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## CONFLICT BETWEEN DEVELOPMENT AND CONSERVATION IN THE COASTAL WETLAND IN S.KOREA

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### Introduction

Better-integrated resource management is a fundamental prerequisite of sustainable development. Mandates for the better use of more integrated management approaches were prominent in the recommendations in Agenda 21, an action program emanating from the UNCED (United Nations Conference on Environment and Development), held in Rio de Janeiro, Brazil in 1992. Such mandates are also found in the 1982 United Nations Convention on the Law of the Sea. In addition, measures for protecting marine diversity are called for in the 1992 Convention on Biological Diversity.

In order to succeed these mandates, many countries are developing their own ICM (Integrated Coastal Management) Program. Even there is general acceptance of the basic concept of ICM, ICM require better information toward continuous process of governmental decision-making, wise use of resources and conflict resolution among stakeholders in the interface area of land-water surface. Agenda 21 played an important role in starting the ICM of Korea since 1992. The MOMAF (Ministry of Maritime Affairs and Fisheries) was established in 1997 and the Division of Coastal Zone Management under the Ministry took over the authority to establish ICM program and formulated the CZMA (Coastal Zone Management Act) in 1998 after understanding the seriousness of coastal degradation due to overuse and misuse (i.e. large-scale reclamation), the decentralization trend by increased local government's power on the coastal use policy and coastal resource management, and the issue of the conflict between development and conservation of coastal resources [1].

Korea has a various types of such wetlands as rivers (4000 km), streams, more than 18,000 of lakes, ponds and reservoirs, estuaries and tidelands. Coastal wetlands are well developed in the west and south coast compared to

other countries. All these wetlands are very vulnerable and had been transformed to other landscapes through draining, dredging and filling, reclaiming the inland and coastal water areas for the economic usefulness. Though figures vary, it has been estimated that more than 1600 km<sup>2</sup> (1.6 % of total land in South Korea) of wetlands have been lost.

Very recently, wetlands have started to attract a few people for a variety of reasons in Korea. These people are becoming increasingly aware of the value of wetlands - as habitat of waterfowl, fish and other wildlife, as places for water purification and aesthetic and recreation uses specifically after the registration of Ramsar site Yong swamp (106 ha, 1997.3.28) and Woopo marsh (854 ha, 1998.3.2). However, most people don't recognize the intrinsic values and ecological function of wetlands. They recognize wetlands in their altered form are capable of producing such economic goods as services for food, housing, commercial/industrial activities and transportation facilities. As a result of these different functions and services, there is a point at which different potential uses conflict.

### **Major Causes of wetland conflict between development and conservation**

One of the major reasons for wetland conflict is due to the different Korean government's programs. There are many development projects in Korea. The currently undertaking reclamation projects will eventually transform 75,000 ha of coastal wetlands into agricultural, industrial or urban area. Until 1998, there were no significant legislatures regarding wetland conservation. The Korean government has recently pursued various programs to protect the wetland from the development pressure. The enactment of WCA (Wetland Conservation Act; Ministry of Environment, 1998.12.29) is one of the most recent & significant legislation to protect and manage important wetlands. In the conserved wetland area designated by the WCA, such many development activities as constructing or remodeling facilities, changing landscape, drainage, planting or growing agricultural foods (except for living or leisure by local residents) can be restricted. However, difficulties exist in the designation of conservation area due to local residents' resistance to the designation. Most residents are very concerned with the restriction of personal property and activity rights after the designation of conservation area. Lack of public awareness, here, can be counted as one major obstacle to wetland conservation. Local communities show the reluctance in the designation and expansion of conservation areas, because most people expect the development projects to bring more economic benefits than the conservation.

Other laws, which are involved in wetland conservation, are Coastal Zone Management Act (Ministry of Maritime Affairs and Fisheries), Natural Environment Conservation Act (Ministry of Environment), Birds/Mammals Protection (Forestry of Administration), Natural Monument Protection (Ministry of Culture and Tourism). However, these programs have not set up the goal of the acts for the protection of vulnerable wetlands, and are targeting to protect country's natural resources based on the interests set up by different agencies. The other important program is the Environment Impact Assessment Act, which targets to minimize adverse impacts caused by development or reclamation project. But this program did not function well for protecting wetlands' environmental quality due to development. Compared to these conservation sides of government programs, there exist much higher numbers of development programs to have destroyed and damaged wetlands in Korea.

Currently, one of the major causes of wetland's loss is several huge reclamation and landfill projects undertaken by KARIC (Korea Agricultural and Rural Infrastructure Corporation) and Korea Water Resources Corporation. For example, KARIC is conducting several Agricultural Land & Water Resources Development and Improvement Project for such various objectives as groundwater & surface water management for agriculture, drainage improvement, farmland consolidation, upland area improvement, farmland transaction and rural road improvement. The serious problem of these projects is the gained land is mostly from the loss of huge amount of coastal wetlands.

#### Dilemmas of development and conservation

Conflicts over the use of Korean wetlands typically pit environmental groups and/or the conservation side of government agencies against the development side of government and/or government agencies that want to transform wetland to other types of landscape. The conflicting values in wetland use exist because the parties approach the use of wetland from different perspectives. Currently widespread dissatisfaction exists regarding the use of wetland resources and Korean's wetland policies even after the policy of Wetland Conservation Act due to the present level of government's effort lack of clear understanding and incorrect information of wetland values, functions and statistics.

One of the biggest problems in wetland resource management is the lack of the conflict resolution for the wise use of coastal wetland resources. Not

much effort has been contributed to develop consensus. There is currently no institutional framework that seeking balance of economic and environmental sustainable development. A few Korean experts argue that the current huge reclamation projects may result the short-sided economic income to Korean people.

Fortunately, the reclamation projects of coastal area have been reconsidered by Coastal Zone Management Act and tend to increase the public awareness of wetlands. After 21<sup>st</sup> century, Korea has started to accept new ecological paradigm rather than development oriented social paradigm. The denied reclamation case of YoungSan River Project IV is a significant example of this trend. The YoungSan River Project started in 1972 has finished the Phase I & II and obtained approximately 170 km<sup>2</sup> of the reclaimed land and currently at the phase III until the year of 2004. The original plan of phase IV is planned to gain 217 km<sup>2</sup> of the reclaimed land by constructing 42 km of several dams connecting land and islands. After the denial of the original plan in 1998, a new concept of wetland management has been suggested for this area.

However, many other important coastal wetlands are still suffering from the conflict among different government agencies, public, NGOs, and experts from the different science. A few examples are as follows.

### **Case 1. SunChon Bay**

#### Important Characteristics:

Area: Approximately 2,700 ha of coastal wetland mostly covered by reed (*Phragmites communis*)

Observed species(1988-1999): Birds(158), Plants(116), Benthos(43)

Important bird species: 12(IUCN inventory), 15(Ramsar inventory)

One of the most important habitats for hooded crane(*Grus monacha*)

#### Process of the conflict:

Conflict began in 1996 by the residents opposing the project of the river canalization, which intend to prevent the river overflow. Currently residents are worry about the designation of wetland conservation area enacted by Wetland Conservation Act.

#### Major concerns:

(Residents)

The protection of property rights and limitation of access & activities (NGOs)

The preservation of wetlands for habitat & ecological value

## **Case 2. Seok Ho (潟湖, Natural Lagoon)**

### **Important Characteristics:**

Approximately 10 natural lagoons (unique natural lakes in South Korea) exist.

Various size of water surface area: Approximately 23 ha (Hwajinpo Ho) to 0.03 ha (Chunjin Ho)

It has beautiful landscape but waters are getting polluted and reclaimed to land.

### **Process of the conflict:**

Before 1990, there was no significant conflict. Conflict began after 1991 by the NGOs who oppose the development by the local governments near lake without careful consideration of water quality and ecological values. NGO's movement in ChungchoHo in 1994 opposing the reclamation of the water area is the beginning of the conflict. Currently, the following disputing issues exist.

- : GyungpoHo - Construction of golf course near lake
- : ChungchoHo - Preservation of unique landscape and aquatic plants
  
- : YoungrangHo - Recanelization of water flow to sea
- : SongjiHo & HwajinpoHo - Development of tourism (resort) area

### **Major concerns:**

(Residents)

The protection of property rights and economic income from natural lakes (i.e. aquaculture)

(NGOs)

The preservation of lagoons for rare natural resources

The preservation of the ecological values of natural lake as unique wetland

(Local governments)

Economic income by development

## **Case 3. Shiwaha Lake**

### **Important Characteristics:**

One of the longest dike(12. 7 Km) in Korea was built from 1987 to 1997

for such multiple objectives as the reclaimed new land for undermined use(17,300 ha), industry(1,302 ha), urban area(4,030 ha), agricultural area(4,990 ha), freshwater lake(6,100 ha) and other types of land use for distribution/decentralization of the capital's population and industries. It was originally planned that the lake would be used to supply fresh water to industrial complexes and agriculture fields, but the water quality had been seriously degraded in less than 2 years after the construction of the dike. Korea Water Resources Corporation flushed the polluted water to sea (approximate total amount of 218,000,000 ton) in 1996 and deteriorated and damaged the whole coastal ecosystem near Shiwha lake. Many peoples argued that the creation of Shiwha Lake is a serious mistake & environmental disaster from the view of the loss of huge amount of tidal flat area, fishery resources and the values of coastal ecosystem. Government made many efforts for the recovery of water quality and coastal ecosystem but it's not resolved yet. However, industries and people near Shiwha Lake are increased significantly after the construction of the dike.

#### Process of the conflict:

Conflict began after the construction of dike by the residents who was farming grape damaged from the air deposits blown from dried tidal flat. NGOs got involved in 1996 when the plan of flushing lake water to sea was set up by Ministry of Environment (MOE), Korea Water Resources Corporation(KWRC) and Korea Agricultural and Rural Infrastructure Corporation (KARIC). Even NGOs oppose the flushing of polluted water several ways (i.e. boat demonstration) but they failed. This resulted the serious damage to the coastal ecosystem. The residents and NGOs began to voice out their grievances about not concerning the water quality and fishery resources of coastal ecosystem. The people who live near Shiwha Lake recently established The Citizens' Coalition for Shiwha, a Lake of Hope, as a means to voice out their opinions and concerns regarding the future usage plan, water quality improvement and the recovery of Shiwha lake area.

#### A major conflicting issue among parties:

Various plans are proposed by different government agencies. The table 1 summarizes their projected plans for Shiwha Lake. Until now, the ministries and agencies have not given up their originally promoted development plans. These plans are aimed basically for the creation of economic gains from the reclaimed new land. This resulted the continuing conflicts among the local and central government agencies, residents and NGOs.

Table 1. The original development plans proposed by different government agencies

<b>Government agencies</b>	<b>Original development plans</b>
Ministry of Construction and Transportation (MCT) / Korea Water Resources Corporation (KWRC)	<ul style="list-style-type: none"> <li>▪ Industrial complex (1,208 ㎡)</li> <li>▪ Proposed urban area (6,073 ㎡)</li> </ul>
Ministry of Agriculture and Forestry (MAF) /Korea Agricultural and Rural Infrastructure Corporation (KARIC)	<ul style="list-style-type: none"> <li>▪ Agricultural area (3,636 ㎡)</li> </ul>
Ministry of Maritime and Fisheries (MOMAF)	<ul style="list-style-type: none"> <li>▪ Electric dam (using tide)</li> </ul>
Ministry of Environment (MOE)	<ul style="list-style-type: none"> <li>▪ Waste treatment facilities</li> </ul>
Korea Electric Power Company (KEPCO)	<ul style="list-style-type: none"> <li>▪ Electric power lines</li> </ul>

Major concerns:

(Residents)

1. The damages occurred after the construction of dams and compensation
2. The question of the ecosystem recovery

(NGOs)

1. Consensus of a single master land use plan agreed by different government agencies
2. Inclusion in the decision-making process

(Government agencies)

1. Economic income or ecological benefits either by development or conservation
2. Rational planning based on the agency's individual interests

## **Conclusion**

Generally there are many potential users in coastal area. Wise use of wetland resources requires intelligent programs, which require a mechanism for the conflict resolution. We need to develop intelligent program for such a variety potential users as commercial and recreational fishers, marine sand and gravel users, farmers using land in the coastal area, environment and conservation groups, coastal land developers, coastal tourism operators, military personals and govt. officers. The conflict between development and conservation will continue unless we devise better way of analyzing & managing environmental dispute caused by human.

The idea of environmental mediation might be very useful as a means of resolving the conflict. A new idea can be implemented by the collaborative approaches from the scientists, planners and policy makers and citizen who concern about the future of our fragile wetlands.

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