Large Marine Ecosystem
MALITA	Marine Litter Activity
MARPOL 73/78	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978
MOMAF	Ministry of Maritime Affairs and Fisheries
MPP	Marine Peace Park
NEAC	Northeast Asian Conference on Environmental Cooperation
NEASPEC	North East Asian Sub-regional Programme of Environmental Cooperation
NGO	Non-governmental Organization
NOWPAP	Northwest Pacific Action Plan
NLL	Northern Limit Line
PEMSEA	Partnership in Environmental Management of the Seas of East Asia
ROK	Republic of Korea
RSMPP	Red Sea Marine Peace Park
SEA	Strategic Environmental Assessment
SPCZ Arrangement	Special Peace and Cooperation Zone in the West Sea
TEMM	Tripartite Environment Ministers Meeting
The MPP Korea	Marine Peace Park of Korea
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations of Development Programme
UNEP	United Nations of Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
U.S.	The United States of America
WWF	World Wildlife Fund
YSLME	Yellow Sea Large Marine Ecosystem

1. Introduction

The historic Joint Declaration on the Advancement of South-North Korean Relations, Peace and Prosperity, signed by South Korean President Roh Moo-hyun and North Korean leader Kim Jong Il, has opened a new era of peace and prosperity on the Korean Peninsula¹. It is certain that the leaders of the two Koreas have laid a foundation for a permanent peace regime in the Korean Peninsula through this Joint Declaration. In addition, they have agreed to promote mutual growth through inter-Korean economic cooperation in various fields, and to create a Special Peace and Cooperation Zone (SPCZ) in the West Sea. In particular, the establishment of the SPCZ in the West Sea is opening a new phase of easing military tension in the West Sea and building a cooperative mechanism to manage coastal and marine resources.

“Benefits beyond Boundaries” was the theme adopted as a key measure for the conservation and sustainable use of the natural environment in the Fifth World Parks Congress, South Africa, 2003 hosted by the World Conservation Union (IUCN). It is believed that international cooperation beyond boundaries is an important milestone for facilitating the conservation of ecosystems and environmental resources in 21st century.

Trans-national cooperation among adjacent countries on the coastal and marine environment and resources have been arranged mainly through the frameworks of international organizations such as UNEP’s Regional Seas Programme, IUCN’ Transboundary Protected Area, Peace Park Foundation’s Peace Park, and UNESCO’s Biosphere Reserve(Nam & Kang, 2003).

Several binational initiatives have been developed around the world to cooperatively manage transboundary areas. It can be said that the most well-known binational project is the “Red Sea Marine Peace Park,” which founded in 1994 between Israel and Jordan. Israel and Jordan share 41 kilometers of shoreline around the Gulf of Aqaba, located at the northern end of the Red Sea. It is the northernmost tropical marine

¹ The second South-North Korea Summit was held on October 2-4 in Pyongyang, North Korea. The leaders of South –North Korea adopted the joint declaration at this summit.

ecosystem. But the area currently is being threatened by increased urbanization and uncontrolled development, which are having a negative impact on sustainable development of the area, particularly in the tourism sector that relies largely on clean water, beaches, and coral reefs. Recognition of the unique and fragile nature of the Gulf has led each country to undertake steps to protect the coral reefs and the environment (Israel Ministry of Foreign Affairs, 1997).

Yet, in spite of these individual efforts, the two countries recognized that joint research, monitoring, and management are required to protect the Gulf's coastal and marine resources. In 1994, during the Trilateral Peace Negotiation Process between Jordan and Israel with the support of the United States and international organizations, both countries agreed to develop a binational Red Sea Marine Peace Park (RSMPP). The RSMPP project was launched in September 1999 and laid the groundwork for a close working relationship between Israeli and Jordanian authorities by building scientific-based technical capacity of environmental monitoring in both countries and by extending the level of communication among involved stakeholders.

Moreover, other endeavors for creating a Marine Peace Park (MPP) have been made in the Coral Triangle between the Philippines and Indonesia, and the mouths of Bonifacio Strait in the Mediterranean Sea. The MPP initiative in the Coral Triangle is in the beginning stage and aims to provide a cooperation mechanism for both the Philippines and Indonesia in conserving and managing biodiversity and fisheries resources of the area, particularly tuna, while negotiations on delimitation of sea border between the two nations is ongoing. On the other hand, Bonifacio Strait is home to a rich biodiversity, with significant levels of endemism, as well as representative species such as whales, dolphins, monk seals, and turtles. And the Strait is one of the busiest navigation routes in the world, as designated by UNCLOS². As most countries in the semi-closed Mediterranean Sea have only declared their national interests within the 12 miles zone, a large percent of the sea remains declared as high seas. With the recognition that the high seas are no longer a kind of last frontier where human activities are undertaken at danger, the establishment of an International Marine Park in the Bonifacio has been developed since 1992 and the project is currently ongoing.

² United Nations Convention on the Law of the Sea

Nonetheless, even though the two Koreas are sharing the sea areas, and have experienced the same oceanographic changes in the past, inter-Korean cooperation in the coastal and marine environment area has not yet been realized. Political-military tension between the two countries has, however, fortunately been alleviated through the continuous economic and cultural exchanges. For instance, a variety of initiatives to protect a rich heritage of natural resources in the Demilitarized Zone (DMZ) have been developed or implemented by both Koreas. Yet, the western transboundary coastal area(hereafter: the area) where inter-Korean cooperation will be promoted- not only in the coastal and marine environment, biodiversity, and ecosystems, but also in economic development- has faced two naval conflicts (in 1999 and 2002) over blue crab catching and the jurisdiction of shared sea areas. In addition, there is relatively little interest in systematically managing valuable ecosystems and ensuring the sustainable use of coastal and marine resources of the western transboundary coastal area. This is due to its unique geographic characteristics, since the area has been isolated from socio-economic uses because of the long-lasting military and political conflicts on the Korean Peninsula.

The Korea Maritime Institute (KMI) is a research institute responsible for developing national policies on the marine sector and funded by South Korean government. In 2003, KMI initially suggested a co-managed marine protected area system (COMPAS) and its practical initiative, which is the establishment of a Marine Peace Park in the western transboundary coastal area of the Korean Peninsula (hereafter: the MPP Korea or the MPP initiative) to the South Korean government. And then, the MPP initiative was finally adopted as a national marine policy by the government of South Korea in 2005.

Under these circumstances, the MPP Korea aims at enabling both Koreas to achieve the peace settlement, the protection of precious coastal and marine ecosystems, and the realization of economic prosperity in the western transboundary coastal area. The MPP Korea is a co-managed multi-purpose framework for the protection of biodiversity and cultural resources, and the establishment of a firm basis for the peace promotion and economic development.

This research intends to develop effective policy directions and strategies to establish a Marine Peace Park in the western transboundary

coastal area of the Korean Peninsula. The research, consisting of four chapters, begins with an Introduction Part which contains background, purpose, and contents of the research. In Chapter 2, the natural environment, socio-economic environment, political-military environment, and the relevant legal systems of South and North Korea are examined. In addition, public awareness on building a Marine Peace Park in the area was analyzed by conducting the surveys among local residents, relevant experts, and ordinary people. Based on the survey results, SWOT analysis was conducted to diagnosis potential and present conditions for the establishment of the MPP Korea. In line with Chapter 2, Chapter 3 provides basic principles, promotional strategies, and stepwise plans for facilitating the MPP Korea. And in Conclusion, Chapter 4, the importance of the MPP Korea is emphasized again through reflecting the fact that the recently increased exchanges and cooperation between the two Koreas are forming a strategic framework to achieve the objectives of the MPP Korea.

2. The Conditions for Establishing the MPP Korea

2.1. Natural Environmental Features

The western transboundary coastal area shows the typical features of natural environment of the West Sea on the Korean Peninsula such as complex coastlines, wide tidal mud-flats, coastal sand dunes, and great tidal range. In the most sea areas around the Korean Peninsula including the West Sea, alluvial deposits (sands), which were formed during Holocene transgression, are widely distributed (Kim, 2002). Along with deposits, there is another factor that influences the coastal and marine environment. It is geological and planetwide changes by the transgression, regression and upheaval that resulted from the past repetitive interglacial period and glacial epoch during the geologic eras. The West Sea has also experienced these geological changes, and it has been known that the western sea area was formed by the accumulation of deposits with the environmental conditions of the warm and shallow inter-tidal zone (Martin *et al.*, 1993).

The northernmost of five major islands³ in the West Sea, Baekryeong Island was mainly formed with metasedimentary rocks composed of quartzite, shale, and slate of the late Proterozoic Sangwon system of Precambrian era, and also covered with the alluvial layer, whinstone, and a fault line (Na and Lee, 1987). Therefore, the geological strata of Baekryeong Island, Daecheong Island, and Socheong Island have developed sea cliffs such as vertical precipices created by waves. In contrast, Ganghwa Island, the fourth-largest island in Korea following Jeju Island, Geoje Island, and Jin Island, is geologically composed of granite. There are relatively many mountains in Ganghwa Island compared to other western coastal areas. But it is composed of granites intruded in the era of Jurassic Daebo orogeny. And the mountains distributed on nearby Seokmo Island, Jumun Island, and Acha Island are also composed of the same granites (Seo & Yoon, 2001).

Hwanghaenam-do⁴ has been known to have severely curbed coastlines due to wide tidal range. In particular, there are about 10 sites of coastal

³ Baekryeong Island, Daecheong Island, Socheong Island, Yeonpyeong Island, and Woo Island.

⁴ “do” means a province.

sand dunes with a length of over 15km and 2km width with 5~20m height(Song, 1989). The famous coastal sand dune in North Korea is Monggeumpho, which is designated as Natural Monument No.142 in North Korea. Monggeumpo is 11.7km distant from Ryongyeon Town. It is supposed that the sand dune was formed by the weathering of quartzite bed created in geologic eras 1.1~1.2 billion years ago, being transferred to the sea and moved by the tides, and being moved to the land by wind to be accumulated as a form of sand dune.

With regard to climate conditions in the western transboundary coastal area, the area's average annual temperature is 10.1~11.2°C and annual rainfall is 940~1,300mm. It seems to have higher average annual temperature and rainfall as moving up north to south, and sea to land. Mostly the weather is clean but it has strong wind and frequent dense fog in May~July that directly influence on the operation of a regular shipping line.

As for sea water quality, it was difficult to obtain North Korea's data. But we could obtain the data for nutritive salts in the tideland of the Yellow Sea. Bae & Jeong (1986) reported that Hwanghaenam-do coastal area showed 0.02mg/l nitrate, 0.0233mg/l phosphate, and 0.350mg/l silicate. But in another report (Lee *et al.*, 1998), the phosphate concentration was measured in 0.0027~0.0035 mg/l. Thus it is required to examine the credibility of data carefully when we can access more recent data of North Korea.

In the meanwhile, the western transboundary coastal area is not within the scope of the National Network for Marine Environmental Monitoring since people are difficult access there, given the political-military circumstances between the two Koreas. But we can indirectly measure sea quality of the area through analyzing the data from Incheon coast. Incheon coast has total 18 core points and one shipping core point in the National Network for Marine Environmental Monitoring. After examining the data from core point 1 and 2 which are located between Yeomha waterways and southern Ganghwa Island, COD⁵ maintained Grade II in both bottom and top water until 2002. But the quality of the bottom water has decreased to Grade III since 2003 and also the quality has gradually worsened in its top water.

⁵ Chemical Oxygen Demand

There are three rivers (Han River, Imjin River, Yeseong River) flowing into the West Sea. The Han River located in South Korea, is the confluence of the South Han River, which originates in Mt. Daedeok (Samcheok, Gangwon-do), and the North Han River, which originates in North Korea's Mt. Geumgang. The Han River flows through Seoul to the West Sea (Yellow Sea) and it is the greatest river in the middle area of Korea with 25,954km²(9,816km²: North Korea) of drainage area, 494km of flow length. Its average annual rainfall is 1,301mm, which is a little higher than that of the national average (1,274mm). The average annual outflow is 18.9 billionm³– the highest value on the Korean Peninsula. The Imjin River, a tributary of the Han River, flows through both North and South Korea and forms an estuary with the Han River. The Imjin River's drainage area is 8,117.5km², of which 62.9% of 5,108.8km² is located in the northern part of the DMZ, and flow length is 255km. The average rainfall in these regions is 1,270mm, which is similar to the national average. And the key feature of the Yeseong River is that the typical range is about 8~10m and then a tide is a force to maintain a dynamic relationship at the confluence between the Han River and Imjin River.

Ecologically, this area has been used as an important habitat and migratory corridor for bird species. Firstly, over 300 black-faced spoonbills (*Platalea minor*) were found in this area. It is known that worldwide there were a total of only 600 black-faced spoonbills (Kim *et al.*, 1998), which shows that the area has a significantly important ecological value that must be protected and conserved. The black-faced spoonbill was designated as a Natural Monument No.205 in 1968 by the Cultural Heritage Administration in South Korea. And it is also listed as an endangered species (first-level) by the Ministry of Environment of South Korea. For North Korea, all species of birds are protected by law. The black-faced spoonbill is no exception to this. In addition, four islands that are vital breeding grounds to the black-faced spoonbill have been designated as protected areas and Natural Monuments as well.

Secondly, Chinese Egret (*Egretta euophotes*) inhabits Shin Island (Natural Monument No.360) in Onjin-gun, and about 400 nests were found in 1991(Swennen and Won, 1993). North Korea has also reported observation data for the Chinese Egret (Lim *et al.*, 2004). In North Korea, 50~150 Chinese Egrets have been known to live on Nap Island and Muki Island of Seoncheon-gun of Pyeonganbuk-do, over than 150 on

Baekryeong Island, 50~130 on Hamseongryeon Island, and 400~800 on Deuk Island and in Geumseong tidal land of Pyeongannam-do.

Finally, Manchurian Crane (*Grus japonensis*) was distributed in Mundeuk-gun⁶ and Oncheon-gun of Pyeongannam-do in the estuary of the Cheongcheun River and Eunryul-gun and Ryongyeon-gun in Hwanghaenam-do in autumn (Wild Bird Society of Japan, 1996). On the other hand, the western islands are providing a migratory corridor and habitats for various living resources. Baekryeong Island is located in the migratory route for raptorial birds and Scolopacidae, and White Stork (Natural Monument No. 199) and Falcon (Natural Monument No. 243) were also found in October 1995⁷.

Ganghwa Island, located in the estuary of the Han River is the fifth ranked tidal mud-flats in the world sustaining various living creatures such as corb shell, short-necked clam, and red-clawed fiddler crab. Especially, the Ganghwa tidal mud-flats were designated as a breeding site for the Spoonbill. Besides, Charadriiformes and Charadriidae are observed in spring and autumn on Kyodong Island. Additionally, Dunlin, Great Knot, Bar-tailed Godwit, Kentish plover, and Mongolian Plover, which completed the propagation in Russia and Alaska and migrate to Southeast Asia, Australia, and New Zealand from this region in September ~ October, are also observed.

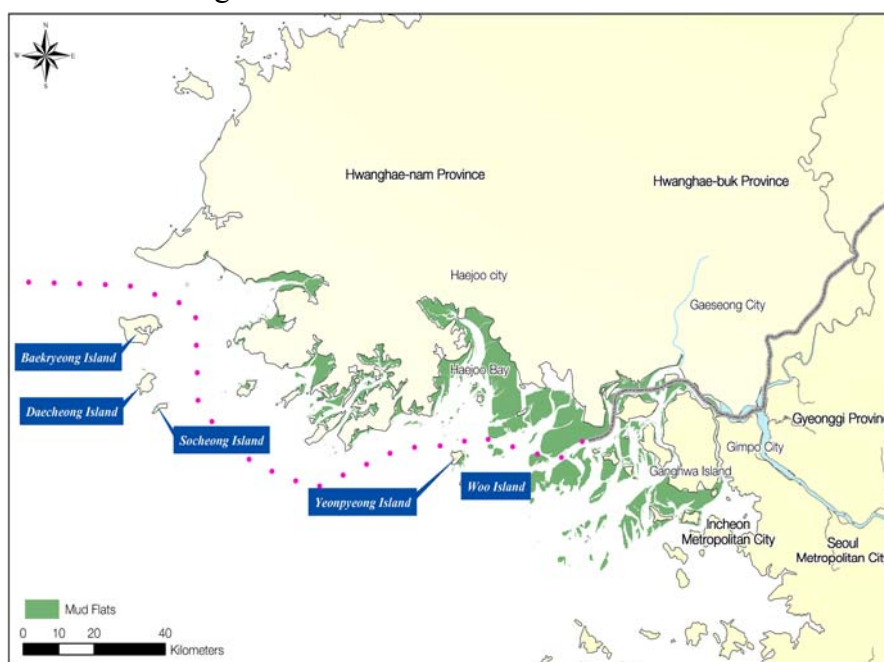
Interestingly, mammalian species (whales, spotted seals) are also found in the area. The seal species on Baekryeong Island is a spotted seal (*Phoca vitulina largha*) but it was misunderstood as a Harbor Seal. Different from the harbor seal that lives in warm places, the spotted seal lives in the Arctic Ocean and Alaska, and it has been known that Baekryeong Island is the southernmost habitat for spotted seals⁸. About 300 spotted seals are found on this island.

⁶ “gun” means a county.

⁷ Bang *et al.*, Development of Community Cooperative Model for the Management of Province Jurisdictional Well-preserved Ecosystem, pp.59-63, 2003.

⁸ See http://nmml.afsc.noaa.gov/education/pinnipeds/spotted.htm_2005.8.1

<Figure 2-1> Distribution of tidal mud-flats



Source: Nam *et al.*, 2005.

Furthermore, many living organisms are living in the tidal mud-flats of transboundary coastal area. In the study conducted in the tidal mud-flats of Ganghwa Island for a year (from June 1998), a total of 36 species and 9,321 individual creatures were found (Hwang *et al.* 2003). It was surveyed that 27 species were fish, six species were crustaceans, and three species were for aquatic invertebrates. The greatest habitat of blue crabs is the area between Seosan-gun, Chungcheongnam-do and Yeonpyeong Island, Incheon Metropolitan area. About 75% of the total national blue crabs volume was produced in the Incheon Metropolitan area. But its ratio has drastically decreased since 2003 due to illegal fishing activities by foreign vessels and land-based development activities (<Table 2-1>). North Korea has also caught blue crabs in the region. The annual yield of blue crabs by North Korea was estimated at 3,000 tons in 1998. North Korea has exported the most of its blue crabs to Japan in order to increase foreign exchange reserves.

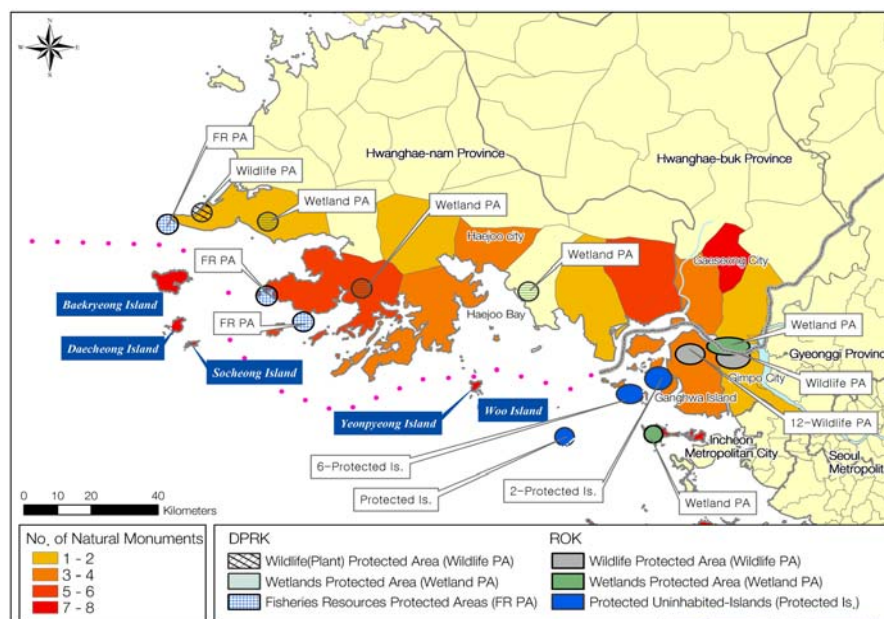
<Table 2-1> Changes in South Korean yields of blue crabs

Yr.	Category	2000	2001	2002	2003	2004	2005
Incheon	Yield (M/T)	9,538	9,918	14,281	6,547	1,390	872
	Production (1000 won)	96,920,209	99,077,162	118,042,671	82,971,636	29,282,866	13,483,997
Nationwide	Yield (M/T)	12,842	13,016	18,659	9,478	2,683	2,403
	Production (1000 won)	125,158,784	134,818,917	163,420,255	126,549,670	51,833,692	35,445,416

Source: Ministry of Maritime Affairs and Fisheries, 2005.

The western transboundary coastal area comprises an important natural environment with large-scale coastal sand dunes and breeding sites for many endangered species. In addition, it provides abundant fisheries resources that are directly linked to local economy development. Thus South-North Korea is protecting this area by designating coastal and marine protected areas. South Korea has 24 and North Korea has 44, respectively.

<Figure 2-2> Coastal and marine protected Areas (ROK: 24, DPRK: 44)

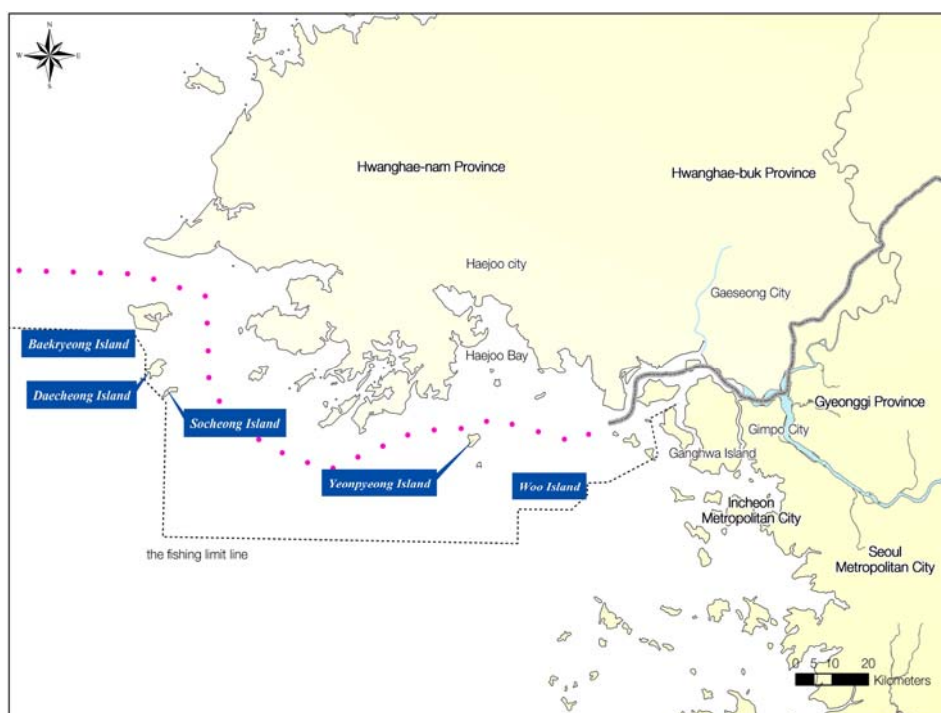


Source: Nam *et al*, 2005.

2.2. Socio-Economic Features

The research area includes western 5 islands and sea areas in South Korea, and the land areas of Ongjin peninsula (Daedong Bay-Haeju Bay) in North Korea. Related local governments are Gyeonggi-do and Incheon Metropolitan City of South Korea, and Hwanghaenam-do and Hwanghaebuk-do of North Korea. Associated cities and counties are Gimpo City and Ganghwa-gun of South Korea, Gaesung City, Haeju City, Ryongyeon-gun, Tatetan-gun, Ongjin-gun, Kangyeong-gun, Byeokseong-gun, Cheongdan-gun, Yeonan-gun, and Bacheon-gun of North Korea.

<Figure 2-3> Research area of the MPP Korea



Source: Nam *et al*, 2005.

The population of the MPP Korea research area in South Korea was 291,292 in 2004. Over the past five years, the average regional population of the ROK⁹ has increased by 4.68%. In contrast, the population of the Ganghwa and Onjin counties has decreased by 0.87%

⁹ South Korea is officially called as the Republic of Korea (ROK).

and 0.17% respectively. But there are no official population data released by the DPRK¹⁰.

An increase in the size of city areas in Hwanghaenam-do, Incheon Metropolitan Area, Gyeonggi-do showed relatively higher than the nationwide average change. The size of watershed in Hwanghaebuk-do, Incheon Metropolitan City, and Gyeonggi-do that plays a buffer zone preventing inflow of pollutants from the sea, has drastically decreased. As such, the land of this area is densely used due to rapid urbanization and the numbers of polluters, which will have an adverse impact on the coastal and marine environment, has been steadily increasing.

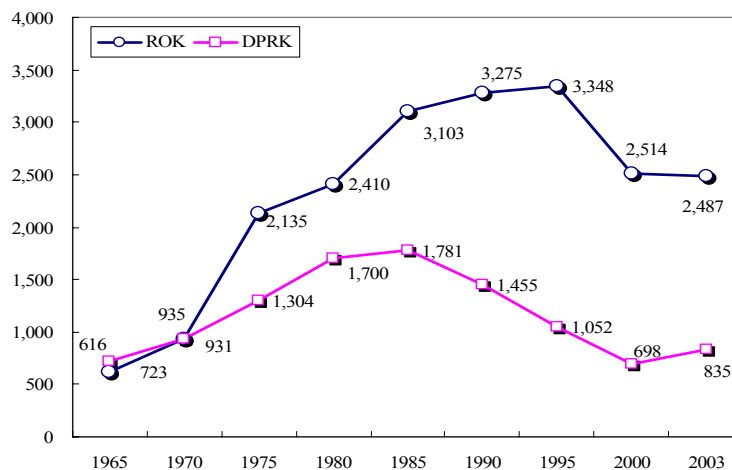
In the area, fishing is a major income source of local people of the two Koreas. The economic size of fisheries of this area accounts for a small portion of the national economy. But the dependency of the local residents on the fishing industry is very high and other industries such as tourism do not contribute much to the local economy. The DPRK is highly dependent on aquaculture rather than distant water fisheries or inland water fisheries whereas the ROK concentrates on catching blue crabs and on other fisheries resources by using vessels and aquaculture. Meanwhile, the DPRK has been faced with very serious problems in fisheries since the mid-1990s because fishing boats could not be mobilized owing to the lack of oil and the size of the fishing grounds has been diminished by land reclamation projects¹¹. As of 2003, North Korea's productivity was 835,000 tons lower than that of 1980 (1,700,000 tons).

In 2004, fisheries productivity of the area in the ROK totaled 4,702 tons, comprising 2,573 tons (54.7%) in Ongjin-gun, 2,129 tons (45.3%) in Ganghwa-gun. Ongjin-gun caught 1,153 tons of fish, followed by marine invertebrates, seaweed, and crustaceans in 2004. Within Ongjin-gun, Baekryeong Island had the greatest productivity of 2,011 tons; whereas Yeonpyeong Island produced 387 tons and Daecheong Island produced 175 tons.

¹⁰ North Korea's official country name is the Democratic People's Republic of Korea (DPRK). According to the report by the Institute for Far Eastern Studies of Kyungnam University in the ROK, the population of Hwanghaenam-do and Hwanghaebuk-do in DPRK was 2,345,386 in 1993.

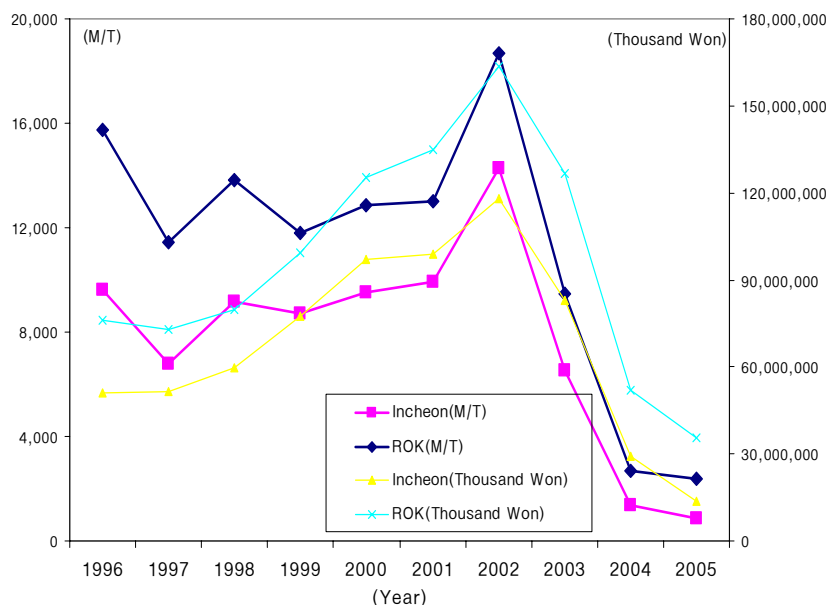
¹¹ Ministry of Unification, 2006

<Figure 2-4> North-South fisheries productivity (Unit: Thousand M/T)



Source: Korea National Statistical Office, 2005.

<Figure2-5> Blue crab production of the ROK



Source: Ministry of Maritime Affairs and Fisheries, 2005.

In the past, Ongjin-gun also focused on yellow corvine, but now its ratio has decreased. There was a big change in the fisheries productivity of Ongjin-gun from 2001 to 2004. In 2001, the productivity was 3,299

tons. But in 2004, it was 2,573 tons. Especially, the production of crustaceans, including blue crabs, had rapidly decreased by 86%, compared to that of 2001. For instance, Incheon Metropolitan City produced 14,000 tons of blue crabs in 2002. But it was substantially less in 2004(1,390 tons). Local community members blamed the cause of the production decrease on the deterioration of the ecosystem and uncontrolled fishing activities by foreign vessels.

The size of tidal mud-flats in the western coastal area is 1,445km²(ROK: 487km², DPRK: 958km²), accounting for 26 % of total Korean tidal mud-flats. So far, the DPRK has reclaimed 14% of tidal mud-flats in the area. And the reclamation projects of Incheon Metropolitan City and Gyeonggi-do have been considerably progressed by constructing airport facilities and development activities in urban areas.

<Table 2-2> Size of tidal mud-flats in the western transboundary coastal area

		Size(km ²)	Ratio (%)	Remarks
The western transboundary coastal area	DPRK	958	17.3%	30% of the DPRK's total mudflats
	ROK	487	8.7%	20% of the ROK's total mudflats
Sub-Total		1,445	26.0%	

Note: Total size of mudflats on the Korean Peninsula is about 5,550km² (DPRK: 3,000km², ROK: 2,550km²)

Source: Ministry of Maritime Affairs and Fisheries (2003), Nam *et al.*, (2005).

The DPRK is still in the nascent stage of economic reforms. Heavy industry, manufacturing, and chemical industry are concentrated in the DPRK. More than 70% of the DPRK's industrial facilities are out of date and they are not equipped with pollution prevention facilities because of the shortage of capital and technology.

During the 1990s, the inefficiencies of the DPRK's government-led economy, especially its promotion of state-owned heavy industries, along with high military spending (about 15-25% of GDP) combined with drought and floods pushed the economy into crisis. As the economy was slowing down, pollution caused by industrial activities also decreased. However, development pressure in the DPRK has been increased by the

recently promoted inter-Korean economic cooperation. Accordingly, environmental pollution will be generated more compared to the past (Lee et al., 2004).

The joint economic cooperation between North and South Korea is developing rapidly despite North Korea's testing of missiles and nuclear weapons. Gaeseong Industrial Complex (GIC) is managed by Korea's Hyundai Asan and Korea Land Corporation. Located just over the border 43 miles north of Seoul on the route to Pyongyang, this 810-acre complex aims to attract South Korean companies, particularly small and medium-sized enterprise, seeking lower labor and costs for their manufactured products and who may not be able to establish subsidiaries in China or other countries. In January 2006, 15 companies had begun operations in Gaeseong. By January 2007, they were employing 8,746 North Koreans. To be completed in three stages, the first stage (2002-2007) comprising 3.3million square meters out of a total of 66 million square meters, was constructed in 2006. Hyundai Asan and Korea Land Corporation plan to eventually attract 300 businesses in the first stage, 700 in the second, and 1,000 businesses in the third stage with an estimated total of 300,000 workers.

It seems that environmental degradation on the wetlands of the DMZ due to the wastewater from GIC is inevitable. The contaminated water from GIC will flow from the Sambong Creek-Sacheon River-Han River estuary to Northern Gyeonggi Bay. Regions around Sacheon River, which have been free from human interference for 54 years, are an international ecological treasure house which penetrates the DMZ's western wetlands. In addition, Imjin River and Han River are water sources indispensable to Gyeonggi-do and northwestern regions of the Seoul Metropolitan City. The heart of the problem lies in the fact that Sacheon River is the only stream that receives GIC's discharged wastewater. This means that polluted water from GIC will destroy ecological systems in the western wetlands of the DMZ and also influence the fishing industry around the Ganghwa Island area.

Haeju Industrial complex is nearby Haeju Port, which is well-situated for transporting materials and fuels to adjacent plants and producing and shipping cement. The cement industry has a characteristic of producing many pollutants. Without appropriate pollution treatment facilities, these

kinds of economic activities will badly affect the coastal environments of the West Sea as well.

Incheon Metropolitan City has a geographical advantage for cooperating with the DPRK in various sectors since the city is adjacent to the DPRK. So they have prepared joint development plans in economy, culture, and tourism in Gaeseong. Currently being promoted is the construction of Gaepung Joint Development Zone an offshoot of the GIC, which may contribute to promoting city to city cooperation between the two Koreas. It is a project that aims to develop a joint development zone in Gaepung-gun from 2006 to 2020. The first step will construct the necessary infrastructure and the second step will support the construction of industrial complex and attract industries' participation. Finally, the third step will complete the joint development zone.

Both South and North Korea can receive benefits from the establishment of Gaepung Joint Development Zone. Through this, the ROK will facilitate the activation of construction industries and coastal transportation on the West Sea. And the DPRK can introduce new advanced technologies from the ROK and improve living conditions in local communities (Gaesong –gun and Gaepung-gun).

Waste and wastewater treatment facilities were not taken into account in the development of GIC. However, in the developing process of Gaepung Joint Development Zone, a pollution-prevention system must be established with proper legal and institutional arrangements. Along with this, North Korea is developing an institutional framework for mitigating negative impacts derived from the composition of industrial complexes. Under these circumstances, the DPRK has developed environmental laws and regulations for the special joint economic zone and requested participating industries to establish an environmental management system which meets international standards (Jung, 2003).

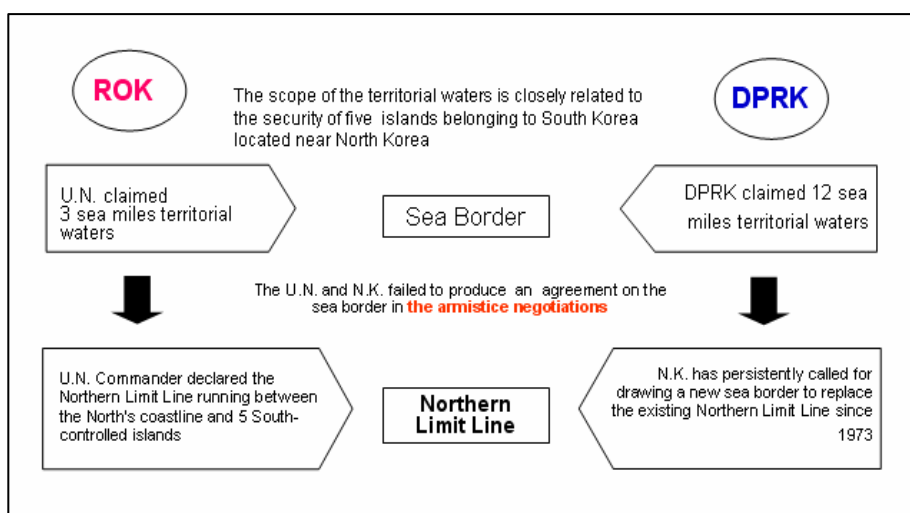
2.3. Political-Military Environment

The sea demarcation line was set unilaterally by the U.S.-led United Nations Command Military Armistice Commission (UNCMAC) when North Korea failed to agree on a sea border during the Armistice Agreement negotiations after the Korean War in 1953. Back in early 1952 when the talks over a sea border took place, the U.N. side insisted

that the North's waters should extend no more than three nautical miles from its territory, while the North Koreans called for a line with 12 nautical miles out from its land. This resulted in the breakdown of talks.

In 1955, North Korea unilaterally declared its maritime boundary extended 12 nautical miles from its land. South Korea also declared that its waters extended outward 12 nautical miles in 1977. The two Koreas have staked out diametrically opposite positions. Ever since the early 1970s, North Korea has consistently refused to accept the Northern Limit Line (NLL), although only twice did military clashes turn violent in 1999 and 2000 respectively, resulting in the loss of life¹². These confrontations often take place during the peak months (June-September) of blue crab fishing since the DPRK's fishermen come dangerously close to or cross the NLL to catch more blue crabs. It can be interpreted that these clashes are the result of a dispute over the location of the maritime boundary coupled with intense competition for a valued marine living resource—blue crab (<Figure 2-6>).

<Figure 2-6> Controversy over the NLL



Source: Cho, 2007.

¹² The first major incident occurred on June 15, 1999, resulting in the sinking of a North Korean vessel and 30 deaths. South Korean forces sustained seven minor injuries. The most recent incident on June 29, 2002 was more deadly, leaving five South Korean naval personnel dead, 19 wounded, and one boat sunk. The North Koreans also admitted to fatalities, with approximately 30 killed or injured according to South Korean estimates (Jon Van Dyke *et al.*, 2002).

2. The Conditions for Establishing the MPP Korea

Fundamental concerns for each field were discussed and decided through ministerial-level conferences or working-level conferences, and the items for marine facts were confirmed and agreed upon during the 4th, 5th, 8th, 13th, and 15th meetings out of a total of 17 meetings (<Table 2-3>). In particular, North and South Korea agreed to use the same radio frequency, and agreed to the development and application of visual signals for patrols through the 2nd North-South Korean Military talks (June 4, 2004). This North-South Korean agreement clearly defines the objective of the inter-Korean cooperation in fisheries.

<Table 2-3> Inter-Korean ministerial conference s

CL.	Time & Place	Contents
4th	2000.12.12~16 Pyongyang	○ Cooperation in fisheries, North Korea suggested to provide a part of fishing farm for some period and agreed to discuss it in Mt. Geumgang (No. 2)
5th	2001.9.15~18 Seoul	○ North-South agreed to discuss about allowing private vessels passage in territorial waters (No. 3 ⑤) ○ Agreed to have contacts to discuss about the sharing of some parts of eastern sea of North Korea (No. 3 ⑧)
8th	2002.10.19~22 Pyongyang	○ North-South agreed to discuss about allowing private vessels passage in territorial waters and security guarantees (No. 4) ○ Using the eastern sea of North Korea by South Korean fishermen (No. 6)
13th	2004.2.3~6 Seoul	○ North-South mutual agreement for the continuous discussion about fisheries (No. 4) ※ Adoption of North-South agreement on fisheries and its annexed agreement (May 28, 2004). South Korean government ratified it on December 29, 2004
15th	2005.6.21~24 Seoul	○ Constitution and operation of working-level talks under the Committee for the Inter-Korean Economic Cooperation; agreed to discuss and resolve the pending problems regarding collaborative fisheries (No. 7) ※ Opened the 1st working-level conference on July 27, 2005 ○ Agreement on the private vessels passage of Jeju channel and the promotion of working-level discussion (No. 9)

Source: Nam *et al*, 2005.

In addition, the first North-South Korean Working Level Conference (July 25~27, 2005) provided important agenda items on fisheries for future military talks and ministerial conference toward the establishment of a joint fishing zone in the West Sea, the prevention of illegal fishing activities by Chinese vessels based on mutual cooperation, and promotion of the exchange of marine technology (<Table 2-4>).

<Table 2-4> The 1st inter-Korean working-level talks on fisheries (July 25~27, 2005)

Contents	Details
Objectives and principles	○ Peace settlement and benefit-sharing in the West Sea
Collaborative Fisheries (No.1)	○ Collaborative fishery on the West Sea - The zone and timing for collaborative fisheries is to be agreed through North-South Military Talks - Duration, the number of ships, devices, and costs will be determined by mutual agreement
Mutual cooperation for preventing illegal fishing (No.2)	○ Mutual cooperation for preventing illegal fishing activity by third parties excluding the two Koreas
Fish production and distribution(No.3)	○ Cooperation in fish production, processing, and distribution ○ Detailed issues will be discussed in North-South working-level talks
Marine technology exchange(No.4)	○ Technology exchange for collaborative development of good products
Open fishing grounds to the third countries	○ Cooperation with other countries wishing to enter the Korean fishing grounds

Source: Nam *et al*, 2005.

The second inter-Korean summit held on October 4, 2007 has laid a very important foundation for accelerating the establishment of a common fishing zone around the disputed western sea border by reaching an agreement on creating a “Special Peace and Cooperation Zone in the West Sea.” To implement this agreement, both South and North Korea

have jointly formulated a committee to create a Special Peace and Cooperation Zone in the West Sea (hereafter: the SPCZ arrangement). Recent fruitful outcomes were produced in the latest inter-Korean prime ministerial talks; the two Koreas will hold meetings at deputy prime minister-level of the Joint North-South Economic Cooperation Committee twice a year and quarterly meetings of the committee for promoting the SPCZ arrangement.

2.4. Legal Arrangements of the ROK and DPRK

The ROK clarified environmental rights in its Constitution. North Korea made a stipulation on environmental rights after the revision of its constitution in 1992. The DPRK enacted the Environment Conservation Act in 1986, but the Act focused on the superiority of socialism by blaming the pollution issues on capitalism. The DPRK's legal provisions for the conservation of the coastal and marine environment are largely classified into 3 categories: ① "The Fundamental Environment Act," which defines the environment conservation measures covering the whole nation, ② "The Marine Pollution Prevention Act," and ③ "The Law on the Conservation of Ecosystem, Fisheries Resources, and Cultural Properties(<Table 2-5>). South Korea's environment-related laws or acts have been generated based on the two international principles that are the "Precautionary Principle" and "Polluters Pay Principle." However, in terms of the principles for environmental management in the DPRK, it only deals with the country's responsibility in Chapter 1 of the Law on Environmental Conservation.

The "Framework Act on Environmental Policy" of the ROK recommends the establishment and implementation of a management system to protect the environment. It lays the groundwork for achieving the goal of environmental protection. But the DPRK does not clearly mention an environmental management system in its "Environment Conservation Act." In the meanwhile, for environmental disputes in terms of person to person, person to corporation, and person to government, the ROK resolves them through the Committee on Environmental Dispute Resolution or a court. However, as a socialist state, the DPRK does not define the measures to resolve such disputes in its regulatory system. Besides, the DPRK also adopted the concept of "zoning" for spatial planning. It seems that a fundamental approach to

control land-use is very similar in the two Koreas, but the DPRK has not yet prepared detailed methods to conserve, use, and develop the land.

<Table 2-5> Legal provisions of DPRK for managing the marine environment

CL.	Law/Act	Year of Enactment/Revision
Environment and Land Management	Environment Conservation Act	1986.4.9(E) 1999.3.4(R) 2000.7.24(R)
	Environmental Impact Assessment Act	2005.11.9(E)
	Land Planning Act	2002.3.27(E)
	Reclamation Act	2005.7.20(E)
	Land Acquisition Act	1977.4.29(E) 1999.6.169(R)
Marine Pollution Prevention	Marine Pollution Prevention Act	1997.10.22(E) 1999.1.14(R)
	Harbor Act	1986.9.4(E) 1999.3.11(R)
Conservation of Ecosystem, Fisheries Resources, and Cultural Properties	Cultural Properties Protection Act	1994.3.24(E) 1999.1.21(R)
	Scenic Beauty and Natural Monument Conservation Act	1995.12.31(E) 1999.1.14(R)
	Fisheries Act	1995.1.18(E)

Source: 'Code of Laws of North Korea', 2004.

Note: (E) and (R) represent 'Enactment' and 'Revision' respectively.

<Table 2-6> Legal provisions of the ROK for managing the marine environment

CL.	Law/Act	Plan
Basic Policy	<ul style="list-style-type: none"> • Framework Act on Environmental Policy • Coastal Management Act 	<ul style="list-style-type: none"> • National Comprehensive Environmental Plan • Integrated Coastal Management Act
Land-based Pollution Management	<ul style="list-style-type: none"> • Water Quality Conservation Act • Special Act on Watershed Management and Community Support for 4 Major River Basins • Sewerage Act • Act on the Disposal of Sewage, Excreta, and Livestock Wastewater • Wastes Control Act • Toxic Chemicals Control Act 	<ul style="list-style-type: none"> • Framework Plan for Wastewater Treatment Facilities • Framework Plan for Total Pollution Load Management • Framework Plan for Drainage Maintenance • Framework Plan for the Disposal of Sewage, Excreta, and Livestock Wastewater • National Comprehensive Plan for Wastes • Framework Plan for the Management of Toxic Chemicals
Marine Pollution Management	<ul style="list-style-type: none"> • Marine Pollution Prevention Act 	<ul style="list-style-type: none"> • Framework Plan for the Prevention of Marine Pollution • Framework Plan for Coastal Zone Management
Habitat Protection	<ul style="list-style-type: none"> • Wetlands Conservation Act • Natural Environment Conservation Act • Protection of Cultural Properties Act • Natural Parks Act • Wildlife Protection Act 	<ul style="list-style-type: none"> • Framework Plan for Wetlands Conservation • National Framework Plan for Conservation of the Natural Environment • Plan for Conservation, Management, and Utilization of Cultural Properties • Framework Plan for National Parks • Framework Plan for Wildlife Protection

Source: Nam, 2005.

2. Conditions for Establishing the MPP Korea

North Korean regulations, directly related to the prevention of marine pollution are “The Marine Pollution Prevention Act (1997)” and “The Harbor Act (1986)”¹³. As for South Korea, it has “The Marine Pollution Prevention Act,” “The Water Quality Conservation Act,” “The Public Waters Management Act,” and “The Harbor Act.”

South Korea started to prepare the regulation for marine pollution prevention in December 31, 1997 to ratify the MARPOL 73/78 (International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978) by enacting “The Marine Pollution Prevention Act.” North Korea also began its history of the prevention of marine pollution by constituting “The Government Order on Economic Sea Zone,” which includes the regulations on the conservation, use, and development of marine resources. But “The Government Order on Economic Sea Zone” is a kind of external declaration on the use and development of territorial waters and exclusive economic zone.

In summary, the western transboundary coastal area has been already protected by the two Koreas through their respective legal arrangements by designating protected areas. Above all, the DPRK has shown high interest in biodiversity protection and managed various types of protected areas¹⁴. Three out of a total of eight Sea Bird Reserves of North Korea are located in area, and four out of 15 Marine Fisheries Reserves are also located within the area. This illustrates the DPRK’s strong commitment to the designation of protected areas as an effective means for conserving ecosystems. In addition, North Korea has mainstreamed an ecosystem-based management framework into its national policy.

Therefore, North Korea satisfies the conditions for establishing the MPP Korea, which are: “Existence of Valuable Ecosystems” and “Designation of Protected Areas by Legal Arrangements.” And South Korea also has an efficient legal framework to establish the MPP Korea.

¹³ North Korea institutionalized the operation and management of the Free Trade Ports in the Free Economic Zone by establishing the “Regulations on Free Trade Ports” in 1994 before the revision of “Harbor Act” in 1999.

¹⁴ North Korea has designated natural reserves (protected areas) since 1950, which include Mts. Baekdu, Myohyang, Oga, Geumgang, Guwol, Chilbo. Out of them, Mt. Baekdu is a special protected area defined as an international biosphere reserve in 1979. Additionally, the DPRK has designated 15 Animal Reserves, 17 Plant Reserves, eight Sea Birds Reserves, four Marine Fisheries Reserves, and 12 Wetland Conservation Areas (Ministry of Unification, 2005).

In particular, the area has 12 Natural Monuments out of a total of 153 in coastal and marine areas in South Korea.

Recently, South Korea has been strengthening its policies to designate coastal and marine protected areas and promoting systematic and reasonable policies to guarantee socio-economic activities of the local community. In addition, North Korea also has made considerable investment in the establishment and management of protected areas. Consequently, the western transboundary coastal area can be jointly managed by support from legal and institutional arrangements of the two Koreas.

2.5. Public Awareness on the MPP Korea

It is very important to secure the participation of local community members and other interested parties in promoting the MPP initiative since it is required to obtain relevant data and information about the various stakeholders' opinions on the MPP Korea, the living conditions of concerned community members, and development plans of local autonomous entities. Moreover the accumulated information and experiences of experts may give important clues for resolving the pending questions in developing the MPP Korea. Therefore, the understanding levels of community members and experts on the western transboundary coastal area, and inter-Korean relations will become essential sources to be examined for materializing the MPP Korea effectively. The survey was conducted each year from 2005 to 2007. The outline of the survey is as follows.

<Table 2-7> Outline of the survey

Category	2005		2006	2007
Regions	Residents (Baekryeong Island, Yeonpyeong Island)	Experts	Seven large cities including Seoul, Busan, and Incheon	Residents (Ongjin –gun)
Time	2005. 7.12~14	2005 .7.26~8.5	2006. 9. 1~30 (Preliminary Survey : July 2006)	2007. 8.28
Method	Face to Face Interview	Email/Fax	Face to Face Interview	Questionnaire
Sampling No.	144	67	700 (from ages 20 to 65 years)	99
Sampling Error	-	-	± 3.7%	-

2.5.1. Key Survey Findings: Resident Group (2005)

Of the respondents, 99% indicated that they believed the total fish catch of blue crabs has been greatly decreased, while 80% of them responded that the primary reason for the decreased catch is illegal fishing by foreign vessels. To increase the production of blue crabs, the majority of respondents thought that strengthening supervision against illegal fishing activities by foreign vessels must be the first priority. In answer to a question regarding a supervisory body for foreign vessels, one-half of respondents indicated that it should be jointly managed by the two Koreas.

Approximately, 58% of respondents said that the implementation of a jointly managed marine protected area program between South and North Korea could be implemented. On the other hand, 31 % of respondents fully agreed with the objectives of a jointly managed-marine protected area program, but they are skeptical of its realization. In particular, 60% of respondents said they were afraid that military conflicts between the two Koreas could recur in the future.

The question related to the requirement for the effective implementation of a jointly managed marine protected area program, 99% of respondents replied that each government of South and North Korea must access to issues actively and make consistent efforts regarding these issues.

Besides, most of the respondents said that the environment in the transboundary coastal area of the West Sea has deteriorated compared to that of the past. And 49% of residents answered that natural resources and endangered species such as spotted seals and black-faced spoonbills should be protected, provided that the level of protection does not have a significant impact on the local economy. In addition, 36% of respondents said they hoped that government investments would be effectively allocated to boost the local economy of the region.

2.5.2. Key Survey Findings: Expert Group (2005)

Many South Korean experts consider the western transboundary coastal area to be the most politically uncertain area on the Korean Peninsula. And they foresee that the politico-military tension in the area will continue to be so in the future. With regard to the naval conflicts in 1999 and 2002, a half of the experts believed that it was mainly caused by the different perceptions of the two Koreas on the maritime borderline.

Besides, to achieve sustainable development in Korea, economic cooperation that can bring political and economic benefits to both Koreas must be sought as the first priority. In the maritime area, the majority of experts said that South and North Korea can cooperate in the fields of maritime transportation, fisheries resources management, and harbor express service.

Of the respondents, 57% revealed positive views on the establishment of the MPP Korea in terms of improving the relationship between the two Koreas and living conditions in the area. And 95% of respondents believed that the MPP Korea should be promoted continuously, even though international political and economic circumstances encompassing the Korean Peninsula might be aggravated in the future.

2.5.3. Key Survey Findings: National Survey (2006)

About 60% of respondents showed affirmative views on the MPP initiative. And they thought the main body for designating the MPP should take the form of a multilateral approach through international/regional organizations' participation and support. Regarding

questions about the relationship between the two Koreas and the MPP initiative, 60.1% of respondents answered that the political situations surrounding the Korean Peninsula must be taken into account in the process of developing the MPP initiative, but the spadework such as collection of information and facilitation of cooperation with international/regional organizations is required as well. And 29.7% of respondents replied that the MPP project should be advanced because the adversarial relationship between South and North Korea will not last for a long time.

On the other hand, 10.1% out of the total respondents indicated that the MPP initiative should be withdrawn due to many obstacles, such as the unstable relationship between the two Koreas and conflicts between economic development and environmental conservation. In addition, in response to a question about expected outcomes from the designation of the MPP, 22% of respondents thought that politico-military tension between the two Koreas on the West Sea would be alleviated. 27.1% of them answered that the MPP would contribute to the conservation of coastal and marine ecosystems through the management of marine litter or water quality based on inter-Korean cooperation. In addition, 155 respondents (22.1%) replied that local economy would be developed by promoting tourism and joint-fishing activities. Finally, 136 people agreed that the MPP will protect fisheries resources from illegal access by foreign vessels.

2.5.4. Key Survey Findings: Resident Group in Ongjin-gun (2007)

The object of the survey in 2007 was to find out whether there were changes in the views of South Koreans regarding the MPP-related questions in comparison with the results of the survey from 2005 and 2006.

Over 54% of people believed that North Korea is not a reliable partner to cooperate with. The result is a little bit higher than that (48.1%) of 2006. When asked for respondents' views about inter-Korean cooperation, the greatest proportion of people, 64%, said that economic cooperation should have a high priority over other items (humanitarian, culture, religion etc.). In particular, local people of Ongjin-gun replied that cooperation in fisheries, such as joint fishing activities and activation of sea lane in the West Sea should be promoted.

Furthermore, 70% of people thought that military clashes on the West Sea will recur in the future, a slight increase over 2005. And the majority of people answered that the cause of military clashes on the West Sea is a reflection of the different views of the two Koreas on the maritime boundary.

When asked what the biggest potential problem was for the western transboundary coastal area, 70 out of 99 people (64.8%) answered that illegal fishing activities by Chinese fishing boats are heavily destroying fisheries resources of the area. This result is very interesting because 43% of ordinary people in 2006 and 32.8% of experts in 2005 gave similar answers to this question. In response to the question about how to control illegal fishing activities by Chinese vessels, over half the people supported the idea that South and North Korea must jointly manage the fishing grounds of the area. In addition, 28% of people supported reinforcing supervision and control over Chinese fishing boats to increase catches of blue crabs, followed by the conservation of habitats.

Moreover, 65% of people supported the MPP initiative in 2007, compared with just 58% in 2005. Besides, over 70% of people gave affirmative answers to the establishment of a joint fishing zone around the Miryeokri Island, which belongs neither to South or North Korea's territory. Most respondents (95%) agreed that the ecosystems of the western transboundary coastal area must be conserved and protected because of their high ecological value. However, they felt that conservation and protection action plans should be implemented after achieving peace settlement and economic development in the area.

2.6. SWOT Analysis

2.6.1. Strengths

In 2005, the MPP initiative was adopted as a national marine policy of the ROK. It is a major breakthrough in protecting marine and coastal ecosystems, promoting peace, and assuring prosperity in the western transboundary coastal area. Also, as the results of the survey show that the local residents of the area and relevant experts strongly supported the idea of the MPP Korea. Along with the support of the local communities and relevant experts, NGOs also showed strong interest in the

establishment of the MPP in the West Sea.

Both Koreas have legislated and managed a variety of reserves in order to conserve the marine environment. Recently, South Korea has been strengthening legal and institutional mechanisms to designate coastal and marine protected areas, and North Korea has invested in developing its own national coastal strategies and enacting policy reforms to directly address specific sustainable development issues.

Moreover, the adoption of a joint declaration through the second inter-Korean summit has paved the way for institutionalizing inter-Korean relations to establish a permanent peace regime on the Korean Peninsula and promote common prosperity of the Korean people. Especially, the declaration includes a commitment that the two Koreas will establish a Special Peace and Cooperation Zone in the West Sea by designating a joint fishing zone and maritime peace zone in the West Sea, activating a Haeju port, establishing ‘Haeju Special Economic Zone’, and allowing joint use of sands of the Han River estuary. That will be an important groundwork for realizing the MPP initiative.

< Figure 2-7> Brief Contents of the 2007 Joint Declaration

- Work to end the Korean war ceasefire and press for a meeting of the other countries that signed the 1953 armistice— the United States and China—on a peace treaty
- Cooperate to end military hostilities, ease tension and ensure peace on the peninsula
- **Establish a joint fishing zone around their disputed western sea border**
- Smoothly implement agreements from international talks on North Korea’s nuclear weapons programs to resolve the issue
- Promote and expand economic cooperation projects
- Open cargo railway service to an already established joint industrial zone in North Korea’s border city of Gaeseong
- Build cooperative shipbuilding complexes
- Open tours via air for South Koreans to North Korea’s tallest peak, Mt. Baekdu

2.6.2. Weaknesses

To implement the MPP initiative successfully, cooperation between the

ROK and DPRK is essentially required. However, mutual trust between the two Koreas hasn't sufficiently built. Especially, there has been little collaboration in the maritime sector. Besides, different legal and institutional mechanisms between the two nations, lack of public awareness regarding the MPP initiative, conflicts between development and conservation, and insufficient data and information related to the area (limited access to the DPRK's information and data) are also weak elements to obstruct the success of the MPP establishment in Korea.

2.6.3. Opportunities

The recently proliferating economic cooperation¹⁵ between the two Koreas in the transboundary land areas, in keeping up with the promotion of neo-liberal economic system, will increase the DPRK's interest in economic cooperation in the maritime sector. The adoption of agreements on ROK-DPRK Navigation (2004) and Fishery-Cooperation (2005) is a significant boost toward realizing the peace settlement in the area and increasing mutual benefits for fishermen in the both Koreas. Furthermore, more intensified international/regional organizations' activities over the protection of coastal and marine environment will encourage North Korea's participation.

In addition, in 2007, North Korea agreed to disable its main nuclear fuel production plant by the end of the year, and to accept international monitors for all of its nuclear programs. When this happens, it will greatly contribute to the establishment of a peace regime on the Korean Peninsula.

2.6.4. Threats

As the 2007 survey results show, 70% of the local residents believe that military conflicts around the sea borderline will recur in the future. And the majority of experts agreed with the local residents' view on the likelihood of reoccurring military conflicts in the West Sea. Moreover, the NLL dispute has long been a thorn in inter-Korean relations, which is a major obstacle hindering the negotiation process for designating a joint

¹⁵ The Inter-Korean cooperation is extended through Gaeseong Industrial Complex, Mt. Geumgang Tour, Gaeseong City Tour, Mt. Baekdu Tour, planning on the establishment of a Haeju Special Economic Zone, and activation of Haeju Port etc.

fishing zone in the West Sea. Therefore, the well-coordinated efforts to reduce uncertainty of security in the area must be thoroughly taken into account in the process of establishing the MPP on the Korean Peninsula.

Meanwhile, promoted inter-Korean economic cooperation will have a negative impact on living resources and its important habitats of the transboundary areas. It will accelerate inflow of pollutants into the West Sea since rapid urbanization and human development activities have added to the extent of the environmental degradation in the area.

After scrutinizing circumstances regarding the MPP establishment through the SWOT analysis, Strength and Opportunity factors are predominant over Weakness and Threat factors, both in qualitative and quantitative aspects. However, the future of the MPP's establishment is brighter since the increased inter-Korean cooperation in the economic sector and social-cultural exchanges, in addition to Korean citizens' strong commitment to the peaceful coexistence in the Korean Peninsula brighten the future of the MPP establishment. Furthermore, this project is very sensitive to the status of the two Koreas' future relationship and changes in the international situation. Therefore, it must be gradually driven forward on a long-term basis, taking domestic and international circumstances closely into consideration.

<Figure 2-8> SWOT analysis for the MPP Korea

<ul style="list-style-type: none"> ▷ Stabilization of inter-Korean relations ▷ Establishment of the infrastructure to promote North-South cooperation in maritime affairs and fisheries, and to realize the MPP Korea(the SPCZ in the West Sea) ▷ Preparing an institutional framework for inter-Korean cooperation (Fundamental plan for the development of inter-Korean relations) <ul style="list-style-type: none"> - Securing a foundation for inter Korean cooperation in maritime transportation and fisheries - Adoption of the MPP Korea as a national Marine policy in the ROK ▷ Advanced management system and capability for maritime affairs and fisheries ▷ Public's big support for the results of the 2007 inter-Korean Summit(building a peace regime and economic cooperation) 	<ul style="list-style-type: none"> ▷ Lack of cooperation experience in the maritime sector <ul style="list-style-type: none"> - Lack of experience in environmental conservation & harbor development ▷ Insufficient data and information ▷ Land-based, and economy-oriented Inter-Korean cooperation ▷ Absence of a coordination mechanism conflicts between conservation and development ▷ North Korea's undeveloped marine technology 			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Strengths</td> <td style="width: 50%; text-align: center;">Weaknesses</td> </tr> </table>	Strengths	Weaknesses	
Strengths	Weaknesses			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Opportunities</td> <td style="width: 50%; text-align: center;">Threats</td> </tr> </table>	Opportunities	Threats	<ul style="list-style-type: none"> ▷ Conflicts over the delimitation of sea border line in the West Sea <ul style="list-style-type: none"> - It can be transformed into opportunities or strengths
Opportunities	Threats			

Source: Nam *et al.*, 2007.

3. Strategic Initiatives for the MPP Korea

3.1. Basic Directions

The MPP Korea should be promoted by balancing the three objectives (Peace, Prosperity, and Protection). Considering the uniqueness of the transboundary area and the rapidly changing circumstances surrounding the Korean Peninsula, the following basic directions have been established. First, the protection of natural resources and ecosystems must be included in the creation of the SPCZ in the West Sea. Through the second inter-Korean summit, a fundamental institutional framework for realizing peace settlement and economic prosperity in the western transboundary coastal area was to be constructed. But the protection of natural resources and ecosystems was not included in it. As ‘sustainable development’ becomes part of global agenda, and it is necessary to maximize synergy effects in inter-Korean cooperation, enhancing exchanges and cooperation in the environmental sector should be promoted as a priority.

Second, the designation of a joint fishing zone and maritime peace zone shall be developed independently of the delimitation of a sea border line in the West Sea. It is impossible that both Koreas comprise on the sea border issue in a short time. To draw a mutual agreement from the North-South talks on the designation and management of a joint fishing zone and maritime peace zone, a practical approach is required - separately from the discussion process on border delimitation. As a practical aspect, the two Koreas could achieve benefits from a joint fishing zone and maritime peace zone – such as an increase in the production of fisheries resources, prevention of Chinese vessels’ illegal fishing, and reduction of security uncertainties in the area.

Third, large-scale inter-Korean projects should be facilitated in harmony with small-scale projects, and designed for local economic development. The MPP Korea aims to achieve economic prosperity, not only for the Korean Peninsula as a whole but also for the local communities in the area. The recent inter-Korean summit and inter-Korean prime ministerial talks tended to emphasize large-scale projects and land-based development activities – promoting the second-stage projects in the GIC, repairing the Gaeseong-Sinuiju rail link and the Gaeseong-Pyongyang expressway, and building joint shipyards in

Anbeyond and Nampo, joint development of sand mining in the Han River estuary, establishment of a Haeju Special Economic Development Zone etc. Along with these big projects, small-scale projects which can directly contribute to improving living standards and household incomes of the area have to be planned.

3.2 Basic Principles

The basic principles to promote the MPP Korea will be firmly established based on the basic directions. In accordance with the basic directions, the five basic principles outlined below have been proposed to advance the MPP initiative.

3.2.1. Mutual Reliance and Respect

Mutual reliance and respect are essential elements in order to strengthen the strategic cooperation between interested parties like North-South Korea which have maintained a standoff for over 50 years. So these elements must be part of the groundwork to ease the mutual distrust between the two Koreas derived from their political systematic differences. Meanwhile, there have been no environmental exchanges between the two nations in the West Sea. Therefore, building a trust in the environmental sector among North-South Korean scientists and experts is vital to advance the MPP Korea to the next step.

3.2.2. Small but Practical Plan

Due to the unique characteristics of North and South Korea, a large scale inter-Korean project, requiring vast finance and a long period may attract major attention from the media and ordinary people. But, in these days, North Korea shows a tendency to pursue long-term, stable, and beneficial projects. Thus it is recommended that stable, practical, and small scale projects for North Korea - such as a training program related to coastal and marine management or donating used experimental or monitoring equipments to universities and institutes in North Korea - are more suitable at this stage.

3.2.3. Incremental and Iterative Approach

The long-term mutual distrust and weakness of collaborative exchanges between the two countries will not be able to solve in a short period of time. Particularly, the western transboundary coastal area is very sensitive to the changes of socio-political circumstances surrounding the Korean Peninsula, North Korea-U.S., and Northeast Asian region. In this context, it will be necessary to gradually and iteratively promote the MPP initiative regardless of the changed conditions. Additionally, it would be unreasonable to expect the greatest outcome from the first stage of the project or to concentrate on achieving declarative objectives. It will be necessary to clearly identify each step's objective and expected outcome, and based on this, the MPP initiative must be developed in an incremental and iterative manner.

This idea is supported by the 2006 survey results, which revealed that 60.1% of respondents answered strengthening partnerships with relevant international/regional bodies and collecting information and data reflecting the changed conditions surrounding Korean Peninsula are necessary. Meanwhile, 29.7% of those surveyed thought that the project must be aggressively pursued, regardless of prevailing conditions, since deteriorating inter-Korean relations at the time could be seen as a temporary phenomenon, rather than a long-term situation.

3.2.4. Non-political Approach led by Experts

It is certain that economic, cultural, and humanitarian exchanges comprise the greatest share of the inter-Korean cooperation.¹⁶ Accordingly, the peace settlement in the West Sea will be discussed at the North-South Korea talks table if the relationship between the two Koreas is improved. But a practically accessible option is not merely a demarcation of sea border line, but rather the building of a cooperation regime in fisheries and the coastal and marine environment. The peace settlement and boundary demarcation have very political characteristics

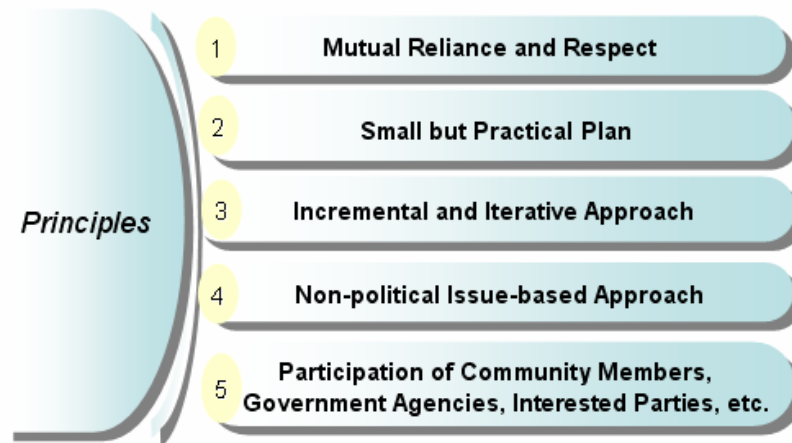
¹⁶ South Koreans acknowledge that practical humanitarian approaches of a “campaign for reunion of dispersed family members, cooperative use of Korean language, cultural exchanges, economic support and investment toward North Korea” and socio-economic exchanges are very important in improving North-South relations. Only 7.1% and 6.9% respectively responded that the practical measures of North-South cooperation were political exchanges and academic exchanges.

but the marine environment protection is a relatively non-political area, so it can be assumed that such environmental protection will be given in high priority and promoted separately from political and military talks.

3.2.5. Participation of Local Community Members, Government Agencies, and Interested Parties

The MPP Korea is one of the projects to be coordinated and promoted by the relevant government agencies because of unique inter-Korean relations. Besides, the MPP Korea is closely connected with the local communities and lives of their residents. The various interested parties include private organizations related to environmental protection, industries which are keen on extending their business to North Korea, and local autonomous entities. However, the extent of interest parties' supports and understanding toward the MPP Korea is very low. Therefore, sharing information and knowledge must be extended to encourage stakeholders' participation in the decision-making process to further develop the MPP initiative

<Figure 3-1> Basic principles for the MPP Korea



Source: Nam *et al.*, 2006.

3.3. Promotional Strategies

The promotional strategies for the MPP Korea should be created based on the above five principles to effectively achieve the “3Ps (Peace, Protection, and Prosperity)” objectives. In addition, the strategies must be able to shift from the weaknesses to strengths by sufficiently reflecting the recently changed conditions for designating a Marine Peace Park in the western transboundary coastal area. It is suggested that six strategies to be implemented are: (1) Improvement of a Promotion System for Creating the SPCZ in the West Sea, (2) Construction of a Harmonized Mechanism between Development and Conservation, (3) Strengthening Knowledge Base and Capacity Building, (4) Detour Approach through International Cooperation, (5) Area-specific Approach, and (6) Constitution of a Consultative Body and Increasing Public Awareness.

3.3.1 Strategy 1: Improvement of a Promotion System for Creating the SPCZ in the West Sea

3.3.1.1. Background and Conditions

The establishment of a Special Peace and Cooperation Zone in the West Sea can be described as the first tangible outcome in promoting the MPP initiative, and it has provided an institutional framework to further develop the MPP Korea. But the SPCZ arrangement needs to be complemented in some aspects to maximize its outcomes and achieve sustainable development. In terms of maximizing future outcomes, the contents to improve living conditions of the local communities of the area and nurture inter-Korean cooperation in the management of coastal and marine resources must be included in the SPCZ arrangement. As for South Korea, the SPCZ arrangement is necessary to be crystallized in such a way as not to be easily affected by frequently changing political and economic conditions.

3.3.1.2. Promotion Direction

A. Constitution of a Sub-Committee for Coastal and Marine Environment Conservation

Through the recent inter-Korean summit, the South and North Korea have agreed to upgrade the status of the existing inter-Korean Economic Cooperation Promotion Committee, which was established in 2001, to that of a Joint Committee for Inter-Korean Economic Cooperation to be headed by deputy prime minister-level officials. But most of inter-Korean projects, discussed in the committee are land-based economic cooperation. It is noteworthy that there have been no discussions in regard to the marine environment and coastal management between South and North Korea. To overcome this deficiency, a sub-committee for marine environmental conservation is needed to be established under a Promotion Committee for the SPCZ in the West Sea.

B. Adjustment of a Promotion Schedule for the SPCZ Arrangement

Most of the agreed projects included in the SPCZ are scheduled to be ready for their implementation by 2008. However, systematic research activities are required to collect necessary information and data to realize the development of Haeju harbor, the establishment of Haeju Special Economic Zone and Joint Fishing Zone, and the joint use (sand mining) of the Han River estuary. Moreover, the existing institutional arrangements must be adjusted appropriately for the establishment of the SPCZ in the West Sea and enough financial resources should be secured in advance. Therefore, several projects of the SPCZ arrangement might only be able to commence from 2009 or 2010.

C. Revision of Legal and Institutional Systems for Implementing the SPCZ Arrangement

“The Fundamental Plan for the inter-Korean Cooperation and Development (2008~2012)”¹⁷ is a long-term plan. So, it is difficult to fully reflect rapidly changing conditions in inter-Korean relations. For this reason, implementation plans have to be established focusing on the projects that are feasible. Along with this, specific action plans need to be developed for each field.

¹⁷ It was developed after the 2007 inter-Korean summit to facilitate the inter-Korean relations in the long-term basis and will be implemented for 5 years (2008~2012).

3.3.2 Strategy 2: Construction of a Harmonized Mechanism between Development and Conservation

3.3.2.1. Background and Conditions

The western transboundary coastal area is a spawning site and habitat for black-faced spoonbill, spotted seal, Chinese egret etc. It provides a rich environment for various marine organisms with good conditions of tidal mud-flats and river-mouth areas. It means this area has very high ecological value, as reflected by the fact that there are as many as 69 protected areas designated by both South and North Korea.

Moreover, according to the 4th National Territorial Planning, it was fixed the DMZ was identified as a natural “eco-bridge,” which has been socially acknowledged as a highly protected area and drew international interest. Hence, it is expected that the future activation of North-South economic exchange may be concentrated on the transboundary coastal area rather than the DMZ.

There are good examples of developmental concentration in the transboundary coastal area with North-South cooperative projects including the Gaeseong Industrial Complex, Gaepung Joint Development Zone, Haeju Special Economic Zone, and the Sand Mining Project in the estuary of the Han River. Further, this area has the facilities of Haeju Port and Incheon Port to expand social overhead capital required in a convenient exchange of human and material resources through sea and land routes.

It is clear that the economic belt connecting Gaeseong-Gimpo-Incheon metropolitan areas may play an important future role in North-South socio-economic development. However, these coastal development projects may cause damage to the environment and ecosystem. Particularly, the activation of a coastal economic belt will generate chemical and biological influences on the environment caused by polluted waters from economic project sites as well as physical influences such as reclamation and landfill for securing the land and dredging activities for maintaining the route. Therefore, it is necessary to develop a mechanism to harmonize development and conservation in the area.

3.3.2.2. Promotion Direction

A. Introduction of a Zoning Scheme

Zoning has been known as a space management technique to minimize the conflicts between development and conservation through the harmonization of sustainable use and protection of the environment. Zoning is also a method to achieve the objectives of the designation of protected areas through defining the legal actions by function after analyzing the spatial data such as environmental status, socio-economic features, and future demand for space management policy. Though there is a difference in the form and its contents, international bodies like the World Conservation Union (IUCN) and UNESCO, and advanced countries like the United States and Australia have used a zoning mechanism as a measure for managing coastal and marine protected areas.¹⁸

The zoning mechanism is designed to lead to the systematic development while protecting the essential regions of habitat and the ecosystem. Moreover, it is also aimed at preventing social complications, guaranteeing property rights and economic use by the community members, and secure practical management tools for protecting environmental and cultural values of the area. To introduce the concept of zoning in the western transboundary coastal area, what must be generally considered are the conditions of natural environment, socio-economic use, relevant regulations and acts, cultural resources, and area-specific pending questions. It is also necessary to distinguish the region by unit area, since the area shows unique differences in each Baekryeong and Daechong Island, Yeonpyeong Island, and Ganghwa Island and the estuary of the Han River(<Table 3-1>).

¹⁸ The management directions for marine protected areas prepared by the IUCN and Cardiff University defined the objectives of zoning as a “separation of ecosystem and socio-economic activities, protection of ecological and cultural values of that area with guaranteeing the activities of community members, and protection of the ecosystem with minimizing the influence on socio-economic use.”

<Table 3-1> Features of the western transboundary coastal area by unit area

Area	Natural Environment	Socio-Economic Use	Policy Demand	Main Functions
Baekryeong & Daecheong Island	Habitat for spotted seals, great aesthetic value with precipitous cliffs and sea stacks and Kongdol Beach(bean-shaped gravel beach), important ecological and cultural resources, etc	Agriculture, fisheries, and tourism	Tourism	Protecting endangered species such as spotted seals and their habitat, and promoting economic growth by eco-tourism
Yeonpyeong Island	The biggest fishing ground for blue crabs	Fisheries	Relinquishment of military tension, elimination of illegal fishing activities by Chinese vessels, and improvement of fishing grounds	Protection of fisheries resources (blue crabs)
Ganghwa Island & the Estuary of Han River	A spawning area and habitat for migratory birds, four specific islands, eight natural monuments, five wildlife protection areas, and four wetland protected areas in estuary of the Han River	Industrial complexes and tourism	GIC, Gaepung Joint Development Area, a sand mining project in the estuary of Han River, and tourism	Spawning area and habitat for migratory birds/North-South development projects

Source: Nam *et al.*, 2006.

B. Strategic Environmental Assessment for Coastal Development Project

Economic cooperation has a high priority in North-South Korean exchanges. However, in the inter-Korean talks, pending issues concerning the marine environmental conservation, spatial management of coastal areas, and fisheries resources management have never been adopted as a formal agenda. The land-based inter-Korean economic cooperation may also cause conflicts among the interested parties who worry about the pollution of sea areas and changes to the surrounding marine ecosystem. So it is essential to carry out Strategic Environmental Assessment (SEA) as a tool for comprehensively measuring the economic, social, and environmental impacts of coastal development projects from the initial planning stages.

It is possible to avoid negative social and economic costs by considering the economic value of ecosystems and its related services in the beginning stage. Moreover, the application of SEA will contribute to reducing unnecessary conflicts among interested parties and enhancing the transparency of the project.

3.3.3 Strategy 3: Strengthening Knowledge Base and Capacity Building

3.3.3.1. Background and Conditions

In general, objectives and scientific data should be secured to develop effective management plans. As informed in the previous chapter, the research data and information about the marine and land environments around the area are insufficient to carry out cooperative projects in fisheries, maritime transportation, and environmental preservation between North and South Korea¹⁹.

¹⁹ Nam and Kang (2003) reported, the reasons for insufficiencies in the western transboundary coastal area were; first, the physical restriction due to its military areas and information security; second, the differences in research methods and information management systems between the two Koreas, resulting in the difficulties in securing mutual confidence and utilization; and finally, the data collection for environments has been given low priority in inter-Korean exchanges owing to the low interest and understanding of it.

The insufficient data and information on the area is due to restricted access to the unique geographical area. Moreover, most of the information on the area is outdated and mainly concentrated on transboundary land areas. The survey results show that the most urgent actions taken for the cooperative management of the western transboundary coastal area are the consolidation of different regulations (26.1%) and construction of integrated database regarding coastal and marine environments and ecosystems (22.6%).

In this context, management plans for natural environment, natural resources, and spaces must be prepared in a form to minimize the complications, promote the mutual interests of concerned parties, and maintain sustainability to realize stable growth.

3.3.3.2. Promotion Direction

A. Establishment of an Inter-Korean Joint Research Center

The pending issues regarding the western coastal area vary greatly - such as harbor development, activation of maritime traffic routes, joint sand mining, and cooperation in fisheries and biodiversity. From the circumstance analysis for the MPP Korea, it is reported that joint research projects and training programs for North Korean experts are required. Besides, the promotion of collaborative fisheries and maritime technology development between the two countries were already agreed upon in the inter-Korean working-level talks

Since North Korea has great interest in education/training programs for strengthening capacity for managing environment-related issues, it may generate great synergy effects through the enhancement of manpower capabilities and joint development of scientific-based technology. Especially, it is impossible to directly provide equipment to North Korea because of South Korea's trade control policies over North Korea. In this context, a joint research center might provide mutual benefits to the both Koreas since the center will be able to systematically facilitate the exchanges in technical development, training programs, joint researches, and joint utilization of devices in various fields of harbor development, fisheries, coastal management, and biodiversity & ecosystem conservation.

B. Developing Systematic Arrangements for a Joint Research

The joint research could be developed after mutual trust and respect are established between the two Koreas, transcending the differences in ideology and systems. The setting up of an organization for a joint research, development of methodologies applied to the joint research and outreach programs to increase public awareness should be promoted in the first place.

However, if North Korea shows a passive attitude toward this, South Korea should conduct a study in the military zone of South Korea under an agreement with North Korea. For a successful joint study, it is essential to clearly set common goals and objectives to constitute a research group, and to define research areas.

C. Operation of North-South Korean Expert Forum on Maritime Affairs and Fisheries

It is important to begin with human resources exchanges to forge ahead with comprehensive marine and coastal management as well as the establishment of a Marine Peace Park. It is reasonable to collect data and perform a joint study by forming an expert forum rather than by government-level talks (Nam *et al.*, 2005). Besides, the academic exchanges of information, data, and technologies will be accelerated through this forum. The expert forum could assist the relevant authorities of both Koreas to make correct decisions by supplying useful knowledge and information. The forum may not be held regularly in the beginning. Yet, it would greatly assist in strengthening the management capacity and knowledge base of both Koreas in the long-term.

3.3.4. Strategy 4: Detour Approach through International Cooperation

3.3.4.1 Background and Conditions

There have not been significant advances in North-South exchanges in coastal and marine environment and fisheries matters due to economy-oriented inter-Korean cooperation and unique features of the western transboundary coastal area. However, the indirect measures to promote

North-South cooperation through various international meetings of Tumen-net, ²⁰ NEASPEC, ²¹ NOWPAP, 2003 TEMM(Tripartite Environment Ministers Meeting)', the Northeast Asian Special Meeting for Protection against Yellow Sand, and UNESCO's "Northeast Asian Biodiversity Preservation Network" have been discussed. And North Korea's growing interest in marine environmental projects and also high intention of international bodies to make North Korea participate in their activities may be functioned as great assets for facilitating the MPP Korea. Furthermore, North Korea's international relations and the SPCZ arrangement will be promoted by the support and cooperation of international organizations.

3.3.4.2. Promotion Direction

A. International Advisory Group (IAG)

It is important to activate the IAG meeting to effectively promote the MPP Korea and achieve fruitful results from it. The concentrated experience and knowledge of experts from related international organizations would be useful in establishing the concrete strategies for the MPP Korea. The IAG consists of the representatives of IUCN, NOWPAP, UNESCO, YSLME, and WWF. The members promised to provide continuous advice and technical support to the MPP Korea. The regular IAG meeting will contribute to elevating the understanding of international bodies toward the MPP initiative, and to developing the strategic partnership among the members.

Moreover, the international network for the MPP initiative could be established by communicating with other Marine Peace Park initiatives (e.g. the Red Sea Marine Peace Park and the Marine Peace Park between Indonesia and the Philippines) or transboundary conservation cases (e.g. the International Peace Park in the Bonifacio Strait and a Joint Fishing Company between Yemen and Eritrea) based on a cooperative mechanism among neighboring countries.

²⁰ Tumen Net is a research project of North-South Korea, China, Russia, and Mongolia sponsored by UNDP, operated during August 2000 to August 2002 to analyze the factors that threaten bio-diversity and marine resources as well as to establish mid- to long-term Strategic Action Plan.

²¹ NEASPEC: North East Asian Sub-regional Programme of Environmental Cooperation.

B. Developing Cooperation Projects with Regional Programs

a. Inter-Korean Cooperation through EABRN

The main activities of the East Asian Biosphere Reserve Network (EABRN)²² are to increase regional cooperation through East Asian Biosphere Reserves, exchanges of information and experiences exchange, and Geographic Information System (GIS) education for the managers of biosphere reserves. EABRN contributed to the North-South cooperative exchanges in the natural resources and environment sector. It has provided a venue for exchanging ideas to settle unsolved problems through the meeting held on a 1~2 year basis. It helped the ecosystem and biodiversity conservation of North Korea by supporting the publication of books and enabled South Korea to use recent data about North Korea.

The Ministry of Environment (MOE) issued that a statement saying that “it is intended to designate the DMZ as UNESCO biosphere reserve, and seek ways to designate the North-South marine transboundary areas from the estuary of the Han River to Baekryeong Island as an international Marine Peace Park.”²³ It is also seeking collaborative measures to integrate and manage land and sea areas by constructing an effective management system and extending the natural “eco-bridge” of the DMZ of the land transboundary area into coastal and marine areas.

b. Inter-Korean Cooperation through YSLME²⁴

The rapid industrialization of China is causing serious pollution in the West Sea (Yellow Sea). Among the 63 large marine ecosystems (LMEs) in the world, the West Sea LME has been most severely affected by human development activities. Now, South Korea and China have launched the YSLME project and the project has been implemented since 2005. The YSLME project aims at sustainable fisheries management and reducing stress on the ecosystem of the West Sea.

²² The EABRN was established in 1994. Membership comprises North Korea, South Korea, China, Japan, Russia, and Mongolia. By 2000, 45 protected or other similarly managed areas in this region had been designated as biosphere reserves.

²³ Yonhap News, “Next year's promotion of the basic study for DMZ ecosystem conservation,” August 24, 2005.

²⁴ Yellow Sea Large Marine Ecosystem

The YSLME project will be ultimately dedicated to sustainable use of fisheries resources and protection of biodiversity in the West Sea. Thus, China and South Korea have continuously attempted to persuade North Korea to join the project. Finally, North Korea announced its formal decision to join the YSLME project at the 13th North Korea-China marine scientific cooperation meeting on November 2~3 2006.²⁵ North Korea proposed to discuss the detailed concerns with China at an appropriate time, and China also agreed to it. Furthermore, North Korea asked China to support to strengthening human resources capacity in physical oceanography, ocean biology, ocean satellite investigation, and digital simulation fields.

North Korea's participation in the YSLME project indicates that their interest in the management of Yellow Sea has significantly increased. And the fact that they requested the nurturing of marine professionals implies that the introduction of advanced marine technology is urgently needed by North Korea. Particularly, it is needed to strategically use the YSLME project to provide information on the MPP Korea to North Korea. Additionally, the YSLME project can be a channel for delivering scientific equipment, training programs, and biodiversity conservation programs, such as the protection of spotted seals' habitats in the Yellow Sea to North Korea.

c. Inter-Korean Cooperation through PEMSEA

PEMSEA²⁶ is a regional program to achieve sustainable development in East Asian Seas. Since its inception in 1994, its efforts were geared toward fulfilling its mission of building inter-agency, inter-sectoral, and intergovernmental partnerships for achieving the sustainable development of the Seas of East Asia.

North Korea actively participated in the PEMSEA activities, differently from other programs. Since 2001, there have been North-South contacts through the government-level steering committees or working group meetings sponsored by PEMSEA, which provided a very amicable environment. The PEMSEA secretariat is also endeavoring to

²⁵ Yonhap News, "Formal declaration of North Korea, participation in the YSLME Project," November 7, 2006.

²⁶ Partnerships in Environmental Management for the Seas of East Asia

build a cooperative foundation for North-South contacts. In particular, the 2006 PEMSEA EAS Congress held on December 12~16, 2006 provided visible outcomes of the exchanges of ideas and information. It is expected to improve the prospects for North-South cooperative exchanges in the management of coastal and marine environment, and there is also a possibility for it to precede a separate meeting for the MPP Korea. So it may be better possible to assess the necessity of the MPP Korea and discuss about various forms of North-South cooperation if the regular communication channel will be created through PEMSEA. For example, they may discuss the co-management of cooperative projects by connecting Nampo Demonstration Site of North Korea with Lake Shihwa Integrated Coastal Management (ICM) Parallel Site of South Korea.

d. Inter-Korean Cooperation through NOWPAP²⁷

North-South cooperation in coastal and marine environment can be extended by attracting North Korea's participation in the NOWPAP's MALITA (Marine Litter Activity). NOWPAP agreed to implement the MALITA to successfully manage marine wastes in the Northwestern Pacific through the 10th government-level meeting (November 2005).

It is essential to cooperate with adjacent countries since marine litter easily flows into the nearby coasts with the tide. It has not been known how much North Korea is suffering from an influx of foreign marine litter. But it is assumed that their coastal and marine environment is badly influenced by marine litter from other countries. When North Korea takes part in the MALITA, they will be provided with various incentives from scientific technologies, application of joint investigation and monitoring, marine litter recycling, and collection of data and materials by China, Japan, and South Korea.

Moreover, NOWPAP is activating an oil-spill contingency plan in response to oil-spill incidents. South Korea's worst-ever oil spill disaster occurred on December 7, 2007. It is expected that the spill will have a serious impact on oyster and abalone farming, as well as tourism businesses, in the area. As oil naturally tends to be moved away from Korea to other countries by winds and tides, South Korea's adjacent coastal neighbors will need to monitor their coastal and marine

²⁷ Northwest Pacific Action Plan

environmental status carefully. In this regard, North Korea should be urged to join the NOWPAP's oil-spill contingency plan.

C. Inter-Korean Cooperation through Existing International Bodies

There is another method to strengthen the North-South Korean environmental cooperation to encourage North Korea's participation in NEASPEC²⁸ or NEAC²⁹. NEASPEC is a comprehensive environmental cooperative body composed of South Korea, North Korea, China, Japan, Mongolia, Russia, ESCAP³⁰, ADB, UNEP, UNDP, and World Bank. North Korea has not shown active interest in it, except for its participation in the 2nd, 3rd, and 4th meetings. But South Korea has been consistently encouraging North Korea to take part in the joint afforestation project launched by South Korea, China, and Japan for preventing the yellow dust.

NEAC is a meeting that originated from the policy forum in which Ministry of Environment of South Korea, local autonomous entities, and NGOs have participated, comprising representatives of South Korea, China, Japan, Mongolia, and Russia. It focuses on the participation of various regional interested parties, building human networks, national environmental problems and preventive measures, and various other subjects. Matters discussed include biodiversity, acid rain, marine pollution, harmful chemicals, clean technology, and the global environment. NEAC, which is different from NEASPEC, is an open meeting discussing each country's environmental policies and unresolved issues related to environment with other local autonomous entities, NGOs, research institutes, and experts. Therefore, North Korea may have relatively low burden over its participation in the meeting compared to other meetings.

²⁸ North East Asia Sub-regional Programme for Environmental Cooperation

²⁹ Northeast Asian Conference on Environmental Cooperation

³⁰ Economic and Social Commission for Asia and the Pacific European Union

3.3.5 Strategy 5: Area-specific Approach

3.3.5.1. Background and Conditions

The western coastal transboundary area is separated into the regions of Baekryeong, Daecheong, Yeonpyeong Island, Ganghwa Island, and the estuary of the Han River based on the regional environment, current status of the ecosystem, the local economy, accessibility from land, and regional culture and history. In general, it is considered all natural, human, social, economic, historical, and cultural factors in such space to establish effective management plans. After that, it sets a priority of investment by building the sequence of policy or management. Namely, since a successful plan in one region will possibly fail in another region, the policy must be settled based on the site-specificity and pending issues of each region.

3.2.5.2. Promotion Direction

In applying this theory to the western coastal transboundary area, this area clearly shows its specificity according to three separate zones. So we need to deduce the policy for each region based on the site specificity and pending issues of each region. The local economies of Baekryeong Island and Daecheong Island are based on agriculture, tourism, fisheries. And it has highly protected species and sceneries including spotted seals and unique sand dunes. Yeonpyeong Island is mainly based on the fisheries compared to other zones and the region has been famous for blue crabs. In addition, Yeonpyeong Island is a conflict region between the two Koreas for catching blue crabs. Ganghwa Island and the estuary of the Han River have a good accessibility, the endangered species of Chinese egret and black-faced spoonbill, wide tidal mud-flats, and high development potential.

Considering these features in view of the exchange and collaboration between South and North Korea, the policies for each region could be directed as follows. First, spotted seals only live in Baekryeong and Daecheong Island, moving from there via the western coast of North Korea to Chinese Balhae-man (bay). So the key policy for Baekryeong and Daecheong Island in the MPP project should be the protection of

spotted seals. Second, there is no protected species on Yeonpyeong Island, but its marine resources should be protected by both Koreas. Therefore, it should be a priority policy to co-manage marine living resources, focusing on increasing the production of blue crabs. Finally, Ganghwa Island and the estuary of the Han River should be focused on the protection of black-faced spoonbills and Chinese egrets which go and come between the two Koreas, accompanied by the development of the estuary of the Han River (the northern part of Ganghwa Island) without damaging its ecosystem.

3.3.6 Strategy 6: Constitution of a Consultative Body and Increasing Public Awareness

3.3.6.1. Background and Conditions

The two Koreas may display different viewpoints regarding the development of policies for managing coastal and marine resources, and protecting the ecosystems of the western transboundary coastal area since politico-military tension still exists in the area and each country will seek to promote their own national interests. Meanwhile, conflicts will likely occur between the central government and local communities of the area in dealing with the issues related to local economy development. Moreover, various stakeholders have different positions (embracement or oppression) toward North Korea. In this regard, an effective mechanism based on social consensus within South Korea, which can contribute to narrowing down dissenting opinions among interested parties is necessary to be established.

3.3.6.2. Promotion Direction

A. Composition of a Policy Consultative Meeting on Inter-Korean Cooperation in Maritime Affairs and Fisheries

A variety of cooperative projects in maritime affairs and fisheries were raised in the recent inter-Korean summit. In the concrete, the SPCZ arrangement contains the creation of a “maritime peace zone” and “joint fishing zone”; establishment of a new special economic zone in the vicinity of Haeju; utilization of Haeju harbor alongside its infrastructure upgrades and development; safe passage of civilian vessels; and joint use

of the Han River estuary. It will be useful to set up a policy consultative meeting for transforming the various elements of the SPCZ arrangement into reality. If this meeting has insufficient legal basis for attracting relevant stakeholders, the creation of a joint meeting could be examined as well.

B. Building a Cooperation Mechanism and Increasing Public Awareness

Building a cooperation mechanism to improve mutual understanding among stakeholders including government agencies, local communities, industries, and NGOs should be established. For the future, the cooperation mechanism is to be developed in a comprehensive way for embracing North Korean stakeholders. At this stage, major stakeholders of this mechanism will be officials from related government agencies and experts from the two Koreas. But the local communities of both countries could exchange information and views on the needs and objectives of the MPP Korea in the long term.

<Table 3-2> Summary of the strategies for the MPP Korea

Strategies	Major Contents
Improvement of a promotion system for the SPCZ arrangement	<ul style="list-style-type: none"> ◦ Constitution of a sub-committee for the conservation of coastal and marine environment under the SPCZ arrangement ◦ Adjustment of a promotion schedule ◦ Revision of legal and institutional systems
Construction of a harmonized mechanism between development and conservation	<ul style="list-style-type: none"> ◦ Introduction of a zoning scheme ◦ Adoption of strategic environmental assessment for coastal development projects
Strengthening knowledge base and capacity building	<ul style="list-style-type: none"> ◦ Establishment of an Inter-Korean joint research center ◦ Developing systematic arrangements for a joint research ◦ Operation of North-South Korean expert forum on maritime affairs and fisheries
Detour approach through international cooperation	<ul style="list-style-type: none"> ◦ IAG activation ◦ Utilizing regional programs <ul style="list-style-type: none"> - EABRN, PEMSEA, YSLME, NOWPAP ◦ Utilizing existing consultative meetings <ul style="list-style-type: none"> - NEASPEC, NEAC
Area-specific approach	<ul style="list-style-type: none"> ◦ Developing promotion plans for each region based on the site specificity and that are issue-dependent
Constitution of a consultative body and increasing public awareness	<ul style="list-style-type: none"> ◦ Composition of a policy consultative meeting on inter-Korean cooperation in maritime affairs and fisheries ◦ Building a cooperation mechanism and increasing public awareness

Source: Nam *et al.*, 2007.

3.4. Stepwise Plans

The MPP Korea is vulnerable to the external circumstances including the longstanding framework of bilateral relations between North Korea and antagonists – the United States, South Korea, and Japan. Though inter-Korean cooperation and exchanges have been considerably enhanced by the warming of relations between South and North Korea after the 2007 inter-Korean summit and a series of follow-up meetings³¹, there remain many obstacles hampering the implementation of the agreement. However, the agreement may make a contribution to eventual settlement of the NLL issue, although it might take a long time. In this regard, the projects under the SPCZ arrangement should be developed based on the framework of the MPP Korea, which is a strategic model to achieve “Peace Settlement, “Protection of Ecosystems and Biodiversity”, “Economic Prosperity” in the western transboundary coastal area. Consequently, the MPP Korea will complement the SPCZ arrangement by supplementing the environmental conservation element. The stepwise promotion plans for the MPP Korea are proposed by taking account of the basic principles and promotional strategies explained in the previous chapter.

The first phase (2008-2009) is to be a stage for strengthening a policy infrastructure to establish the SPCZ in the West Sea. The successful establishment of the SPCZ will be dedicated to the development of inter-Korean relations in maritime affairs and fisheries on the Korean Peninsula as well as in the West Sea. Therefore, more emphasis should be placed on fostering the development of the SPCZ arrangement at the beginning stage. And major efforts for adding ecosystem conservation and environmental resources management elements to the SPCZ arrangement have to be made in this phase.

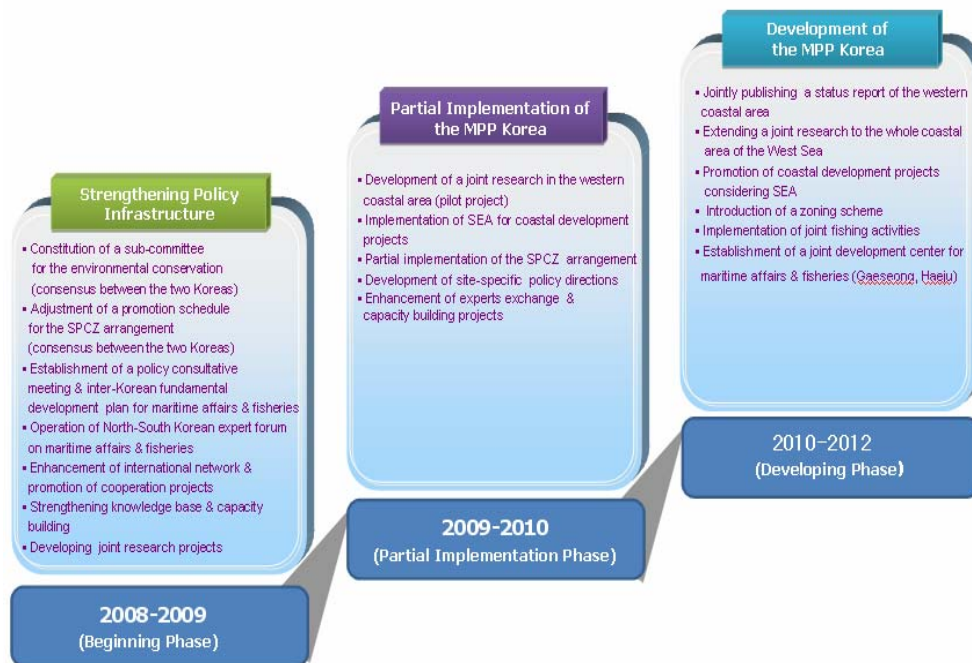
In the second phase (2009-2010), the MPP initiative will be partially implemented. The agreed projects between the two Koreas will be promoted during this stage. Research/management capabilities of both Koreas in coastal and sea areas and accumulation of information and data

³¹ The South and the North have agreed to hold inter-Korean prime minister-level talks for the implementation of the declaration adopted through the 2007 inter-Korean summit and agreed to hold a first round of meetings in November 2007 in Seoul. In addition, the South and North have agreed that their highest authorities will meet frequently for the advancement of relations between the two sides.

regarding transboundary coastal areas are expected to be enhanced. In parallel with this, the international network for the MPP Korea will be extended by holding multi-level inter-Korean meetings and the regular IAG meetings.

With the tangible outcomes from the first and second phase, the MPP Korea will enter the practical development period in the third phase (2010-2012). Increased mutual respect and trust between North and South Korea will forge a new era of national prosperity and unification. Moreover, inter-Korean cooperation in the West Sea will be significantly advanced if disputes surrounding the NLL and North Korea's nuclear issue are resolved, and the two sides reach an agreement on security guarantees for various cooperation projects. Along with this condition, an agreement designed for the establishment of a Marine Peace Park will be adopted by the two Koreas.

<Figure 3-2> Stepwise plans for the MPP Korea



Source: Nam *et al.*, 2007.

4. Conclusions

The 2000 inter-Korean summit was intended to finally end hostility between the two Koreas, while the 2007 inter-Korean summit aimed to suggest practical collaboration methods and expand the range of communication between South and North Korea. The Declaration on the Advancement of South-North Korean relations, Peace and Prosperity, signed by the South and North Korean leaders included many important agreements to enhance the two nations' economic ties, and to develop a peace regime on the Korean Peninsula.

In particular, in the fifth clause of the Declaration, the two Korean leaders agreed to create a "Special Peace and Cooperation Zone in the West Sea" for setting up a joint fishing zone, maritime peace zone, and special economic zone. The SPCZ arrangement is providing an institutional basis for the establishment of a Marine Peace Park in the western transboundary coastal area of the Korean Peninsula. In addition, the SPCZ arrangement is laying a firm foundation for first achieving the two objectives of the MPP Korea, 'Peace' and 'Prosperity' at first. However, the arrangement lacks the elements needed for environmental conservation.

Since this area has shown the most symbolic characteristics of North-South Korean relations, it is also to be a touchstone for assessing the future course of relations between the two nations. But it is still difficult to include the agendas on the protection of ecosystems and biodiversity in coastal and marine areas in inter-Korean talks due to predominantly economy-oriented North-South cooperation structure. Nonetheless, the current inter-Korean relations are in a relatively stable position, not easily influenced by specific issues or accidents. Thus, these relatively secure and positive conditions encompassing the Korean Peninsula will play a vital role in advancing the MPP initiative. The establishment of the MPP Korea, promoted by recently increased exchanges and cooperation between the two Koreas will be a strategic framework to achieve "3Ps," which are the Peace settlement, Protection of biodiversity and marine living resources, and the activation of local economy (Prosperity) in the West Sea.

Excessive interest in transborder areas including the DMZ and the western coastal area may have adverse impacts on natural environment of the areas. In other words, it is essential to avoid any conflicts between development and conservation sector in this neo-liberal market system. Considering the given conditions, the MPP initiative is going to be developed as an effective mechanism to harmonize three pillars of “sustainable development,” “advancement considering the quality of development,” and “value-creation through the conservation of the environment” on the Korean Peninsula.

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