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Master's Thesis of Landscape Architecture

Eco Tourism Planning and Design  
to Activate Tourism Utilizing Local  
Resources in Kyodong Island

교동도 지역자원을 활용한 생태관광  
기본구상 및 계획

February 2019

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Eco Tourism Planning and Design to  
Activate Tourism Utilizing Local Resources  
in Kyodong Island

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# Eco Tourism Planning and Design to Activate Tourism Utilizing Local Resources in Kyodong Island

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관련 규정에 의거하여 심사위원의 지도과정을 충실히  
이수하였음을 확인합니다.

2019년 2월

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## Abstract

Kyodong island started its position from an island of exile in Joseon and Koryeo dynasty. Kyodong island always remained as a lonely place. After the Korean war, the displaced people gathered and it soon be called as an island of displaced people and still, a lot of them are living in this island, longing for their hometown where their families are. However, way back in the past, when a boat was an only transportation, Kyodongdo was a place where defending Capital of Korea, or a place where theres exchange between Korea and others. The Kyodong island was one of an active place in Korea not like today. Also, Kyodong was an island which were separated in to three but due to its use, Kyodong island became one by reclamation. It was since Korean War when Kyodong island became sn unknown island.

Since the relation between South and North Korea has been improved after the declaration of Panmunjum in 2018, the border area in South Korea has become popular all over the world. Last year, there were more than 200,000 tourists visited Imjingak observatory and more than 30,000 people have visited Odusan observatory. Therefore, a lot of projects are underway to develop those bordered area and Kyodong island also.

Kyodong island which belongs to Ganghwa-gun, Incheon,

has a lot of projects ongoing, such as 'Peace Island Kyodong Project', 'Waterway Scenery Gardening', 'Making Charming Love Island' and 'Flower Road, Flower Hill Maintenance' which is a Local Scenery Improvement Project, 'Supporting Traditional Culture Education' and 'Kyodong Cultural Heritage Sightseeing' targeting Kyodong Hyanggyo, and 'Making a Memorial Alley in Daeryong Market'. Additionally, Jaebijip which works as a tourist information center is a cooperation project by Kyodong island, KY, and private sector. However the projects were ended up with one-dimensional tourist facilities such as road maintenance or stamp tour that the revitalization of tourism is impossible. In the case of Jaebijip, most of people do not know what the space is for. In addition, the operation at the Jaebijip is inadequate that it only ends up with a place where people can get tourists map. Also, the ongoing tourism programs are imitations of other tourism projects such as 'trying on the school uniforms' or a 'stamp tour'. The programs consist mainly in the Daeryong market, and other areas of Kyodong Island are not utilized at all. It is impossible to activate tourism without look deep inside of the island.

Therefore searching for the new resources of Kyodong island was held first to plan before proceeding. While discovering the resources, different types of terrains, species of birds, fishes and vegetations were found during the research. Based on these ecological resources the

tourism activation plan was derived.

The basic concept of the plan was based on nature. In the past few years, Kyodongdo has been steadily making efforts to transform itself into an island of peace. This study set the meaning of peace not only in terms of the unification peace of South and North Korea but also in peace using nature. Therefore, the basic idea is "Island coexisting with nature," "Island that can cure with nature," and "Island that can get closer to nature."

The plan used different characters of terrains and coastal to make coastal roads for the scenery, used vegetation to create ecological forest, and made observatory for observing the endangered or migratory birds and fishes. The selected areas for those plans to set was 7 different places which are Bongsori, Nanjeongri, Goguri, Sangyongri and Eupnaeri, and they were all selected based on researchers experience through exploration.

Based on the plans, the programs were set and the type of programs were divided into two which are software and hardware. Software is experience program such as education, observation, experience, participation. Hardware includes observatory, ecological road, coastal road, and education complex which are all physical designed space. These programs were placed in 'coexistence', 'cure', and 'close' zones which are basic concept of the plan. Coexistence Zone is a zone where various programs are held. In this zone, peace, exhibition, history, and ecology

learning programs are held. In the cure zone, ecological forest, bird observatory, fish observatory, coastal / ecological road and shelter were designed. The healing is a zone related to education through museum, gallery, ecological experience study centers, cultural experience study centers, seminar rooms, and study rooms.

The study purpose is to revitalize tourism in Kyodong island at the same time preserve and increase the value of ecology and natural resources in Kyodong island. This will help to increase the life quality of local residents and also make possible for sustainable tourism. However, due to the area is border area that there were a lot of limitations such as taking pictures, interviewing the residents, informations from past to present, and also requesting for digital map to design the masterplan.

*Key Words : DMZ, Border Area, Island, Kyodong Island, Eco  
Tourism, Island Tourism,  
Student Number : 2017-28781*

# CONTENTS

Abstract .....	I
Contents .....	V
List of Tables .....	VIII
List of Figures .....	X

## Chapter1. Introduction

<b>1.1 Research Background and Purpose .....</b>	<b>01</b>
1.1.1 Research Background .....	01
1.1.2 Research Purpose .....	04
<b>1.2 Research Scope .....</b>	<b>06</b>
1.2.1 Space Scope .....	06
1.2.2 Content Scope .....	08
<b>1.3 Design Method and Process .....</b>	<b>09</b>
1.3.1 Design Method .....	09
1.3.2 Design Process .....	11

## Chapter2. Theoretical Considerations

<b>2.1 Kyodong Island .....</b>	<b>12</b>
2.1.1 Background of Kyodong .....	12
2.1.2 Plan and Status of Kyodong .....	17
<b>2.2 Eco and Border area Tourism .....</b>	<b>26</b>
2.2.1 Tourism .....	26

2.2.2 Tourist Demanding Forecasting .....	32
<b>2.3 Case Study .....</b>	<b>35</b>
2.3.1 Gappa Island, South Korea .....	35
2.3.2 Yakushima Island, Japan .....	37

### Chapter3. Site Analysis

<b>3.1 Analysis of Site .....</b>	<b>41</b>
3.1.1 Overview of Wide Area .....	41
3.1.2 Overview of Kyodong Island .....	46
<b>3.2 Local Resources in Kyodong Island .....</b>	<b>52</b>
3.2.1 Natural Environment Analysis .....	52
3.2.2 Kyodongdo Terrain and Marine Characteristics .....	57
3.2.3 Kyodongdo Vegetation .....	62
3.2.4 Kyodongdo Birds and Fish .....	65
<b>3.3 Need Analysis of Residents and Tourists in Kyodong .....</b>	<b>71</b>
3.3.1 Stakeholder Interview and Awareness survey .....	71
<b>3.4 Comprehensive Analysis .....</b>	<b>78</b>

### Chapter4. Kyodongdo Eco Tourism plan

<b>4.1 Planning Direction and Strategic Process .....</b>	<b>80</b>
4.1.1 Planning Direction .....	80
4.1.2 Strategic Process .....	82
<b>4.2 Planning Concept .....</b>	<b>83</b>
4.2.1 Concept Direction .....	83

4.2.2 Design Concept and Process .....	85
4.2.3 Natural Resources Utilization Plan .....	86
<b>4.3 Program Concept .....</b>	<b>90</b>
<b>4.4 Space Concept .....</b>	<b>92</b>

## Chapter5. Strategic Masterplan

.....	95
<b>5.1 Master Plan .....</b>	<b>95</b>
5.1.1 Master Plan .....	95
5.1.2 Section .....	99
<b>5.2 Strategic Plan .....</b>	<b>101</b>
5.2.1 Guideline for Observatory Design .....	101
5.2.2 Observatory Design .....	104
5.2.3 Coastal Road .....	107
5.2.4 Eco Forest Trail .....	108
5.2.5 Educational Complex .....	109
5.2.6 Tourism Scenario .....	111

## Chapter6. Conclusion

.....	115
[References] .....	117
[Appendixes] .....	122
[Abstract] .....	130

# TABLE CONTENTS

[Table 1-1] Site Photo .....	15
[Table 1-2] Interview Subjects and Contents .....	18
[Table 2-1] Transition of kyodong Island .....	22
[Table 2-2] Island-related Projects and Laws by Year .....	26
[Table 2-3] Department of Ganghwa County Office for Kyodong Island .....	30
[Table 2-4] Business and Projects on Kyodong Island .....	31
[Table 2-5] Island Tourism Resources .....	35
[Table 2-6] DMZ Tourism Resources .....	39
[Table 2-7] Tourist Population .....	40
[Table 2-8] Photo of Daeryong Market on Chuseok .....	42
[Table 2-9] Photo of Gappa Island .....	45
[Table 3-1] Size of the Site .....	51
[Table 3-2] Kyodong Island Land Use .....	54
[Table 3-3] Photos of Kyodong .....	56
[Table 3-4] Photos of Mountains .....	58
[Table 3-5] Coastal Area .....	59
[Table 3-6] Ports .....	61
[Table 3-7] Different Terrain Photos .....	64
[Table 3-8] Existing Vegetation of Kyodong and Ratio by Legent Type I .....	66
[Table 3-9] Existing Vegetation of Kyodong and Ratio by Legent Type II .....	67
[Table 3-10] Kyodongdo Naturalized Exotic Plants .....	67
[Table 3-11] Photos of Vegetation .....	68
[Table 3-12] Observed Endangered Birds by Year .....	70

[Table 3-13] Photos of Birds .....	71
[Table 3-14] Type of Appearance of Marine Life Monthly .....	73
[Table 3-15] Photos of Tourists Fishing .....	74
[Table 3-16] Participants .....	77
[Table 3-17] Internal Stakeholders Interview .....	78
[Table 3-18] External Interview Analysis .....	79
[Table 3-19] External Recognition Survey Analysis .....	81
[Table 3-20] External Stakeholders Interview Analysis .....	82
[Table 4-1] Design Concept Process .....	90
[Table 4-2] Natural Resources .....	91
[Table 5-1] Guideline for Bird Observatory .....	109
[Table 5-2] Tourism Scenario 1 .....	119
[Table 5-3] Tourism Scenario 2 .....	121

## FIGURE CONTENTS

[Figure 1-1] Photos of Kyodong Island .....	13
[Figure 1-2] Spatial Scope .....	14
[Figure 1-3] Design Process .....	19
[Figure 2-1] Kyodong Connect the Rivers .....	21
[Figure 2-2] Timeline of Laws .....	29
[Figure 2-3] The De-militarized Zone of the World .....	37
[Figure 2-4] Map of Korean DMZ .....	37
[Figure 2-5] Gappa Island .....	43
[Figure 2-6] Yakushima Map .....	45
[Figure 2-7] Yakushima Island I .....	46
[Figure 2-8] Yakushima Island II .....	46
[Figure 2-9] Yakushima Island III .....	47
[Figure 3-1] Incheon Metropolitan City Overall Map .....	49
[Figure 3-2] Site Location .....	50
[Figure 3-3] West Site of Border Area .....	52
[Figure 3-4] Traffic System in Incheon .....	55
[Figure 3-5] Map of Hills, Roads, Coastline .....	57
[Figure 3-6] Expected Map Before Reclamation Terrain .....	62
[Figure 3-7] Kyodong Village Formation Map .....	62
[Figure 3-8] Mountains in Kyodong Island .....	75
[Figure 3-9] Terrain Map .....	76
[Figure 3-9] Process of Need Analysis .....	76

[Figure 4-1] Planning Direction .....	85
[Figure 4-2] Strategic Process .....	87
[Figure 4-3] Planning Direction .....	89
[Figure 4-4] Design Concept .....	90
[Figure 4-5] Existing Vegetation in Kyodong Island .....	92
[Figure 4-6] Redesigned of Endangered and Migratory Bird .....	93
[Figure 4-7] Space Concept .....	94
[Figure 4-8] Program Direction .....	95
[Figure 4-9] Specific Zoning .....	96
[Figure 4-10] Space Planning Strategy .....	97

# Chapter1. Introduction

## 1.1 Research Background and Purpose

### 1.1.1 Research Background

Kyodong Island is an ideal place for all the current tourist attractions of today. First, Kyodong Island has ecologically superior local resources, and second, it is the closest island of South Korea from North Korea. Today, environmental issues are emerging, and interest in nature is pouring out. Interest has emerged in various fields, and also in tourism, that it made a new form of sustainable tourism. As a result, more tourists are looking for natural areas. This can be related to the national income of Korea. The trend for tour in the past when the national income was low, was quick, inexpensive with watching type. Soon healing trip became popular and today, it has transformed into a form of tourism that directly participates and feels, Which caused a boom in ecotourism which makes possible in sustainable tourism. The UNTWO (World Tourism Organization) defined the meaning of sustainable tourism as

“To protect and promote the tourism opportunities of future generations while at the same time maintaining cultural preservation, essential ecological processes, biodiversity, and biological support systems to meet the needs of today’s tourists and communities. social. Managing with all resources to meet aesthetic needs’

Today, the boarder area in South Korea is highly valued globally. This area is more popular for foreigners than Koreans. In 2013, out of 822,934 tourists, foreign tourists accounted for 515,063 which is 62%.<sup>1)</sup> In addition, the number

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1) 오명근, “파주 DMZ 안보관광지 관광객 500만명 돌파” 『문화일보』 (2013년 06월 12일)

of tourists visiting the ‘Security Sightseeing’ in DMZ increases year by year and the amount of tourists who visits the observatory doubles every year.<sup>2)</sup>

Since 1953, DMZ (De-militarized Zone) has been closed and its been over 50 years due to the armistice agreement. Both South and North Korea has experienced the tragedy of division, and it still continues until today. The 38<sup>th</sup> parallel and the de-militarized zone, which materially and mentally represents the reality of division, are pouring attention all over the world.

Kyodong Island has advantages in both locally and as a tourism resource. The island is only 2 hours away from metropolitan area and the island has its potential both in ecotourism and DMZ sightseeing.

#### ■ Kyodong Island, the Outer Island on the Border

Since the declaration of Panmunjom on April 27<sup>th</sup> 2018, Kyodong island, which was noisy due to the broadcasting toward South to North, and North to South, became quiet in 55 years.<sup>3)</sup> Kyodong is only 2.6km away from North Korea and is the most closest Island to North Korea in South Korea.

The Island of displaced people, was known as an island for exile from Goryeo dynasty(918-1392) to the end of Joseon dynasty era(1392-1910).<sup>4)</sup> Most of the inhabitants of Kyodong island are displaced people who fled from Yeonbaek, HwangHae in North Korea during the Korean War.<sup>5)</sup>

On July 1, 2014, small changes began to appear after. The opening of the Kyodong Bridge,<sup>6)</sup> and various different projects started towards Kyodong island. Such as ‘Kyodong Island Project for Memorable Island to visit’ and

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2) 오명근, “전쟁위협에도 안보관광 방문객 증가” 『문화일보』 (2013년 04월 22일)

3) 강정규 『확성기 꺼진 최전방 마을, 55년 소음전쟁서 해방』 중부일보 2018년 05월 02일

4) 이재언, 『한국의 섬-인천광역시 경기도』. 지리와 역사.

5) 평화와 통일의 섬 교동도 프로젝트(2016). 투자유치담당관

6) 배상희, “인천 강화 교동연륙교 착공 7년 만에 개통” 『연합뉴스』 (2014년 07월 01일).

‘Peach Project for Kyodong Island’ were held in 2016 and a lot of tourists visited after the televised on famous broadcasting show were held.<sup>7)</sup> However, due to the strict enter to the Island which is civilian controlled area, people can enter only after the check-in process. There is also restriction on entry time. The residents in Kyodong can’t enter or go out from 12am to 4am, and tourists restricted between 6am to 8pm.<sup>8)</sup> In addition, two-third of the island, from Kyodong Bridge to the North Sea, a total of 40 km of barbed wire fences has been put, except the southern coast, to block North Korean Soldiers and residents who cross over.<sup>9)</sup> Because of this fences, it limits residents from fishing, which is a livelihood for people who live on Island. However, the disappearance of the broadcast speakers towards the both countries, after the declaration on April 27<sup>th</sup> will be the basis for the development of Kyodong Island as an Island of Peace. Also the day will come when tourists from North and South Korea freely come to the shore of Kyodong Island, which was unable to reach due to the barbed wire fences. In addition, the number of tourists visiting the border area is increasing.<sup>10)</sup> The tourists look back on the Korean War, thinking of vicktims, and look forward for peace. Kyodong island will be the place for catalyst for unification and a place that must be changed as a place of exchanges between North and South after unification. At the same time a It must be a place to remember historical center and the pain of division.

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7) ‘평화의 섬 교동도 프로젝트’, ‘가보고 싶은 추억의 교동섬 만들기 사업’ (2016) 강화군청.

8) 배경현, “추석연휴 강화 교동연륙교 24시간 통행” 『신아일보』 (2014년 09월 04일).

9) 구자룡, “분단의 상징서 협력의 관문으로... 교동도의 꿈이 다시 들썩” 『dongA뉴스』 (2018년 05월 05일).

10) 박경일, “북녘땅이 보이는 이곳 ‘평화의 바람’ 을 느끼다.” 『문화일보』 (2018년 06월 20일).

### 1.1.2 Research Purpose

The purpose of this study is to suggest basic design plan and plan of tourism activation to convert the area into the Island of peace by derive the natural environments and resources of Kyodong Island. The meaning of ‘Peace’ will be shown as nature in this paper. It also proposes the necessity of a base space for peace aiming to derive the peaceful value of Kyodong Island.

Currently the border area is becoming a tourist attraction, but the fact that Kyodong is an Island, and is a place for displaced people, that it needs different point of view and plan from other DMZ tourist attraction. Therefore, this study suggests a plan and tourism program suitable for Kyodong Island that covers different places around the Island and connect them by providing route, rather than staying one place. In order to transform the Kyodong Island, the place of pain of division, into the Island of Peace, it is necessary to find out the possibilities of the place without losing its own original identity of the Island with the story of residents, history.

This study sees Kyodong Island from various peaceful perspectives. It remembers the history of the past, and not just the ‘Island of Peace’ , but hink about the pain of the present displaced people and in the future, it suggests that his place becomes a place of ‘True Peace’



[Figure 1-1] Photos of Kyodongdo

## 1.2 Research Scope

### 1.2.1 Space Scope

The Spatial Scope of this study is a research case for activating tourism to the island of peace, that it does not select a one specific place, but spots where it has sufficient potential in tourism but considered to be lacking in tourist attractions such as tourist facilities and public facilities and the site that can promote peace potential. Also, select several specific space to design deeper and detailed plan and program.

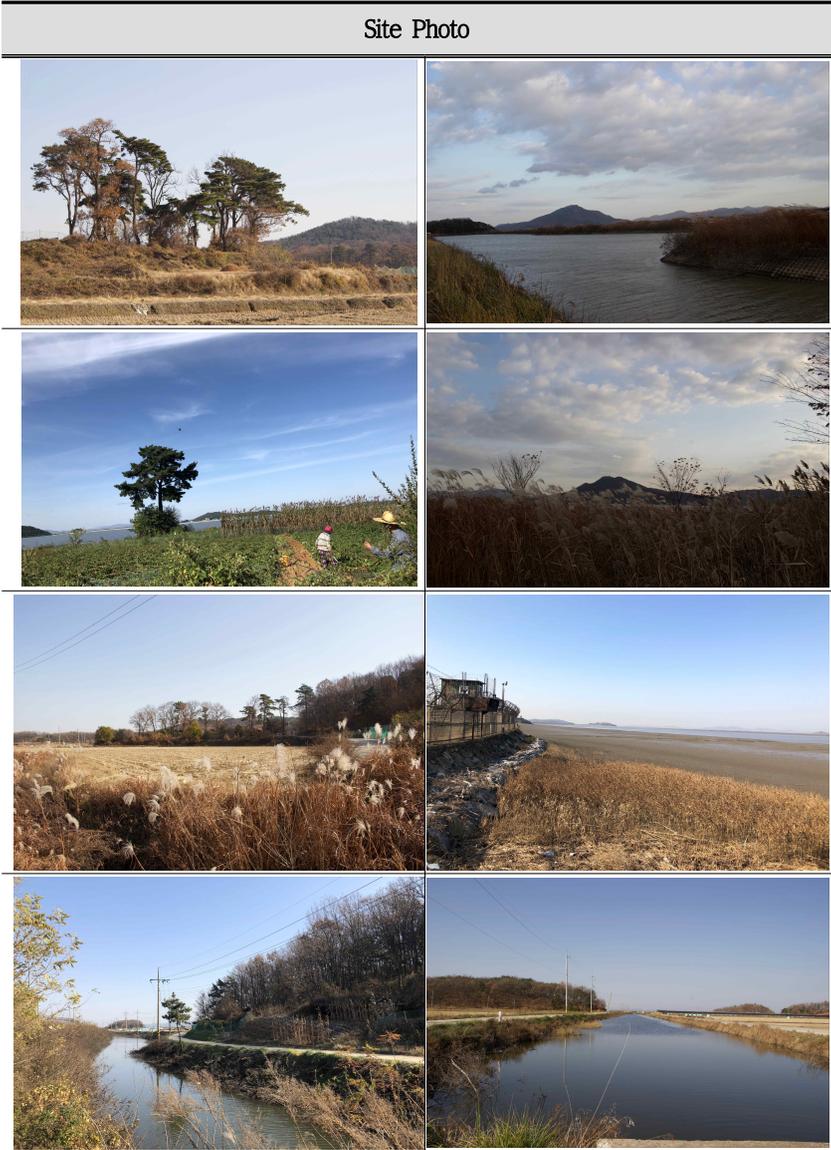


[Figure 1-2] Space Scope

Kyodong is an Island belonging to Kyodong-myeon [myeon:town] in Ganghwa-gun [gun: county]. Incheon city and is located in northwestern part of Ganghwa Island. It is also the 14<sup>th</sup> largest Island in South Korea which is located at the point where three rivers, the Ye Sung River and the limjin

River from North Korea and the Han River from South Korea meet and it flow into the sea. It is possible to observe the general life on North Korea when you look through a telescope that it is only 3.5km away. The total area of Kyodong Island is 46.90km<sup>2</sup>.

[Table 1-1] Site Photo



### 1.2.2 Content Scope

Although the number of tourists has been increased after the opening of the Kyodong Bridge, the re-visit rate is low and to figure this problem out, various projects are being carried out in order to provide different entertainments and attractions. In 2016, Kyodong Island held a residents' briefing session to promote the "Kyodong Island Development Project" aiming the traditional market which shaped as a market from 60s and 70s.<sup>11)</sup> They have designed 6070street, buzz street, swallow street, night star street and many other programs and design. In the same year, the "Peace Island in Kyodong-island Project" was concurrently carried out and the project were for making peace road, Jaebi-Jip, tourism resource development business, Koguri Shelter, Manghyangdae maintenance, bike way and also aiming at enhancing the quality of people's live and community vitality. However, due to the lack of understanding about Kyodong island, the projects ends up with developing the current tourist spots and fails to find new things. The projects only derives the surface of the island.

The study aims tourism activation of Kyodongdo which is ecologically well preserved as an 'Island of Peace'. The meaning of peace is ecology, environment, and nature. Therefore, in order to understand the island, the study will analyze projects and history. Then carry out an ecological environment analysis to discover local resources. Based on the results of the analysis, the study will propose tourism spot planning and design, and propose plans including operation management plan.

---

11) 가보고 싶은 추억의 교동섬 만들기 사업(2016년 018년 4월) 강화군청.

## 1.3 Design Method and Process

### 1.3.1 Design Method

#### ■ Design Plan

The following four key questions will be the focus idea before proceeding the plan.

First, What are the local resources that only Kyodong Island possess?

Second, How is the ecosystem of Kyodongdo established and continuing?

Third, what factors should be considered important for promoting tourism?

Fourth, What is the story of Kyodongdo?

Research starts with the history of Kyodong Island and policy and project plans. Then follows landscape system. Also, the study of advanced research on tourism of island and border region will hold. In addition, the research and case studies on different types on regeneration of island projects from the past and current ongoing island will be also be needed.

The next step is to analyze ecotourism, and then research and explore the local resources of Kyodongdo to elucidate and characterize factors that of speciality of Kyodongdo. Then analyse the complaints from the residents of Kyodong through interview to understand the needs of residents. The design will come after analysing the needs. The civil affairs analysis will be carried out in Kyodong-Myeon office, call center, and Ganghwa-gun office. In-depth interviews will also be conducted. In conclusion stage, the paper will review and plan the impact of the proposed tourism promotion plan on the Island, the Korean Peninsula and future unification. This will propose the direction of the follow up study.

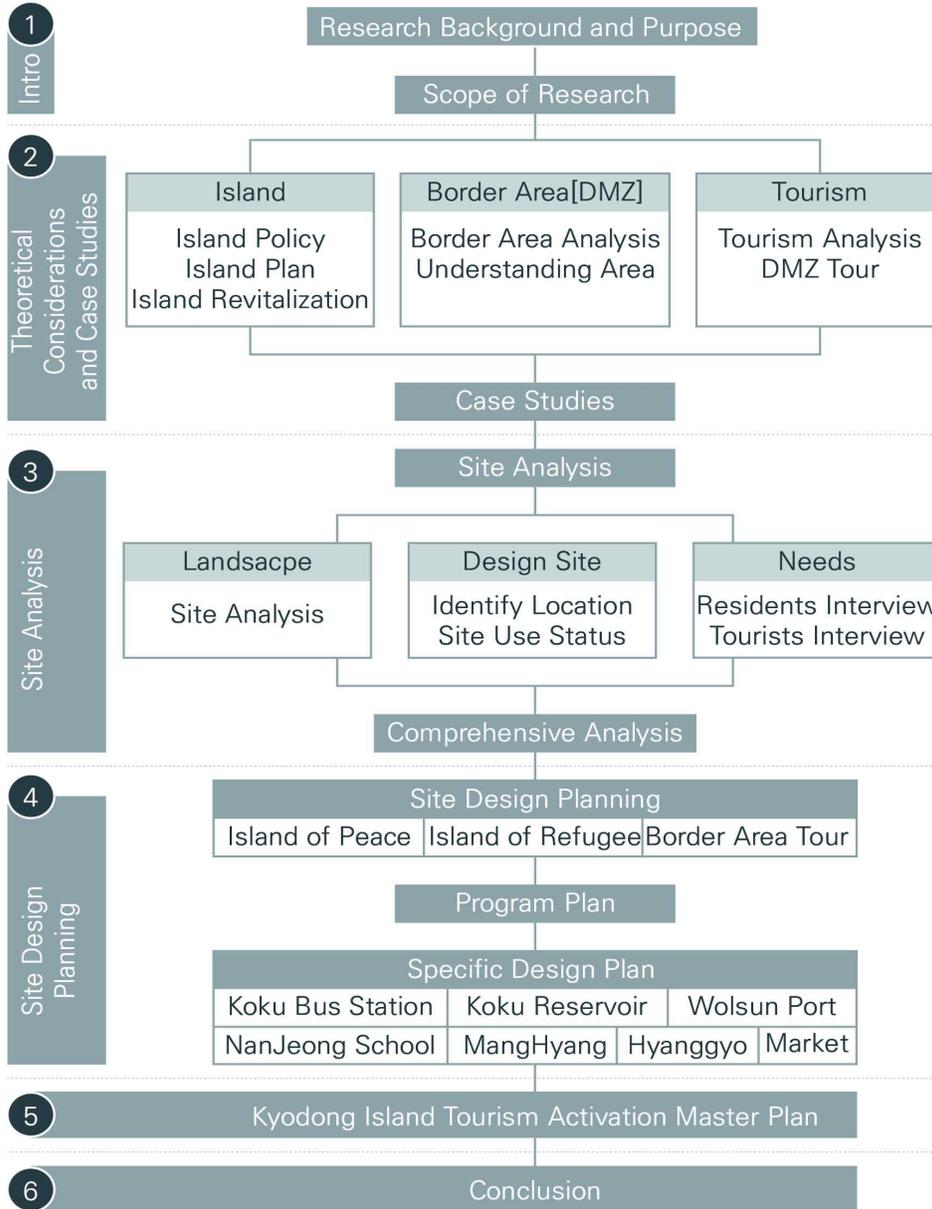
## ■ Data Collection and Planning Method

The research will be held with the interview of the residents and tourists. Collect the opinions of residents and tourists to figure out the scarce tourist elements of Kyodong Island.

[Table 1-2] Interview Subjects and Contents

	Contents
Residents in Kyodong	Opinions on the ongoing projects, responses to changes in Kyodong Island, identification of needs of residents inconvenience of the site
Merchants in Kyodong	The requirements and necessities of merchants according to the revitalization of tourism, the reaction according to the change of communion, the needs of merchants
people concerned in Kyodong	Understanding the status and future strategy of Kyodong Island, understanding of needs of residents through township office, projects and plans in action
Tourists	Opinions on Kyodong Island, inconveniences and requirements during the tour, grasp of needs of tourists

### 1.3.2 Design Process



[Figure 1-3] Design Process

# Chapter2. Theoretical Considerations and Case Studies

## 2.1 Kyodong Island

### 2.1.1 Background of Kyodong Island

#### ■ Background of an Island

During the Joseon Dynasty, when the isolation of the Island was especially prominent, the Island was used as to defense against enemies. At the same time it was used as a exile that a lot of Islands were not allowed to have boats which was the only way to communicate between the motherland. In addition, Joseon has forbidden marine activities for 500 years that the Island always had been a place of isolation and solitary place and the Islanders have always treated contemptuously. A lot of Islands were also a place where refugees and displaced people have fled from war. The Island always been a place of pain and longing both past and present.

The Island is a place where its separated from the mainland, that it always had its own unique culture. Present, the Islands remains a from of folk that has disappeared from the land. Also, due to their unique ecosystem, it should be a place to communicate and preserve, not isolate. In addition, a lot of urban residents are trying to find the lost life through island. Due to the rapid urbanization and industrialization, most of the traditional culture has disappeared in most cities in mainland and western culture and capitalism have spreaded out. On the contrary, it is confirmed that there is still a lot

of traditional culture in the Island area where development is delayed due to there is sea between the mainland and the Island. For this reason, among the city dwellers, the island has become a popular sightseeing spot as it accepts the space as a place for ‘daily escape.’ Despite the fact that many bridges have been built recent years, the development is still delayed, but the traditionality is gradually falling, and it is necessary to prepare a countermeasure.

■ Background of Kyodong as an Island



[Figure 2-1] Kyodong Connect the Rivers

Ganghwa Island was the capital city of Goryeo for 39years. Kyodong Island would have been influenced by that time because the place was near the Ganghwa Island. At that time, 200,000 people were moved into Kyodong Island that the food shortages was the problem. To solve these problems, people started spying activities. Ganghwa and Kyodongdo have one of the

oldest history of spies. In particular, in the past, Kyodong Island was the first place of landing for ships.

From the Goryeo dynasty to the end of the Joseon, it was known as the island of exile. When marine forces from other regions, it was necessary to get a pass from Kyodong island to get to Korea or Gaesung where a lot of exchange were happening. In addition, Kyodong island was not safe enough from the invasion of the enemies due to the close proximity of Gaesung and Pyongyang. As a result, Kyodong island was famous for its tragic importance. In order to prevent this, the military of Goryeo, were dispatched here to distinguish people between whether they are an enemy or an ally. In the future, Yeong Choi, the General of the Goryeo Dynasty reclaimed to put the three islands together that in the past, Kyodong island were separated by three different islands. After making it a one big island, it worked as a way to protect the capital of Goryeo Dynasty and it played as a highly significant place in history.

[Table 2-1] Transition of Kyodong Island

Reference : 『최영준, 국토와 민족생활사, 한길사 (1994)』 redesigned



### ■ Background as a border area

Although there was no actual war in Kyodong Island, US troops carried out operations in Kyodongdo to penetrate North Korea. In January 1952,

according to the formation of a guerrilla group of 8240 US troops, a separate non-regular unit called Ulpac was formed in Kyodongdo Which was the first of its kind. After the 'Tiger Brigade' was formed, all the items needed for living, including their food, had to be owned by the Kyodongdo people, regardless of whether they were adults or children. However, at this time, Kyodongdo was in its third year of drought. The war has taken away the peace. From the past, Kyodongdo residents and Yeonbaek(North Korea) residents were like neighborhoods but later on they had to killed each other and became enemies. The Korean War left a wound that could not be healed for Kyodongdo residents. But the war continued even after it was over. With the power of the soldiers, the people had to live under the control and management of the army. The inhabitants had to live in fear in the war and after the war. Even now, there are many inconveniences for them to live.

The history of Kyodong Island extends from Goryeo to the end of the Korean War. Before the Korean War, Kyodong and Yeonbaek were actively exchanged places. Kyodong was the place where the food shortage problem was frequent and this reason made those two cities get close. However, due to the Korean War, many Yeonbaek citizens came to the island as refugees. At the time of the war, about 30,000 displaced people moved into Kyodong island and reconciled with the residents to make farmland and this made today' s large plain in Kyodong. Kyodong is now very famous for rice.

As such, because Kyodong Island was located in the center of the Korean Peninsula, it played a important role in the past as a central base place. In addition, Kyodong people called this place as a navel or womb of the Korean peninsula, which means is that it is a important place as a mother gives a

new birth. As a result, because Kyodong Island is located in the center of maritime transportation from the past, it has served as a crucial point of maritime trade. It is also a place where Confucianism and Christian civilization were accepted in early era in Korea. In Kyodong Island, which has been carried out a log of politically important roles, it has been gradually forgotten after the Korean War.

In 1955, the military demarcation line was set only from Gangwon Province to Tanghyeon-myeon, Paju City, Gyeonggi Province. Because of this, the area of about 67km from the Hangang estuary to the Ganghwa-gun Seodo-myeon Beuleum Island, where no action was taken, was defined as neutral. This space is an entirely peace-neutral area that is not allowed any permits, such as military ships and weapons, without permission. Due to the provisions of Article 1, Paragraph 5 of the Armistice Agreement “Opening the Sailing of Private Sailing of Both Parties“, the Han River estuary is the only neutral region of the two Koreas. At the same time, however, it is also an area where civilians are hard to access.

“The waters of the Han River Estuary shall be open to civil shipping of both sides wherever one bank is controlled by one side and the other bank is controlled by the other side. The Military Armistice Commission shall prescribe rules for the shipping in that part of the Han River Estuary indicated on the attached map. Civil shipping of each side shall have unrestricted access to the land under the military control of that side.”  
[Article 1, Paragraph 5 of the Armistice Agreement]

On the 65th anniversary of the Armistice Agreement, the 5th Hangang Estuary Peace Boat, departed from Gangwha-gun Waepo-ri port, stoped over at Kyodong Island, was held on July 27, It was conducted on the bottom of the Han River and went to the point where Northern limit line is placed.<sup>12)</sup>

This could be placed because the North-South summit meeting was held at Panmunjom on April 27, and an atmosphere of reconciliation and cooperation was established between the two Koreas. It was an event that the citizens hoped to activate the Han River estuary, which corresponds to the neutral area, as a point of inter-Korean exchange. If Kyodong Island in the past was used to protect South Korea, the Island in present should work as a place for peace which can connect North and South Korea.

There are three reasons why Kyodong is an Island of peace. First, Kyodong is an Island where nature, ecology, and humanity coexist. Second, it is a neutral region of the Han River estuary and an island without weapons. And lastly, Kyodong were Island that keep peace without military clashes for 60 years.

## 2.1.2 Plan and Status

### ■ Policy and Plan of an Island

It was December 31, 1986 when the Island first became the policy target after the [Island Development Promotion Act] was enacted.<sup>12)</sup> The Island Development Promotion Act was intended to reduce the phenomenon of widening gap with the inland and the rapid decrease of population. Also to improve the quality of life of residents because there is no active support by the country and the ‘Island Comprehensive Development Project’ was carried out for 10 years and it renews. It has been established by the Ministry of Public Administration and Security. It has also promoted the ‘Willing to Go Island’ and ‘Luxury Island’ projects, which are temporary projects. The Ministry of Land, Transport and Maritime Affairs, the Ministry of

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12) 최유주. “남북평화 기원’ 한강하구 평화의 배 띄우기 ‘재개 “. 『가톨릭신문』 (2018년 08월 05일)  
13) 도서개발촉진법 법률 제3923호, 1986. 12. 31., 제정.

Environment, and the Ministry of Culture, Sports and Tourism are the departments that are managing the Island policy of South Korea. Other central Ministries are also on different projects. In the Ministry of Culture, Sports and Tourism, there are several projects ongoing such as “Island Demonstration Projects to Go” and a wide area tourism development plan, and the Ministry of Land is planning to approach the ocean from various national level. There are more plans showing willingness to develop the Island area and the ocean as a same group with the mainland and not a separate land. Specific policies such as ‘Specific Island ’ uninhabited Island’ and ‘Edge Island’ were also been activated. In 1997, the Special Act on the Preservation of Ecosystems in Dokdo and extra Islands was also enacted.<sup>14)</sup>

[Table 2-2] Island-Related Projects and Laws by Year [M=Ministry], [D=Department]

Enactment Date	Law or Project Name	Ministry of Justice	Affecting Kyodong
1986	Enactment of Island Development Promotion Act	Law No. 14839	
1988~1997	The 1 <sup>st</sup> Island Comprehensive Development Plan Business	M of Public Administration and Security	Create cultural facilities
1990	Wide-area Tourist Development Plan	M of Culture, Sports and Tourism	Develop maritime route tourism
1997	Establishment of Special Act on the Preservation of Ecology in Dokdo Island	Law No. 6846호	Conservation of Natural Environment
1998~2007	The 2 <sup>nd</sup> Island Comprehensive Development Plan Business	M of Public Administration and Security	Create cultural facilities
1999	Coastal Management Act	M of Land	X

14) 독도 등 도서지역의 생태계 보전에 관한 특별법 법률 제 12458호 2014.03.18. 일부 재정.

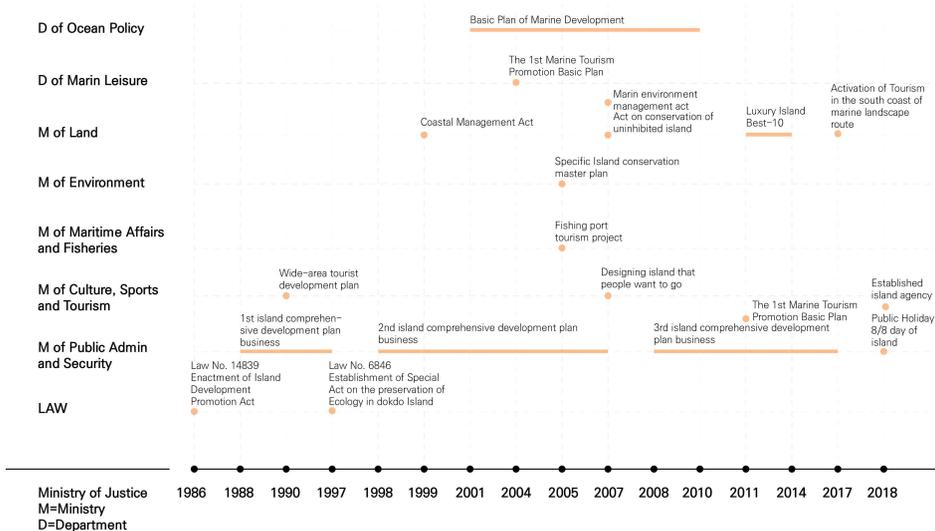
Enactment Date	Law or Project Name	Ministry of Justice	Affecting Kyodong
2001~2010	Basic plan of Marine Development	D of Ocean Policy	X
2004	The 1 <sup>st</sup> Marine Tourism Promotion Basic Plan	D of Marine Leisure	X
2005	Fishing Port Tourism Project	M of Maritime Affairs and Fisheries	X
2005	Specific Island Conservation Master Plan	M of Environment	X
2007	Act on Conservation/Management of Uninhibited Island	M of Land	X
2007	Marine Environment Management Act	M of Land	X
2007	Designing an Island that people want to go	M of Culture, Sports and Tourism	derive characteristics of the island. [nature, ecological resources, history]
2008~2017	The 3 <sup>rd</sup> Island Comprehensive Development Plan Business	M of Public Administration and Security	X
2011~2014	Luxury Island Best-10	M of Public Administration and Security	Develop selected 10 islands through competition.
2011.04	Designing an Island to visit	M of Public Administration and Security	X
2017	Activation of Tourism in the South Coast/Creation of Marine Landscape Route	M of Land	X
2018	August 8, Designated as Day of Island	M of Public Administration and Security	
2018	Establishment of Island Development Promotion Agency	M of Public Administration and Security / M of Administration and Fisheries	X

First, the Ministry of Public Administration and Security conducts Island type and a yearly projects. The Ministry of Land, Transport and Maritime is responsible for promoting marine development, building local fishing ports and managing the coasts. The Ministry of Culture, Sports and Tourism mainly work on business projects. The Ministry of Environment develops drinking water sources and manages island ecological resources.

Despite these efforts, however, the Island area continues to be uninhabited due to the population decline and aging. Currently, various plans such as ‘Comprehensive Island Development Plan’ , ‘Island to Visit’ and ‘Sustainable Island Development’ are being promoted, but still the Island is recognized as a place to look across the ocean. The Island is still a place of loneliness and a longing place that is always being alone.

Within these projects, there is one for Kyodong Island and its called “Designing an Island to visit” . This project developed and designed a modern cultural space in Kyodong Island. It was to help the Islanders to operate and manage the place based on the infrastructure, ecology or culture of the Island region through tourism development. The project was implemented to contribute regional revitalization. However, the problem with the present Island is that Islanders are leaving the place but at the same time tourists are increasing. There are various reasons of this problem, First is because of the education of one’ s child. Second, there is nothing to do and work. The problem with the projects or plans are that they are developing the places where there is no Islanders left in Island.

As shown in the [figure 2-2], the projects were active during 2005 until 2007. The most active ministry or departure is the ministry of land and ministry of public admin and security.



[Figure 2-2] Timeline of the Laws

### Policy and Plan of Kyodong

Over the past few years, there has been an increase in the number of projects targeting Kyodong Island. As it was mentioned earlier that ‘The Island wants to Visit’ and ‘Peace Island Project’ are underway and will be completed by end of this year. Recently, Ganghwa gun was selected as a tourism city of the year in 2018 and Kyodong myeon was selected to develop as a representative tourist attraction of Ganghwa.<sup>15)</sup>

Most of the diverse plans of Kyodong Island are managed by Ganghwa County Office. And small works are in charge of the Kyodong myeon Office. The following [table 2-3] shows various departments in Ganghwa County Office that are carrying out various projects on Kyodongdo.

The Cultural and Tourism Department, which belongs to the Ganghwa County Office, is currently carrying out projects mainly on historical and

15) 강화군청 수산녹지과 “평화의 섬 교동도, 관광명소로 바뀐다.” [http://www.ganghwa.go.kr/open\\_content/main/bbs/bbsMsg\\_Detail.do?bcd=report&msg\\_seq=9492](http://www.ganghwa.go.kr/open_content/main/bbs/bbsMsg_Detail.do?bcd=report&msg_seq=9492) (검색일: 2018년 09월 04일)

cultural properties. Up to now, restoration project of Kyodong-eup Cultural Assets and the construction of exile sites of Yeonsan gun was carried out. Kyodong Eupseong restoration project is still in construction and is also maintenance business focusing on Wolsun port is in progress. Like the Ministry of Culture and Tourism, the Planning and Auditing Office of the Ganghwa-gun Office is responsible for the island-related services.

[Table 2-3] Department of Gwanghwa County Office for Kyodong Island

Office	Department	Agency	Function	Business
Ganghwa County	Cultural and Tourism	Administration	Cultural Art, Public Relations, Tourism Marketing and Development, Library operation, Advertisement	'DMZ walking' 'Yeonsangun Exile' 'Kyodong Eupsung' Promotion of cultural assets
	Planning and Inspection		Future Strategy, Military Development Policy and Development, Law	Island Related Services, Activate Island
	Urban Development	Landscape	Landscape Planning	activation of Daeryong Market
		Regional Development	Urban Policy, Housing Policy, New Deal, Investment Promotion, Public Development	Manghyangdae and Daeryong Market Maintenance business, Jaebi Jip
	Forest and Park		Green Landscape, Park Construction, Forest Protection	Hwagae Mt design
	Construction		Construction administration, civil engineering, road construction, road management, road lighting, special area, sewage management	Project on Daeryong Market, Infrastructure maintenance construction, Landscape project,
Kyodong Myeon		Lotus Planting on Koku Reservoir		
Incheon City Hall		Peace Industrial Complex		

The representative projects by Urban Development department was Jaebi Jip which proceeded with KT, private company and villages also the

revitalization project on Daeryong Market was carried out in this department. To explain in detail, they created a symbolic sculpture such as a swallow. Currently, there is a maintenance project in process focusing on Manghyangdae. The project is focusing on constructing parking lots for bus, toilet, and road maintenance.

Next year, the department is planning to open a public contest on constructing local garden(지방정원) on Hwagae Mountain. The scale will be more than 100,000 square meters. Also, they are preparing a waterside ecological park at the Nanjung Reservoir site next April with the Rural Community Corporation. The Nanjung Reservoir Waterfront Ecological Park project is also about 100,000m<sup>2</sup>, and it is planned to carry out public contest project with the Ministry of Public Administration and Security. The Forest Park Department is responsible for the planning and design of Hwagae Mountain and will create observatory and shelter in the Koku reservoir and watchtower, and it will be carried out this year. The Construction department will carry out a landscape improvement project on Kyodong Bridge to Namsan Port. They are planning to install night scenery facilities, coast roads, road maintenance, flower planting, and restrooms. Also, various projects are targeting Kyodong Island and they are underway. The projects for the island as of 2018 are shown in the following [Table 2-4].

[Table 2-4] Business and Projects on Kyodong Island

Name of Project	Organization	Function	Period	Location	Purpose
Make a charming lover island	Urban Development	Territorial and regional development	Annual Repetitive	Around Daeryong Market	1960-70s memories Landscape
Flower Road	Kyodong Myeon	Regional Development		Kyodong Myeon	Flower Tour

Name of Project	Organization	Function	Period	Location	Purpose
Kyodong Hyanggyo	Cultural Properties	Culture and Tour	Annual Repetitive	Kyodong Hyanggyo	
Improve landscape	Construction Department	Regional Development	20080101-20221231	Kyodong Island	Improve local landscape
Increase local income			20080101-20181231		Expansion of Agricultural infrastructure
Daeryong Market-Yuns an exile road construction	Construction Department	Transportation and traffic roads	20110101-20221231	Daeryong Ri	Road Planning
Sewage main tenance of farm/fishing village		Environment Protection	20130101-20181231		Improve water and residential quality
Improving landscape		Territorial and regional development	20170101-20181231	Daeryong market	expansion of tourism infrastructure
Formation of landscape in Seohan	Marine Fisheries	Environmental and marine protection	20180101-20181231	Seohanri Dongsan wetland	Creation of fishermen workshop
Island of Peace project	Urb Development	Promoting small projects	20170101-20191231	Kyodong Island	Establish island as peace
Restoration of Song Am Park place	Culture Tourism	Culture and Tour	20180101-20191231	Sangyong ri 516	Restoration of Korean braille creator

## ■ Synthesis and Implications

The projects related to Kyodongdo have not been conducted over a long period of time. It is a recent story that the Kyodongdo started to rise. As relations with North Korea were gradually eased, businesses related to interest in Kyodongdo began to emerge. Kyodongdo is changing due to the ongoing projects to become a representative tourist destination of island of border area. However, the actual impact of these projects on the Kyodong

Island is too small to be completed compared to the contents and titles of the projects. According to residents who run a small shop in Kyodong market, in case of jaebi jip, the facility was made for to help the utilize the market and work as a tourist information center, whereas, they do not know how it affects on market. In case of the business 'making a charming lover island', which also targets the Daeryong Market, the aim of the project was to create a landscape scenery and the activation of the market whereas it simply ended up on a scale of road maintenance. Also, there are various projects on developing road such as DMZ walk path, or Nadeulgil path. However majority comments from the interview by tourists, they were having hard time on finding road signs. As mentioned above, the contents and effects of the projects are insufficient, but a lot of organizations are showing an interest in Kyodongdo and making a steady change. The projects to be carried out in Kyodongdo should not only be at the place where it has already been a tourist attraction point. Also, the projects should not proceed only not from the professional point of view, but it should lead by opinions of various people. It is necessary to discover new things and devise ways of connecting to other islands of the border region, rather than continuing to remodel the found sightings areas. Kyodongdo will be the first case of well developed island of the border area.

## 2.2 Eco and Border area Tourism

### 2.2.1 Tourism

#### ■ Eco Tourism of an Island

If past tour was for appreciation, now its turned into experiential sightseeing. Experience allows people to feel all five human senses, and it lasts longer in memory. On the other hand, appreciation tour can only feel 'seeing' in the five senses. Also, there is a limit in feeling and remembering the space. Experience is mainly subjective, and it has an advantage that it gives every single person a different feelings. The current trend of tourism is 'healing trip' which introduces a method to contribute economically to the local community and at the same time feels relaxation and comfort in the natural environment using local natural resources. In professional terms, it can be called eco-tourism. Eco tourism is not an unnatural development that does not fit the area, but tourism that increases the economic benefits of the community by exploring the potential value of their history, culture, life, and food without undermining the culture of the area. Most of the island tours in particular are for vacation or recreation. As mentioned earlier, the island has been isolated for a long time and has been ignored by people, but due to the development of transportation, it has now become a tourist attraction loved by tourists. However, tourism in the island is still not satisfying the needs of tourists because of the lack of isolation, aging, backwardness, problems of acceptance of tourists, and lack of tourism products.

The island is separated from the inland, and the island tourism is a concept that emphasizing the geographical characteristics. The natural ecology, culture, socio-culture, landscape scenery, and marine resources are

the main subjects of tourism experience.

[Table 2-5] Island Tourism Resources

Classification	Resource	Contents
Landscape Resources	Nature	Sea, island, mud flat, creature, mountain, sea rock, seascape
	Artificial	Fishing village, fishing port, lighthouse, ship, fishing spot, coast road, coastal walkway, coastal bike path, marine sports, cruise ship, submarine
Cultural Resources	History	Exile, house, fence
	Local Living	Local food, dialect, local festival, local ancestral rites or memorial service

Compare to other tourist areas, the Island has a disadvantages in accessibility. In addition, they are highly influenced by the weather. Therefore, people do not easily plan to take trip to an island. In order to compensate for this, various national policies have been introduced. The national land plan, which progresses for 10 year has changed to 20 year plan. This plan is a development plan with tourism element under the consideration of saving the island. However, the problem with these policies is that they are primarily targeting the tourists. They are lack of consideration and understanding of the owner of the island. The island, Chu in Yeosu is a small island designated as a natural monument. This island is where the dinosaurs lived till very last in Korean Peninsula that many dinosaur fossils and many other historical preservation values were found. However, the tourists collect agricultural products or fishing without any permission, and recently, dinosaur footprint sedimentary rocks were being damaged or taken out.<sup>16)</sup>

The goal of ‘Designing an Island that people want to go’ is 12 million

16) 김준, “그 섬의 공룡들이 말한다 ... 섬은 쉬고싶다” 『대한민국 정책브리핑』 (2017년 09월 22일).

tourists. According to this goal, from the past, government has thought the large number of tourists will help to activate and development the island. However, it is not the tourists who are important for the tourism in island and the number of them. It is true that after the opening up the bridge, the development and revitalization of the island took place in short period of time. However, island corruption is proceeding rapidly in the same time too. In the [table 5], most of the policies are only to change the islands, such as designing an island, planning an island or development of an island. The island is where we need to approach slowly and with care. It should not be a plan to change island but a plan to protect, preserve and understand. The reason why tourists visit the island for tour is because they have different conditions compare to the city center.

#### ■ Peace Tourism of Border Area

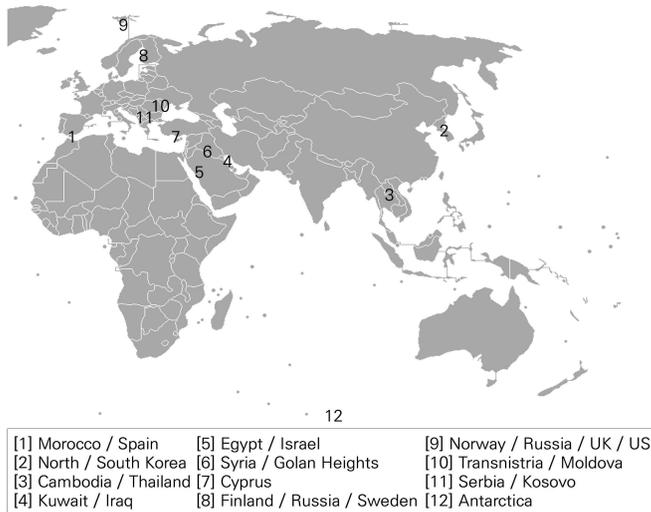
Korea is a country where the war is still going on. As of the year 2018, Korea, a nation with the same language and culture, still divided into North and South for 50 years by the de-militarized zone (DMZ), which symbolizes the armistice after the Korean War. Also, de-militarized zone is controlled for ordinary citizen. They must have a pass from government or an army to enter, and it represents ideological confrontation.

There are a lot of demilitarized zones in the world. Among those zones, Korean DMZ is the most heavily armed. The twelve demilitarized zones are mostly

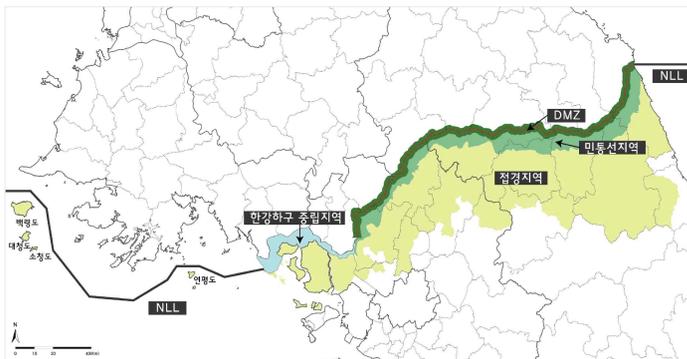
around Asia. There are Cambodia and Thailand, Egypt with Israel, Syria and the Golan Heights, Finland with Russia, and Sweden. There are 12 de-militarized zones in total including those countries mentioned above.<sup>17)</sup>

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17) 박은진, 심숙경, 이상대, 최용환, 황금희(2012). 『분단·대립 접경지역의 해외사례와 한반도 DMZ의 시사점, 이슈&진단』. (44). 1-25



[Figure 2-3] The De-militarized Zone of the World  
Resource : 『Gyeonggi Development Institute(2012)』 redesigned



[Figure 2-4] Map of Korean DMZ  
Resource : 『Gyeonggi Development Institute(2012)』

China and India has the longest border in the world.

The border area of Korea is divided into the NLL (Northern Limit Line), the northern limit line of the West Sea and the East Sea, and the neutral zone of the Han River estuary and the DMZ of the

onshore division. In addition, the Civilian Line area under the DMZ is within 10km from the DMZ and is a place where civilians such as tourists can enter.

The area below the Civilian Line is called the border region. The border area is adjacent to the DMZ and the NLL, and there are many undeveloped areas. To support this, the Special Act on Supporting the Border Area was enacted.

There are few examples of the use of border regions in other countries. DMZ of Germany was transformed into ecotourism and tourism area. Since

the reunification of the area, which was restricted for 30 years, it has started the “Grunes Band“ project.<sup>18)</sup> Currently, it has been expanded to the European Green Belt, which is a living historical monument in Europe. Historical military facilities have been demolished shortly after the reunification, but some of the remaining artifacts have been used as tourism resources, museums or memorials, and are being used as ecological and historical education and tourist sites. Finland and Russia have 1,250 km of border area.<sup>19)</sup> Most of these are forest areas and are strictly controlled. The Russian side has a very good natural environment and very high protection value. Thus, 14 protected areas were designated in Finland and 6 protected areas in Russia. In addition, Friendship Park and Relationship Park were established for cooperation. Conversely, in Hong Kong and China, the border area has been developed into a big city. It currently attracts financial and business facilities, high-tech industries, and expo facilities.

As cases in the above, the border area of Korea needs to be transformed into space of reconciliation and peace and not space of hostility and disconnection. As the inter-Korean summit on April 27, people’s expectations for unification are increasing. The border region should prepare peace not as a place for war but as a place of reconciliation and integration. The border area is now emerging as the best tourist destination. This is a place where ecological, cultural, and tourism resources are scattered. Despite strict identification procedures such as ID verification before entering the civilian access control area, the number of tourists is increasing every year.

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18) Same Reference As Above. p. 5

19) Same Reference As Above. p. 13

[Table 2-6] DMZ Tourism Resources

Classification	Resource	Contents
Landscape Resources	Nature	North Korea, mountains, coasts, rivers, Han river estuary, Imjin river, Hantan river, books, clean environment, migratory birds and books Local seabirds habitat, rice, rare freshwater fish, natural monuments [Daewan, Daeamsan, Bibongsan, Animals, Continue Mountain] Baekdam Valley and Seokhwa Stream
	Artificial	North Korean buildings, iron wire / cease-fire line, Southern limit line, Cheorwon and other regions plain, observation deck
Cultural Resources	History	Military districts, fortresses, traditional houses, castles, military facilities, displaced persons
	Local Living	Non-developed local living environment & food

In particular, the active DMZ area in Korea is mostly in Gyeonggi province and is also actively introduced in internet but no other DMZ are advertised well. In addition, 90% out of foreign tourist who visits DMZ, visit Paju which is on the west side of Gyeonggi province. In Hwacheon, Kangwon Province, promoted ‘Four Season Tour’ and more than 1,500 tourists visited this year that last year it was only 196 tourists.<sup>20)</sup> Even on the last summit of the South and North Korea, 42,220 people visited the third tunnel, 20,754 in the Imjin river, and 33,909 in the Oudu mountain observatory.

As a result, in July, the Ministry of Culture, Sports and Tourism progressed the DMZ peace tour cooperated with the Korea Tourism Organization. This tourism is promoting business by food, integrating tourism resources, local culture and events.

20) “남북 평화 바람 덕에 화천군 외국인 관광객 7배 증가” 『연합뉴스』 (2018년 06월 19일).

## 2.2.2 Tourism Demanding Forecasting

Tourism is growing along with the size of Korean economy. This is increasingly associated with the Korean Wave craze. As a result, many cities in Korea are very involved in the tourism industry, and Ganghwa Island, has been selected as a tourist city of the year and is carrying out various projects in Kyodong Island including various other islands that is included in part of Ganghwa Island. One of the most important parts of the development of the tourism industry is the prediction of tourism demand. The reason why tourism demand forecast is necessary is because the tourist industry workers formulate business plan based on the prediction results.

[Table 2-7] Tourist Population[Chuseok applied from 21st]

Month	Date	Vehicle Average	Population Average	Total
Aug	Weekdays	207	354	19,534
	Weekend	482	864	
Sept	Weekdays	220	392	28,895
	Weekend	476	1,651	
	Chuseok	1,159[Chuseok:2478]	2,661 [Chuseok:5859]	
Oct	Weekdays	402	561	18,744
	Weekend	429	740	
Nov	Weekdays	216	364	16,651
	Weekend	407	709	
Dec	Weekdays	206	326	19,867
	Weekend	453	843	

The above table shows the number of tourists in the Kyodang Island from August 2018 to January 2019. Due to Kyodongdo is DMZ area that the number of tourists has not been surveyed, that the writer has collected the data. It is difficult to know the demand of tourists before this research, so there is a limit in conducting accurate yearly tourist demand survey.

It is true that the tourism has increased after the bridge was made. However Tourism in Kyodong Island expected to face limitation in attracting

tourists only by Kyodong Bridge. The tourists rate except days like thanks giving, it seems about 350 to 600 outsiders visit on weekdays and 700 to 900 people on weekends. At present, the demand for tourists in Kyodongdo has increased about 1.5 times compared to the previous year after the Jaebijip was found.<sup>21)</sup> In addition, the Kyodongdo village enterprise has generated direct economic effect by raising KRW 100 million for 9 months from April to December last year. Especially, 'Bridge of peace in Kyodong-do', a program at Jaebijip, approximately 5,000 people participated, and about 700 students from elementary, middle, and high school in Gyeonggi Province participated in the Kyodong expedition program.<sup>22)</sup> It will be necessary to establish a wider network with the surrounding area to facilitate the convenience of tourists and tourism. However, in the case of Chuseok in September 2018, 5228 people and 5859 people on 23rd and 24<sup>th</sup> has visited and respectively exceeded the demandable number of Kyodong market. There was not enough parking space in Kyodong market that the cars were even parked on streets. Also, because the market street is so narrow that it made discomfort for tourists, and the ingredients of the restaurants were all sold out. Considering these problems, it is necessary to limit the daily demand of tourists.

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21) 김일창 “ICT구축해 관광객 1.5배 늘어... KT, 교동도로부터 감사패” 『NEWS1뉴스』 (2018년 04월 01일).

22) 김윤희 “강화 교동도, KT ICT 기술로 관광명소 변신” 『ZDNET NEWS』 (2018년 04월 01일).

[Table 2-8] Photo of Daeryong Market on Chuseok [Korean Thanks Giving]

Month		
Lack of Parking spot		
		
		
		

## 2.3 Case Study

### 2.3.1 Gappa Island, South Korea

#### ■ Gappa, the Island of Isle of Man



[Figure 2-5] Gappa Island

The island of Gappa, which means a lot of waves, is located in the southwest of Jeju Island and is 5.5 km away from the Mosul Port of Jeju Island. The area of Gappa is very small with a size of 0.87km<sup>2</sup>, but it is the fourth largest island in Jeju Island. The highest point of the Island is 20m. The island is generally flat and has gentle terrain. Also, there are only few trees on the island, that if one stands on the end of the island, can see the opposite side of the place.

Nowadays, the Gappa is transformed into a Korean art island, as in the case of Yakushima in Japan, which was described above. But until 2013, there were hardly no one new came to visit this place. 170 Gappa residents, stands on their home island, watching ferries filled out with people that are taking to other islands.

## ■ Project of Gappa

One of the strengths of Gappa is that it has a clean natural environment. But every year since March 2009, the ‘Gappa Cheongbori Festival’, which runs from March to May, attracted many tourists and created the identity and symbolism of the Gapa, but threatened the ecosystem of the its place. The results of the tour, which the locals made to spread the propaganda widely, came back as poison to the ecosystem of Gappa. HyundaiCard and Jeju Special Self-governing Province have started the Gappa project to provide a solution to this problem. The key point of the Gappa project is to develop but not hurt nature, communicate with the residents in Gappa, build an economic base to make people to return back to the area, and expand the culture and arts space. HyundaiCard and the Jeju Special Self-governing Provincial Office carried out the project under the banner of “Change to protect”.

There were seven new spaces were formed for the Gappa project. Most of the facilities are located in the north, where the passenger terminal is located, and few in the south and nothing was planned on the east and west. Firstly the Gappa Terminal. It is a complex space with a café selling specialties and souvenirs while playing the role of a ticket office. Secondly, there is a Gappa snack bar. The Gappa Snack Bar is a small cafe where tourists can take a short break. Behind the snack bar, there is the Gapa Archives Room. This is the space for the Gappa project exhibition. The fourth is the Gappa House, which there are three houses on north and two on south, and its for tourists to stay. Fifthly, there is a restoration space of original vegetation. This is the work of restoring the road by turning the pavement back to its original nature. In addition, the work of planting the

plants that had survived in the past and returning the ecosystem of the Gappa to its original condition was carried out.

[Table 2-9] Photos of Gappa Island

Photo of the Building	Name of Building	Photo of the Building	Name of Building
	Terminal of Gappa		Gappa House
	Gappa Artist in Residence		Gappa Snack Bar

To the south, as mentioned above, there is the Gappa House and the second to introduce is the Gappa Fishery Center. This is the place where the Gappa fishermen place has been rebuilt to a restaurant. Tourists can enjoy a variety of seafood dishes made from Gappa.



[Figure 2-6] Yakushima Map  
Resource: japan-guide.com

### 2.3.2 Yakushima Island, Japan

Yakushima Island is a very small island in Japan which lies off the southern coast of Japan. The area is about 500 square km with 132km of circular perimeter. The climate of the island co-exist is a place where the warm climate of Kyushu region and the cold climate of Hokkaido coexist, and the forest is more than 90%, which is a representative example of Japan's

eco-tourism destination. The forest is also has more than 1,000 years old cedar trees and diverse and unique flora and fauna. It was first registered in



[Figure 2-8] Yakushima Island II

Resource : New York Times



[Figure 2-7] Yakushima Island I

Resource ; Japan Monthly Web Magazine

the World Nature Heritage List in December 1993.<sup>23)</sup> To look for the similarity between Yakushima Island and Kyo- dongdo, both places are rich in flora, fauna and coastal seas, rivers, valleys, and reservoirs, and it plays a big important role for the tourism resource. The beach or coast of Kyodongdo is currently unable to enter due to the iron wire, but it has potential for the attractive tourism resource.

Yakushima has sub-tropical vegetation and boreal vegetation, and among the alpine plants there are many Yakushima endemic species. In the case of animals, relatively common animals exist, but among them, deer and monkeys are particularly abundant, and are endemic species that can only be seen in Yakushima. There are also 150 different birds and 1,900 insects.

Kagoshima Prefecture developed the island. They had the concept of regional and community development and formulated the master plan for the village. There were three groups, national, prefectural and island level, that

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23) Hisae Tokumaru. Nature Conservation on Yakushima Island : Kagoshima Prefecture' s Efforts. Nature Conservation Division, Kagoshima Prefectural Government Kagoshima.

had discussed about the Master Plan. In those groups it included local residents, relevant institutions and scholars.



[Figure 2-9] Yakushima Island III

Resource : New York Times

### ■ Eco Tourism in Yakushima Island

After being registered as a World Natural Heritage Site, local residents are promoting ecotourism for the purpose of promoting the tourism industry for economic revitalization, allowing tourists to experience their culture and life. Outside people come directly to their lives and culture, but the the way that they can keep the island safe from them is because there is a 'Yakushima Country Code' that tourists must observe. This is simply a tourist rule, which is ①respect the culture and life of local residents. ②Tourists never throw away garbage in the island. ③Do not feed wild animals. ④Do not steal animals or plants. ⑤Save plants and animals. ⑥The camping is done at the designated place. ⑦Do not smoke bonfires in the forest. ⑧Must report

before climbing the mountains. ⑨Do not go off from appointed route. ⑩ Prepare well even if it is one day mountain climbing. In addition, the number of participants in ecotourism should not exceed 10 people that this helps from conserving the ecosystem at the same time enhance the quality of the experience.

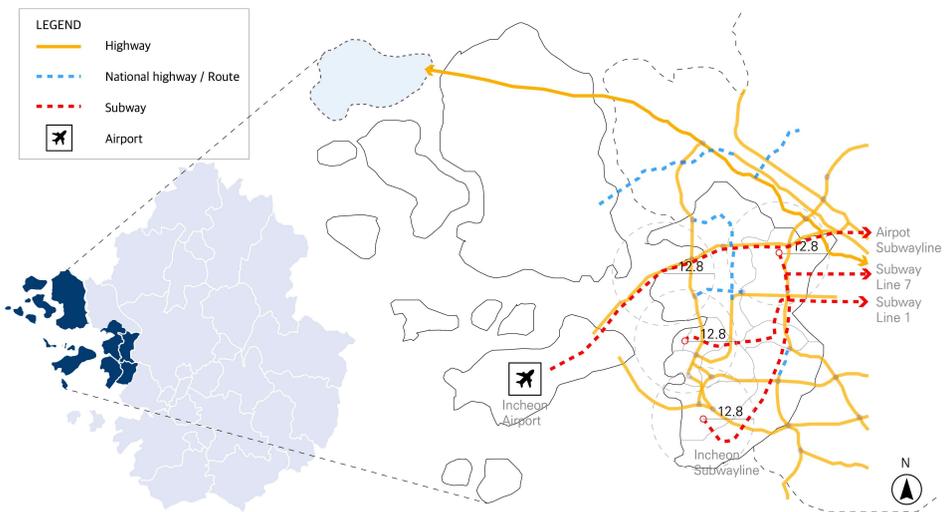
Their goal is to create an island of environmental learning and research across the island. The whole island was divided into three areas mainly in Okudake area. This enabled various activities to be divided into a protection zone for protecting nature, a contact zone for activities in a certain rule while preserving ecosystem, and a living culture zone for living culture. In addition, there are short programs which is open to anyone for two hours. It is held every Saturday and Sunday. The study program provides basic knowledges about natural environment on Yakushima. Also, there are one-day or independent environment study programs. For one-day study programs, it is held six times a year observing the nature targeting local parents and children. For independent environment study program, which go for eco-tour with environmental activities for elementary and junior high school children. In additon, there are nature experience seminars, environmental culture foundation, environmen preservation support programs, nature protection activities, environmental education programs, cultural projects and many other educational programs within this island.

# Chapter3. Site Analysis

## 3.1 Analysis of Site

### 3.1.1 Overview of Wide Area

#### ■ Site Location



[Figure 3-1] Incheon Metropolitan City Overall Map

The site, Kyodong Island is located in the northwestern part of Ganghwa-gun Incheon City. It is only 4~5km away from Ganghwa island. Also, it is located in Cho River which represents the place where Imjin, Yesung and Han rivers meet. Cho River begins at Ju Island(uninhabited island located in de-militarized zone) and ends at the small island of Mal Island. The place where three rivers meets and heads to the sea is called the Han river estuary. It passes through the northern end of Ganghwa Island and northern part of Kyodong Island.

Kyodong Island is composed with one main land and one uninhabited island,

Eungahm which were three separated island in the past.



[Figure 3-2] Site Location

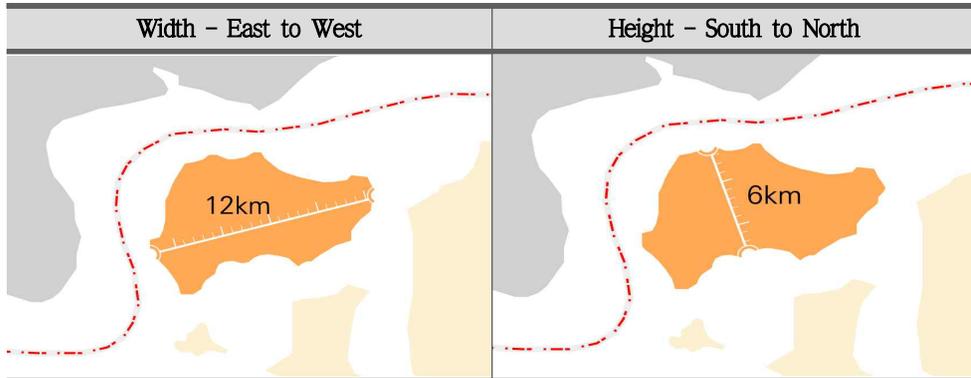
In [Figure 3-2], Kyodong is facing towards the Yeonahn in North Korea and is a border area that is very close to the 38th line. In the west, there is the location of Seokmo Island and Ganghwa Island. It is 2.3 km away from the nearest North Korean coastal force. According to Joseon calculation of the distance, which is 0.393km in 1Li, it is 80 Li to Kaesong and 260 Li to the Haeju which is located in the west.<sup>24)</sup> It is also the 14th largest island in Korea, but among the islands belonging to Ganghwa-gun, Kyodong is the second largest island.

The only way to get into Kyodong Island is through Kyodong Bridge, which opened on July 1, 2014. Four years ago, when the Kyodong Bridge was not built yet, boat from Ganghwa Island to Gangdong Island was the only way to

24) 최중기 외11명 (2015). 『교동도』. 민속원 38쪽

get to Kyodong island.

[Table 3-1] Size of the Site



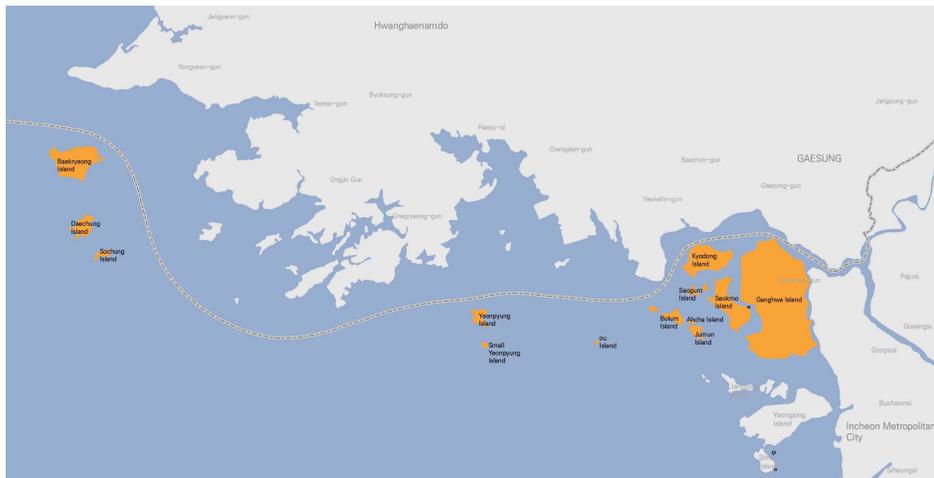
As shown in [Table 3-1], Kyodong island is 12km east to west and 6km north to south. The total area is 47.16km<sup>2</sup>.<sup>25)</sup> There are more than 10 ports such as Namsan Port, Wolsun Port, Hodu Port, Nakdu Port, Yuldu Port, Maltan Port, Juksan Port, and Binjang Port. Juksan Port that Kyodong was actively used as main trade place in Koryeo Dynasty. The Wolsun port was the only port that allowed civilian access to Kyodong Island before the Kyodong Bridge was established.

Nowadays, Kyodong Island is a place where people do not seek well. Also, it is a place where tourist does not want to come and visit again. In the past, Kyodong Island played an important role that the Island is located on the center of the Korean Peninsula. The reason why the popularity of Kyodong Island decreased, even though the place played a big role in the past, was since when Korean Peninsula divided. Due to this, the Kyodong island was classified into the 'Civilian Line' area and now it remains as a small island unit.

25) 최중기 외11명 (2015). 『인천섬 연구총서 1 교동도』. 민속원.

## ■ Islands Around Border Area

There are no islands on the east side of border area on the other hand, there are approximately 13 islands on west side. Kyodongdo is the second nearest island from the motherland of South Korea of islands of border area also, it is the second largest island. Ganghwa, which is the first entry island from the motherland and Baekryeong, which is the farthest island, are the most well known islands. However, Ganghwa island is known for historical heritages not only for the border area. Especially the trail against Mongolia for 39 years. Baekryeongdo is known for food and natural resources. Other islands have different nature scenery resources that it has a possibility to link them all as a one tour. The reason why the islands around the border regions should be raised is as follows: First, only a small number of islands are in contact with the border area; second, the islands are preserved without being developed; and last, there are many projects and businesses for the border area, but the islands has always been outreach for its safety.



[Figure 3-3] West Side of Border Area [orange colored are the islands in border area]

## ■ Site Traffic System



[Figure 3-4] Traffic System in Incheon

From the past, Kyodong island was a key or strategic point of transportation. In addition, it is located in the forefront of South Korea that it is known as an important place in military history.

The ferry was the only way that civilians could enter the island. However, currently, all ferry routes have been suspended only because the island is located at the forefront that Kyodong Bridge is the only way to enter. In addition, there is only one bus route to get in to the island from other areas which is by taking 70 (Ganghwa). It takes about 4 hours to reach the island by public transportation from Seoul. Also, there are only two ways to access by car from Seoul which is by Gimpo Main Street and Ganghwa Main Street. The both ways are approximately 80km and take 2 hours and 30 minutes. This result shows that the accessibility is very poor to enter.

### 3.1.2 Overview of Kyodong Island

#### ■ Mapping

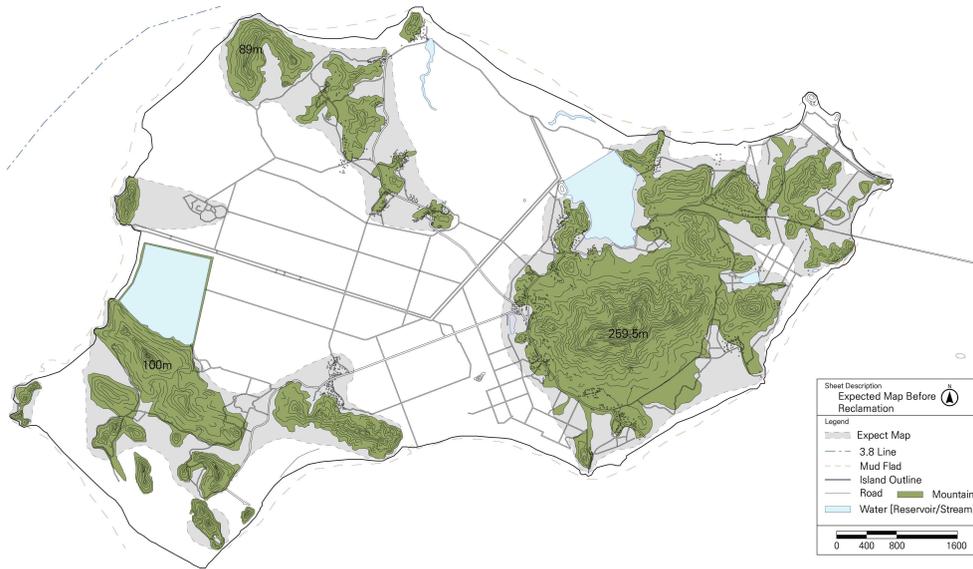
Before proceeding with the spatial design, the digital map of the site is not provided in order to the site is sub-proximity border area. Therefore, the process start by making a new digital map of Kyodong Island in accordance with the digital map of Ganghwa Island.

[Figure 3-11] shows the city structure. When you enter the Island by driving through Kyodong Bridge, there is Hwagae mountain. Koku reservoir is located on east side of the Island, near Mt. Hwagae, and to the west there is Sujeong Mountain with Nanjeong reservoir. In the middle, the V shape is a main farming road which water flows in between.

[Figure 4-12] is the predict map before reclamation. The map from [table 2-1] Transition of Kyodong Island, overlapped with the map.



[Figure 3-5] Map of Hills, Roads, Coastline



[Figure 3-6] Expected Map Before Reclamation

Since the truce, 123 villages in the border areas such as Gyeonggi, Gangwon and Incheon province have designated as a village of Civilian Control Line(민통선) since February 1953 and Kyodong island is one of the m.<sup>26)</sup> Kyodong Island was originally divided into three mountain islands. One was on the eastern side of Hwagae Mountain (260m), the Sujeong Mountain (100m) on the Southwest side, and the Yuldu Mountain (89m) on the Northwest. The depth of the ocean near the island was shallow that the construction of the island was possible and it made the present tidal flat. In addition, during the process of making artificial islands in 1232, the year of the Goryeo Dynastym the sedimentary field and the embankment were built together and it formed the present wide plains on the ground of Kyodong Island.<sup>27)</sup> There are also two reasons why they could still keep a beautiful wide plains above the ground. As a result of the Mongolian invasion in the

26) 김일한. “평화의 섬 교동도를 가다.” 『통일과 평화(9집 1호)』 (2017).

27) 이진환 (2016). 『교동도의 역사와 문화산책』. 서울:정행사

Goryeo period, the population rapidly increased and the refugees built farmland in order to feed themselves. In the same time, the displaced people who fled from the Hwanghae island of Yeonback county also worked together with the residents of Kyodong island.

Present, Kyodong island is a part of Ganghwa County. However, it has been designated as Kyodong County in the past. There are 17Ri (Village) wich is local area in Kyodong Island, Dae-ryong 1 and 2 ri, Eupnae ri, Sangyong ri, Bongso ri, Koku 1 and 2 ri, Samsun 1 and 2 ri, Insa ri, Jiseok ri, Muhak ri, Nanjeong 1 and 2 ri, Seochon ri, Dongsan ri, and Yangap ri.

### ■ Land Use

Currently, the area is developed mainly around Hwagae Mountain. The developed area is surrounded by mountains of less than 100m. The reclaimed land, has been cultivated and farmed. Accordingly, the Nanjung Reservoir is located in the southwest and the Koku Reservoir is in the northeast. The area of the Nanjeong Reservoir and the Koku Reservoir are 889.4ha and 869ha, and the available reservoir storages are 6.2144 m<sup>3</sup> and 2.648 m<sup>3</sup>.<sup>28)</sup>

[Table 3-2] Kyodong Island Land Use

Land Use	Paddy Field	Farm Land	Grass and Forest	Forest
Area	30,128,221	5,306,828	3,308,921	5,414,448,
(m <sup>2</sup> )(%)	(68.2%)	(12.0%)	(7.5%)	(12.3%)

Kyodong Island has a such a wide agricultural area. The paddy field is 30,128,221m<sup>2</sup>, which is 68.2% of the total area of Kyodong Island, the land area is 5,306,838m<sup>2</sup> which is 12,0%, the grass and forest area is 3,308,921m<sup>2</sup> which is 7.5% of the total area and lastly, the forest area is 5,414,448m<sup>2</sup>

28) 김재득, “김태흠 ” 경기도내연중저수율0%저수지10곳...피해면적 최대” <http://www.joongboo.com/news/articleView.html?mod=news&act=articleView&idxno=1200869> (검색일: 2018년 09월 17일)

which is 12.3%.<sup>29)</sup> In particular, the rice cultivation is 3,3113ha, which is 22% out of the total cultivated area, and the rice cultivation is 92.8%.<sup>30)</sup>

Kyodong island, the villages are formed around the mountains. [Figure 3-4] shows the formation of villages around the mountain area. The zone A is a village, Daeryong ri, which was formed around the Hwagae mountain and it is the largest mountain in the island. The zone B is a village called Jiseok ri, formed around Bammuhri Mountain, which was originally called Yuldu Mountain, and lastly, Nanjeong ri village in zone C, which formed around Sujeong mountain.



[Figure 3-7] Kyodong Island Village Formation Map

In the village A, Daedong-ri is the first town to meet from the Kyodong Bridge and also it is the mostly active village in Kyodong island. Also, most important facilities are placed in this area such as, Kyodong-myeon Office, Kyodong Post Office, Kyodong Market, Kyodong Elementary School and Jaebi

29) 국립환경과학원 자연자원연구과 (2010). 『석모도 · 교동도 · 불음도의 자연환경』. 서울:국립환경과학원 pg. 53

30) 최중기 외 11명 (2015). 『교동도』. 서울:민속원 pg. 27

Jip. There are ports and Koku town on the upper side of the village. Village B is not as active as Daeyoung-ri, whereas there are a lot of village hall, public health center, Nanjeong elementary school, gas station, church, Manghyangdae and 2 ports. Also, theres village hall, public health center, Nanjeong elementary school, two ports and Nanjeong reservoir in Nanjeong village.

As of June, the total population of the city was 2,964, in 2015, it was 3,003 and 3,187 in December 2007 (1,564 male and 1,623 female).<sup>31)</sup> Comparing those populations of 2018 and 2007, 223 people were decreased within 11 years. The number of households increased by 1,384 in 2007, 1,423 in 2015, and 1,466 in 2018, which is higher than in 2007.<sup>32)</sup>

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31) “강화군청 매월인구통계 “ [http://www.ganghwa.go.kr/open\\_content/main/open\\_info/data/demographics.jsp](http://www.ganghwa.go.kr/open_content/main/open_info/data/demographics.jsp) (검색일: 2018년 8월 1일)

32) “강화군청 매월인구통계 “ [http://www.ganghwa.go.kr/open\\_content/main/open\\_info/data/demographics.jsp](http://www.ganghwa.go.kr/open_content/main/open_info/data/demographics.jsp) (검색일: 2018년 8월 1일) 재인용.

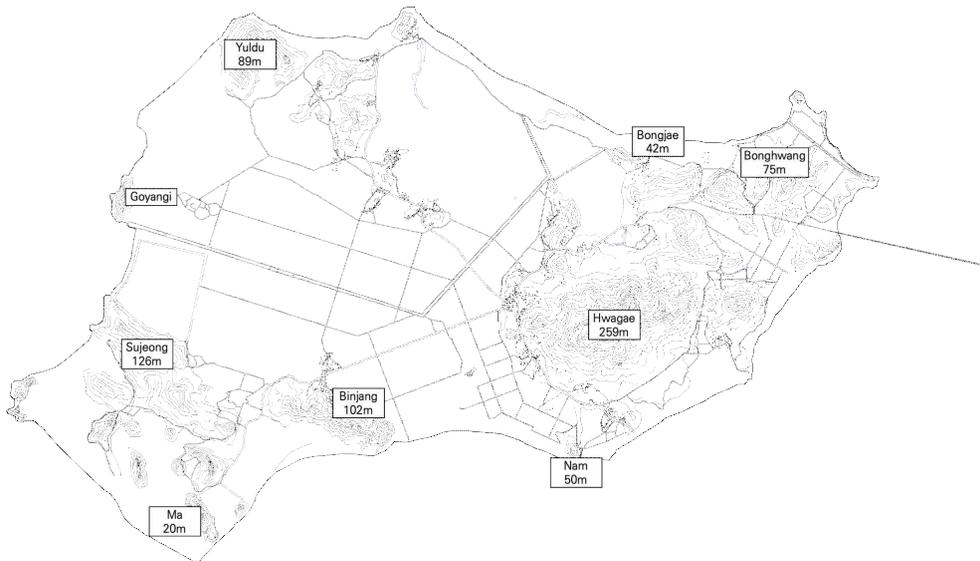
[Table 3-3] Photos of Kyodong



## 3.2 Local Resources in Kyodong Island

### 3.2.1 Natural Environment Analysis

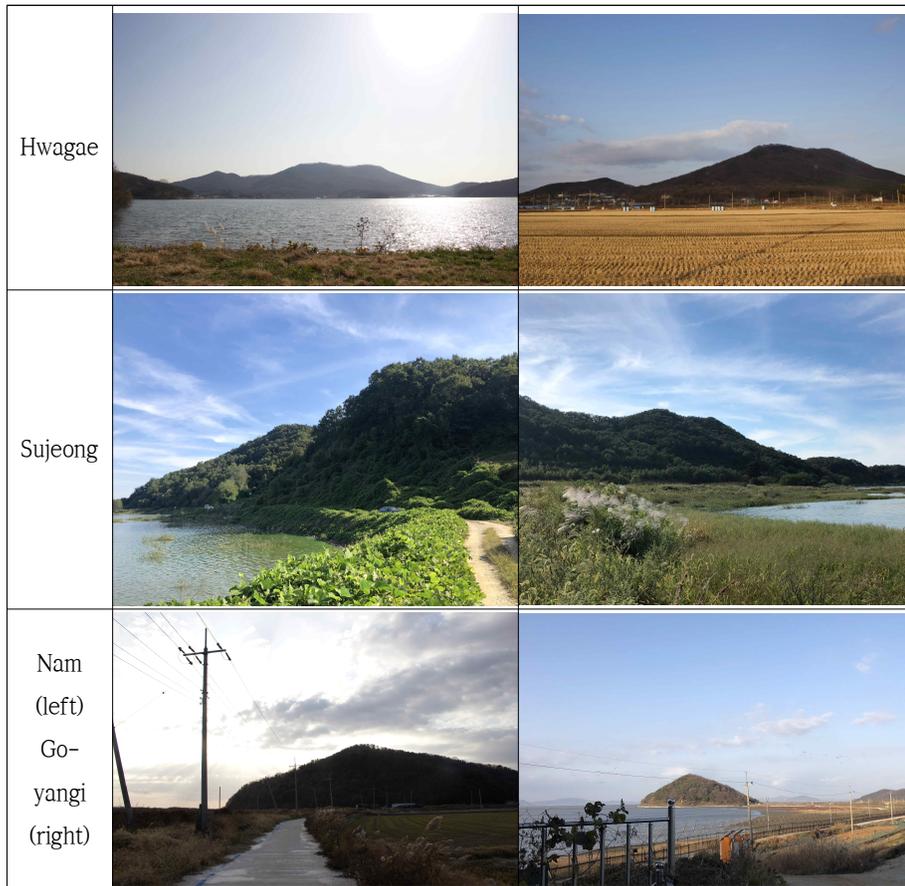
#### ■ Mountain



[Figure 3-8] Mountains in Kyodongdo

Kyodong island is formed with about 9 mountains. In addition, most of the mountains are 0-10m high which is a very low altitude. They are mostly composed of low-acid hills and clear plains. This is evidence that Kyodong island was covered in the sea in the past. Cho Mt and Hwagae Mt is on southeast of the island, Bonghwang Mt, Bongjae Mt on northeast. On the north-western side, there is Sunwol and Goyangi Mt. In the west there is Sujeong mountain, in the north side of the island there is Yul Doosan Mt, in the east, Bonghwang Mountain is placed, and in the south there's Nam, Binjang and Ma Mt. Among these, the highest mountain in Kyodongdo is Hwagae Mountain with highest point of 259.5m. Most of the mountains in Kyodong island are within 100 meters in height.

[Table 3-4] Photos of Mountains



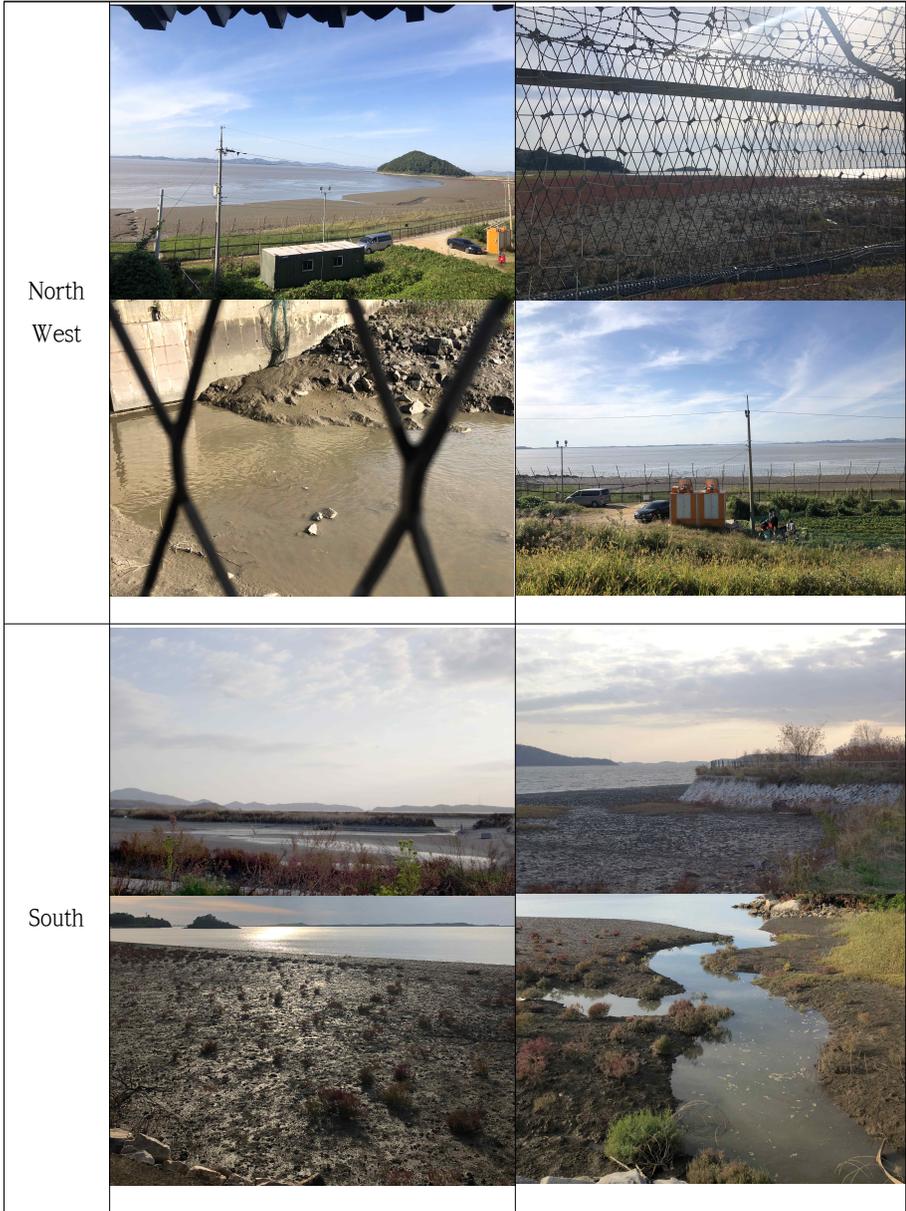
### ■ Coastal Area

The shoreline circumference of the Kyodong is 37.5km and the area is about 44 square kilometers. The fence line surrounding the coastline is 25.5km. As a result, most of the coastal areas are currently inaccessible.

The mud flat of Kyodong island were formed as fine sand and clay from Han, Imjin and Yesung River. In addition, the coastal erosion and sedimentary topography such as tideland, sand shore, salt marsh, etc. have been developed. These developments are based on the observation that a peat is

found in the lower part of Mt. Hwagae, However, the sanctuary has limited access and has been used as a farmland in the past. The mud flat with size of 200 million pyeong. Kyodong Island has the world' s top five mud flat.

[Table 3-5] Coastal Area





■ Port and Sea routes

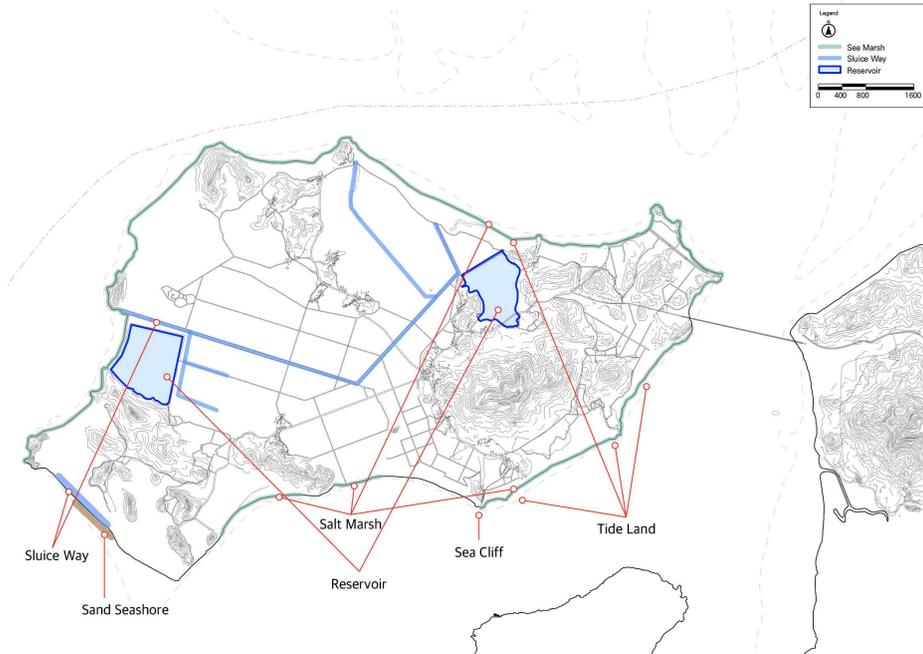
Until the construction of Kyodong Bridge in Kyodong Island, all the ports were not open to public except Wolsun port that they were used as military

operations. Therefore, the only way for civilians to enter Kyodong Island was to get on the ship from Ganghwa Island. In Kyodong Island, there are a lot of ports beside the Wolsun port such as Namsan, Hodu, Nakdu, Yuldu, Maltan, Juksan, and Binjang Port. In the between Yuldu and Nakdu port, there' s Bukjin Naru which was a main starting point to go to Hwanghae Island in the past. Also, the Juksan Port was a stopover place to enter the Han River. Before the opening of Kyodong Bridge, beside Ganghwa to Kyodong, there were a lot of other sea routes entering Kyodong Island. For example, during the Japanese colonial period, there was a route for passengers departing from Incheon Port and passing through the Bukjin Naru, and also one from the Mapo, Seoul called Hangang line, to Bukjin Naru. Today, all routes have been stopped, and Kyodong Island can only be accessed by the Kyodong Bridge.

[Table 3-6] Ports

<p>Juksan Po</p>		
<p>Namsan Port</p>		
<p>Wolsun Port</p>		

### 3.2.2 Kyodongdo Terrain and Marine Characteristics



[Figure 3-6] Terrain Map of Kyodong

In Kyodong island, artificial space including cultivated area occupies 71.27% of the island, and all are distributed around the coast.<sup>33)</sup> The main plains of Kyodong island are located at a point about 3m above sea level. Most of the geographical features are composed of schistos and the alluvial layers. There are no natural rivers on the scale of the fourth metamorphic region and the size of tidelands and alluvial deposits. Therefore, there are large reservoirs such as Nanji and Kogu reservoirs which are used for agriculture water according to the reclamation farmland, and coastal erosion and sedimentation topography such as tidal flat, salt marsh, sand coast are well developed.<sup>34)</sup>

33) 국립환경과학원 자연자원연구과 (2010). 『석모도·교동도·불음도의 자연환경』. 서울:국립환경과학원 p. 53

34) 같은 책. pp. 61

Kyodong is an island made by reclamation. Reclamation is a project that can be completed by removing enough salt from the cleared land and securing sufficient water for irrigation, which has been a problem for a long time due to lack of water. The western part of the island and the central coastal plains, which were developed as a tideland, were forced to rely on rainwater because they could not afford the nearby water source. In order to overcome these inadequate environments, repair facilities such as village-owned rice field, dam, fresh water(water without salt), reservoir or irrigation facilities were made.

When look closely on the marine characteristics around Kyodongdo, the Han river estuary, where Kyodongdo is located, was a land area that had been landed in the past and rose to sea around 8,000 years ago. However, number of sediments have flowed from the land through the Han River, the Imjin River, and the forecast river, and they are deposited on the seabed and the tidal flats are well developed on the coast. The depth of Kyodong Island is 21m near the Hodugot where the Kyodong Bridge was built, but most depths are less than 10m. In addition, most of the fresh water flowing from the Han and Ye Sung Streams flows into the Yellow Sea between the salt water sewers in the east of Ganghwa Island. Between Dongjin-naru, and Eungam on South, and the western part of Maltan port are 10m deep. Other than that, the water depth is 5m or less. At the northern end of Kyodongdo, the depth of the river is less than 3m and there are many tens of meters at low tide. Even tide and ebb tide is 561cm in average, and it shows even 780cm in spring tide, and even 340cm around neap tide. The waterway between Ganghwa-do and Hwangyang Cape is 1.80m/sec per second, which makes it difficult to anchor the ship. The velocity of the algae is also fast

between Kyodongdo and Seokmodo. The strongest velocity is 1.42m/sec at low tide. At 1.34m/sec, it is one of the most bird-flooded places on the coast of Incheon. The turbidity around Kyodongdo is high, so it is not visible below 20cm depth. This is because the concentration of suspended matters in the water is high and light transmission is poor.<sup>35)</sup>

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35) 권순기, 최종기, 『한강하류 및 하구역의 식물플랑크톤 생태연구-1. 환경요인과 일차생산력』. Yellow Sea Res 6, 1994

[Table 3-7] Different Terrain Photos

<p>Seacliff and Salt Marsh</p>		
<p>Tideland</p>		
<p>Sluice Way</p>		
<p>Reservoir</p>		

### ■ Salt Marsh

In the southern marsh wetlands, the accumulation of sediments continues to increase, followed by a decrease in seawater infiltration, resulting in the growth of dyed plants. The northern coastal marsh wetlands have limited military access and are favorable for reclamation and are also used as agricultural land.

### ■ Tideland

The composition of the tideland in the southern part of Kyodong Island is composed mostly of sand and gravel. It is a mixed tideland. The tidelands around Ganghwa Island are mostly formed by large amount of gravel supplied from the Han River and the Imjin River to the west coast.

### ■ Sluice Way

There are number of artificial channels and reservoir in Kyodongdo. Most of them are constructed as reservoir type artificial channels and mostly used for agricultural water purposes.

### ■ Sea Cliff

Most of sea cliffs are developed on the southern coast of Namsan port coast. This can be seen while crossing Kyodong Bridge and the scenery is beautiful. This is a landform that develops mainly in the exposed area of the front of the headland.

### ■ Reservoir

The reservoirs located in Kyodongdo are Nanji Reservoir and Kogu

Reservoir. There are also small reservoirs, but these two reservoirs are typical. Kogu Reservoir is located in Koku-ri and is a man-made reservoir constructed by piling dike on the shore. The reservoir is divided into north and southern reservoir. The southern reservoir has lotus planting. In addition, Hwagae Mountain and the coast are near the reservoir that the conditions of the surrounding habitat are well prepared. The Nanjung Reservoir is also a large-scale artificial reservoir, which is located right in front of Sujeong Mt.

### 3.2.3 Kyodongdo Vegetation

Most of the area of Kyodongdo is arable land. Other than that, there are open water areas, deciduous forests, coniferous forests, mixed forests, salt marshes, coastal sand dunes, open ponds, artificial areas and open waters. Coniferous forests and broadleaved forests are distributed in Hwagae, Sujeong and Yuldu Mountain. Most of the salt marshes are located along the northern coastline, and the coastal sand dunes are located about 1.5km wide in the southern Mt. It is located in the south of the Nanjing Reservoir, which is open to the public. Artificial areas are mostly distributed around mountains.

[Table 3-8] Existing Vegetation of Kyodongdo and Ratio by Legend Type I

Reference: 국립환경과학원 자연자원연구과 (2010). 『석모도·교동도·볼음도의 자연환경』. 서울:국립환경과학원 p.61

Type		Area(km <sup>2</sup> )	Ratio(%)	
Forest Vegetation	Broadleaf Forest	2.62	19.88	5.51
	Coniferous Forest	2.30		4.84
	Conifer Broadleaf mixed	6.47		13.61
Coast Vegetation	Coastal Dune	0.07	5.03	0.15
	Salt Marsh	2.20		4.63
Substitutional Vegetation	Open bare land	0.30	68.59	0.63
	Arable land	32.31		67.96
Man made land		1.27	2.68	
Open Water		3.69	7.76	
Total		47.54	100.00	

The plants in Kyodongdo are shown in the following table. The highest number of plant families in Kyodongdo were asteraceae by 10.4%, followed by 9.3% in rice, 5.2% in rose, and 4.1% in lily and soybean respectively.

[Table 3-9] Existing Vegetation of Kyodongdo and Ratio by Legend Type II

Reference: 최중기 외11명 (2015). 『인천섬 연구총서 1 교동도』. 민속원 p.199

Family Name	Number of Group	Ratio(%)	Family Name	Number of Group	Ratio(%)
Asteraceae	38	10.4	Cruciferae	11	3.0
Oryza Sativa	34	9.3	Cyperaceae	11	3.0
Rosa	19	5.2	Ranunculus	9	2.5
Lilium	15	4.1	Chenopodium	7	1.9
Glycine Max	15	4.1	Labiatae	7	1.9
Polygonaceae	12	3.3	Caryophyllaceae	6	1.6
Total	133		Total	51	

In addition, rare plants such as Sagittaria trifolia, Aristolochia Contorta Bunge and Iris could be found and special plants such as Forsythia, Syringa, Weigela Subsessilis, Populus Tomentiglandulosa, Salix Caprea were found within this island.<sup>36)</sup>

In addition, the 44 types of naturalized exotic plants accounted for 12.0%, and the types are shown in the table below.

[Table 3-10] Kyodongdo Foreign Plants

Reference: 최중기 외11명 (2015). 『인천섬 연구총서 1 교동도』. 민속원 p.200

Type	Name of Plants
Plant	Amaranthus Dubius, Erigeron, Amaranthus Blitum, Potentilla Paradoxa, Senecio, Solanum nIGRUM, Lepidium Sativum, Ambrosia Trifida, Oenothera Biennis, Fallopia Dumetora, Solanum Carolinense, Xanthium Strumarium, Ambrosia, Ipomoea, Euphorbia, Thlaspi Arvense, Bidens Frondosa, Panicum Dichotomiflorum, Symphyotrichum Pilosum, Phytolacca, Sonchus, Diodia, Erechitites Hieracifolia, Trifolium Repens, Taraxacum, Fragaria, Robinia Pseudoacacia, Euphorbia Maculata, Abutilon, Dactylis Glomerata, Lespedeza, Amorpha Fruticosa, Chenopodium Ficifolium, Carduus Crispus

36) Same Reference As Above. p.199

Other major cultivated plants were ginkgo, zelkova and ash trees. Folk plants include medicinal plants, folk vegetables, and other resource plants.

[Table 3-11] Photos of Vegetation



### 3.2.4 Kyodongdo Bird and Fish

#### ■ Birds

The coastal dune vegetation and the marine vegetation are distributed relatively widely in Kyodongdo that it provides a stable feeding place for birds. A large number of endangered species and natural monumental birds were also found in the tidal currents in Kyodongdo. The total number of birds were 22,425 and 49 species were found.<sup>37)</sup> There were 19 species of endangered birds including the Ardeidae(Egret) in summer, the big Bushes, the New Holly Tree, and the winter birds such as Anser Cygnoides, Bombus and Grus Grus. The largest number of endangered birds was found in the vicinity of the Nanjung Reservoir in the west, with about 151 to 1,400 birds, followed by Bongso-ri. The most frequently observed species were Anser Albifrons by 21,760, followed by 4,237 of Anas Poecilorhyncha, 2,806 of Anas Formosa, Streptopelia Orientalis, 938, 894 of Passeridae, and Anas Platyrhynchos by 816. In the case of Kyodongdo, the number of bird species arriving in summer are lower than winter. Kyodongdo is used as a stopping place for Anser Albifrons that the number of birds arriving in spring and fall is relatively same. The Anser Albifrons uses farmland and tidal-flats as a feeding ground, and it is the best place for them because the rice paddy is relatively bigger than other islands near. Also, after the harvest, it provides a great habitat for them and it can not be observed in Ganghwa island as many birds as Kyodongdo. It is not a usual thing to observe 20,000 Anserini in one place near the metropolitan area.

Kyodongdo is one of place where Anas Formosa visits. The species that come to Nanjung reservoir are more than 1,300 in the spring and autumn

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37) 최중기 외11명 (2015). 『인천섬 연구총서 1 교동도』. 민속원

and more in spring than autumn. Also, Kyodongdo is a place where winter migratory birds often appear. Specially, in Dongsanri hill, about 1,000 pair of Ardeidae breeds. The species found were Ardea alba, Ardea Intermedia, Egretta Garzetta, Bubulcus Ibis, and Ardeola Bacchus. Other than these species, there were Cuculus Canorus, Alcedo Atthis and many kinds of Picidae. Those kinds are Dendrocopos Leucotos, Picus Canus, Dendrocopos major were found.

[Table 3-12] Observed Endangered Birds by Year

Reference : 국립환경과학원, 『석모도, 교동도, 불음도의 자연환경』 자료, 2010

Subdivide	Species	Year		Natural Monument	Habitat Type
		2007	2009		
Endangered birds Level 1	Egretta eulrophotes		•	✓□	Summer
	Platalea Minor	•	•	✓□	Summer
	Number of Species(Subtotal)	1	2		
	Number of Species(Total)	2			
Endangered birds Level 2	Ixobrychus Eurhythmus		•		Summer
	Anser Cygnoides		•	✓	Winter
	Anser Fabalis	•	•		Winter
	Anas Formosa	•	•		Winter
	Pernis Ptilorhynchus	•	•		Passage
	Milvus Migrans	•			Winter
	Accipiter Gularis	•	•		Resident
	Accipiter Gentilis		•	✓	Winter
	Buteo Buteo	•	•		Winter
	Buteo Lagopus	•			Winter
	Buteo Hemilasius	•	•		Winter
	Falco Subbuteo		•		Summer
	Grus Monacha		•	✓	Winter
	Porzana Pusilla	•		✓	Summer
	Haematopus Ostralegus	•	•	✓	Resident
	Numenius Madagascariensis	•	•		Passage
Bubo Bubo	•	•	✓	Resident	
Number of Species(Subtotal)	12	14			

[Table 3-13] Photos of Birds



## ■ Fish

The estuaries around Kyodong Island are the base stations where fresh water and seawater meet, and the environmental change is great. So, the nutrients and sediments flowing from the land form a unique ecological environment with high bio-productivity. In the estuary, marine species that live in the sea and freshwater species that live in the river appear in the transition zone connecting the ocean and the freshwater aquatic ecosystem. A variety of species such as migratory species appearing in rivers and

oceans have. This area is highly ecologically valuable due to the spawning grounds of marine life in various habitat environments and the estuaries used as nursery harassment sites for young creatures.. The habitat of endangered wild animals is largely observed in the tidal areas of the coastal area, in the agricultural areas of the flatlands, around the artificial reservoirs, and in the mountainous areas. In addition, the estuarine waters around Kyodongdo have salinity that is not weaved than the sea, high turbidity, and a lot of organic matter. Due to these environmental characteristics, the survival rate of young individuals is high, and many kinds of fish and shrimp spawn around Ganghwa Island and Kyodongdo.

A total of 57 kinds of marine organisms were collected from the tidal flats between the Kyodong Island and Ganghwa Island. There were 57 kinds of marine life, 34 kinds of Actinopterygii, 20 kinds of Crustacea, two kinds of Cephalopoda, and one kind of Medusozoa.

The main fishes appearing in May to August were *Engraulis Japonicus*, Hemiramphidae, *Konosirus Punctatus*, *Sardinella Zunasi*. Quantitatively, *Dorosoma Cepedianum* most in June to August,

The most found marine organisms in Kyodong island are shrimp. Shrimp catching around Ganghwa Island is the nation's largest, that Chungcheong-do vessels also come to Ganghwa Island to catch shrimp. Twenty - five species of shrimp were collected from the southern part of the lake with 19 species in spring, 16 species in summer, 22 species in autumn and 15 species in winter. Among them, *Acetes Chiensis* were most abundant and also *Leptochela Gracilis*. Followed by *Latreutes planirostris*, which account for more than two-thirds of the total shrimp catch.<sup>38)</sup>

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38) 박영철. 『강화도 연안 새우류 군집에 대한 생태학적 연구』. 인하대학교 이학석사논문, 1994.

[Table 3-14] Type of Appearance of Marine Life Monthly

Month	Subdivide	Species
2	Fish	Periophthalmus Modestus
5	Fish	Acanthogobius Hasta, Mugil Cephalus, Engraulis Japonicus, Cyprinus Carpio
	Crustacean	Palaemon Gravieri, Exopalaemon Carinicauda, Helice Tridens
5-8	Fish	Engraulis Japonicus, Scomber Scombrus, Konosirus Punctatus, Sardinella Zunasi
6	Fish	Collichthys Lucidus, Johnius Grypotus, Mugil Cephalus, Sciaenidae, Coilia Mystus
	Crustacean	Palaemon Gravieri, Paralithodes Camtschaticus
6-8	Maurolucus muelleri	Konosirus Punctatus, Engraulis Japonicus, Argyrosomus Argentatus, Pholis Nebulosa, Sardinella Albella. Platycephalus Indicus, Cynoglossus Robustus, Cynoglossus Joyneri, Coilia Mystus
9	Fish	Synechogobius Hasta, Collichthys Lucidus, Cynoglossus Joyneri, Takifugu Obscurus
10	Fish	Collichthys Lucidus, Mugil Cephalus, Coilia mystus, Javelin Goby, Coilia mystus
	Crustacean	Paralithodes Camtschaticus, Exopalaemon Carinicauda
11	Fish 17 Species / Crustacean 12 Species	
12	Fish 8Species, Crustacean 7 Species	

Since the Kyodongdo tidal flat is a civilian controlled area, the investigation is still insufficient. The tidal flats that can be accessed by civilians are Namsan Po tidal flats, but the area is poor in living things compared to other tidal flats where Crassostrea Gigas, Octopus Minor, Meretrix Lusoria, Limulus Polyphemus, Parasesarma Erythroductyla, often catches. Namsan Po tidal flats have a reed field, and crab species such as Ilyoplax Pingi, Macrophthalmus Japonicus, Helice Tridens and more appear. In addition to the tidal flats, the fishery marginal line was established at the Kyodong fishing ground in 1955, and it can only be done at the Kyodong fishing ground and the Changhuri fishery between Kyodongdo and Seokmodo. However, in the past, it was even introduced to the Kyodong-palkyung(교동

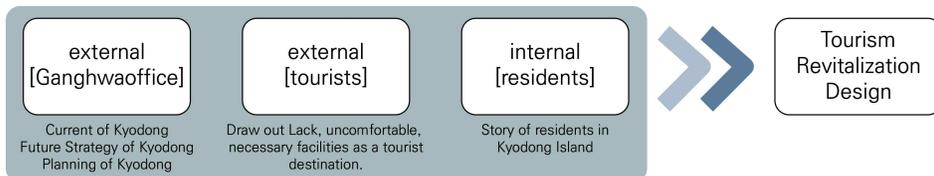
팔경) as northwestern fish light which means the beauty of the view of ships catching shrimp at night. The shrimp catching fishery was very active in past in Kyodongdo. Also, the food made by drying the eggs of the Xiphias Gladus around Kyodong was known as a important donation to the palace(진상, 進上). However, due to the fishery limit, the fishery of Kyodong rapidly declined and became a small unit. However, the civilian control line opens to the residents when its Korean thanks giving, Chuseok, to allow the villagers to collect shellfish. Aquaculture is made on the coast. Mugil Cephalus abd Lateolabrax Japonicus are cultivated at a total of 55.6 hectares in six areas including Sangryongri, Dongsanri, Daeyongri, and Yangjuri. Any other collection must be approved by the military unit.

[Table 3-15] Photos of People Fishing



### 3.3 Need Analysis

Needs analysis was conducted through interviews and awareness surveys of diverse stakeholders involved in Kyodong Island with field study. The diverse stakeholders consist internal and external. The internal is Kyodong island residents and external, the visitors of Kyodongdo, as well as members of the Ganghwa gun Office responsible for Kyodong-related projects. In interviews with the personnel of Ganghwa-gun Office, the point was to understand the present and future strategies of Kyodongdo so that the design direction could be set. The residents' awareness survey and interviews were conducted to carry out the stories in Kyodongdo and this will be reflected in the design as a program. The survey of tourist and interviews will be applied as a physical design. The derive of all stakeholders will be reflected in the design.



[Figure 3-8] Process of Need Analysis

#### 3.3.1 Stakeholder Interview and Awareness Survey

Interviews and awareness surveys were conducted with a total of 93 internal and external stakeholders as shown in [Table 3-16] below. Among the stakeholders, those who belonged to the internal organization mainly consisted of residents who were greatly involved in the activation of tourism in Kyodong-do. Interviews were conducted at Kyodongdo and interviews were held on the field. External stakeholders, which is tourists, were held at the tourist attractions, such as the Jaebijip, the Daeryong Market, and the Kyodong Hyanggyo. The Internet questionnaire was conducted for tourists

who left online articles on Kyodong Island. (refer supplement).

[Table 3-16] Participants

Participants		
Internal	External	
	Tourists	Ganghwa gun office
<ul style="list-style-type: none"> <li>• [우리누리평화운동] UriNuri Peace Campaign</li> <li>• Gyodong Myeon Office (3 People)</li> <li>• Gyodong Hyanggyo (1 person)</li> <li>• Daeryong Market (5 people)</li> <li>• Farmers (4 people)</li> </ul>	<ul style="list-style-type: none"> <li>◇ Field Awareness Survey</li> <li>• (23 People)</li> <li>◇ Internet Survey</li> <li>• (50 People)</li> </ul>	<ul style="list-style-type: none"> <li>• Planning and Inspection (2people)</li> <li>• Construction (2people)</li> <li>• Urban Developer (1person)</li> <li>• Forest and Park (1person)</li> </ul>
Total : 14 People	Total : 73 People	Total : 6 People

Resident interviews and surveys were mostly over 40 years old. Through UriNuri Peace Campaign interview, which held about three times, were able to hear the stories of the people in Kyodong Island. Through Kyodong Hyanggyo principal, was able to hear about the history and strength of Kyodongdo. At the Kyodong-myeon office, the interviews were mostly about the complaints of the residents. Five owners at Kyodong market participated with the interview. Those owners interview were about issues at sightseeing spots. Lastly, from farmers, the interviews were about the life styles at Kyodong Island. In the case of external stakeholders, the interview with the soldiers were not able due to limitations. Tourists interview and survey were held in tourist and fishing spots and also on internet. Through on-site and on-line survey were able to know realistic problems about the tourism in Kyodong Island. Also, the lacking facilities or advantages from the perspective of tourists.

[Table 3-17] Internal Stakeholders Interview

Stakeholders		Interview Analysis
R e s i d e n t s	UriNuri Peace Campaign	<ul style="list-style-type: none"> <li>• Pride of Kyodong is very low. Their wound on losing their hometown and from war could not heal. Peace should come to their hearts. The need for heal them is compulsory. Because of this no one speaks about their stories. The history no more exists here. It is very important to keep history continues. Also, this should be the main contents for the tourism.</li> <li>• A lot of group of students visit but no place to educate</li> </ul>
	Daeryong market	<ul style="list-style-type: none"> <li>• The cost will be enormously expensive to get rid of the iron wire around the island. I hope that governments use that money to make more facilities that can help actual resident' s life or economically beneficial.</li> <li>• It' s a very good thing to keep an old market. However for us who life and work here... you know that slate thing is carcinogenic. Very bad for our health.</li> <li>• There are no young people here because of that, the development is very slow. We need facilities that young people can come.</li> <li>• The bridge helped us a lot to grow. But the tourists come and go very quickly. There used to be a lot of tourists staying up night, but now they just leave when its dark.</li> </ul>
	Kyodong Myeon Office	<ul style="list-style-type: none"> <li>• There are people who want to get rid of iron wire on the other hand, some are not.</li> <li>• It is a military operation area. Everything should be approved even if we want to build a house</li> </ul>
	Kyodong Hyanggyo	<ul style="list-style-type: none"> <li>• Rice here is very delicious.</li> <li>• Kyodong Island is a world top five mud flats</li> <li>• Kyodong has a clean water and nature</li> <li>• When the bridge was opened, there is no point in mentioning the young people, but even elementary school kids began to go to school to gangwha. Everyone is starting to leave the island.</li> </ul>

Stakeholders		Interview Analysis
Residents	Farmers	<ul style="list-style-type: none"> <li>• We need various job to live. Farming it self can't afford living that many people here live with more than two jobs.</li> <li>• There is no place to do cultural things. Even if to do exercise, we have to go to Ganghwa island.</li> <li>• Medical facilities are needed</li> </ul>

### ■ On-Site Tourists Interview Analysis

23 on-site tourists have participated in interview and survey. About 90% of them were over 40 years old. On weekdays, the tourists visit with husband and wife whereas on the weekend, most of them visit with their family, club or friends. 10% were 20~30 years old and mostly visited with lovers or friends. Approximately 80% of visitors came from Seoul, Gyeonggi, and Incheon. Most of the visitors visited during the weekend, but less than 10% of them stayed through night. The reason for this was because there are nothing to do. Nonetheless, about 90% of respondents were willing to visit again. Through the survey of impressions of Kyodong Island that checking [most negative] ~5[most positive], most of tourists on weekdays scores 1~3 which is negative. The reason for the score is that they did not know that the market opens only on weekends. Also, understanding of the history was very low that they did not understand island properly.

[Table 3-18] External Interview Analysis

Stakeholders	Interview Analysis
On-site Tourist	<ul style="list-style-type: none"> <li>• I took taxi. There is nothing to do here. I did not know that the market opens only on weekends.(Applicate to all visitors on weekdays)</li> <li>• There is no place to stay</li> <li>• There is no restaurant that we need to go out for lunch or dinner</li> <li>• It is important to preserve but seems necessary to renovate a little. Appear dangerous for me</li> </ul>

## ■ On-line Tourists Interview Analysis

There were 48 responses from on-line survey. 37.5% visited from Seoul, 18.8% from South and North Gyeonggi, and Incheon, 39.6% were office workers, followed by students(18.8%), self-employed(14.6%), civil servants (12.5%), housewives(6.3%), and extra. The majority of the age group was over 50 years old with 43.7% followed by 20 ~ 30 years old, 18.7% between 30 ~ 40 years old and 16.7% between 40 ~ 50 years old. Visits were mostly on weekends and holidays, which accounted for 54.8%. The purpose of the visit was 79.2% for tourism purposes, climbing 10.4%, fishing 6.4% and 8.4% visiting historical sites and ecology. Other than this, there were visits to relatives, purpose of business, and coverage. Most of the purpost of sightseeing is to tour border area by 37.5%, 33.3% for healing and 31.3% for natural scenery. The highest percentage of those who visited Kyodongdo were family(43.8%), friends(22.9%), alone(20.8%) and lovers and clubs(6.3%). The proportion of tourists who visit alone is high in Kyodongdo. The location of the visit to the Kyodongdo Tourist Area was made possible by duplicate check, and most visitors visited Daeryong Market and Jaebi Jip for their first tourism spot. Followed by Koku reservoir(39.6%), Manghyng dae (31.3%), Yunsangun exile(33.3%), Hwagae temple(20.8%) and Hwagae mountain by 18.8%. In addition, Nanjung Reservoir, Eulji Tiger Brigade, Kyodong Eupseong, Kyodong Hyanggyo, ports, and so on. In terms of the way to find Kyodong Island, 25% were while surfing internet, 18.8% were ‘while looking up for tourism spots of border area’ , 14.6% were by recommendation from relatives, 12.5% by while watching TV shows, and 10.4% were living near by. The number of people who stayed in Kyodong Island was 6.3%, and the reason for not staying in the Island is that there is nothing to do or the tour was

only planned for one-day trip or staying in Ganghwa Island.

[Table 3-19] External Recognition Survey Analysis [★ Mentioned more than 2 times]

<b>Survey Analysis</b>					
Improvements	<ul style="list-style-type: none"> <li>• Storytelling, networking are needed</li> <li>★ Accomodation/Transportation/Resting/Cultural and Amenities Facilities are needed</li> <li>• Lack of tourism infrasturcture</li> <li>• Roads are narrow</li> <li>• lack of sightseeing</li> <li>• Diverse of experience</li> <li>★ Develop local food/improve infrastructure of restaurants</li> <li>• use of Jaebi jip is very low</li> <li>★ Lack of map information / guidance required / navigation not working</li> <li>★ Road signs</li> <li>• Kyodong Island Goods</li> <li>• Road Maintenance</li> </ul>				
Advantages and Disadvantages	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; vertical-align: middle;">Advantages</td> <td> <ul style="list-style-type: none"> <li>• Can visit without staying</li> <li>★ Natural Environment</li> <li>• Border tour available / North Korea Observation</li> <li>• Roofless museum / undamaged place</li> </ul> </td> </tr> <tr> <td style="width: 20%; vertical-align: middle;">Disadvantages</td> <td> <ul style="list-style-type: none"> <li>★ Storytelling, infrastructure or system construction</li> <li>★ Nothing to do</li> <li>• Insufficient traffic facilities / road pavement</li> <li>★ No accommodation available</li> <li>• have enough historical resources but seems island doesn't know how to use is as a tourism</li> </ul> </td> </tr> </table>	Advantages	<ul style="list-style-type: none"> <li>• Can visit without staying</li> <li>★ Natural Environment</li> <li>• Border tour available / North Korea Observation</li> <li>• Roofless museum / undamaged place</li> </ul>	Disadvantages	<ul style="list-style-type: none"> <li>★ Storytelling, infrastructure or system construction</li> <li>★ Nothing to do</li> <li>• Insufficient traffic facilities / road pavement</li> <li>★ No accommodation available</li> <li>• have enough historical resources but seems island doesn't know how to use is as a tourism</li> </ul>
	Advantages	<ul style="list-style-type: none"> <li>• Can visit without staying</li> <li>★ Natural Environment</li> <li>• Border tour available / North Korea Observation</li> <li>• Roofless museum / undamaged place</li> </ul>			
Disadvantages	<ul style="list-style-type: none"> <li>★ Storytelling, infrastructure or system construction</li> <li>★ Nothing to do</li> <li>• Insufficient traffic facilities / road pavement</li> <li>★ No accommodation available</li> <li>• have enough historical resources but seems island doesn't know how to use is as a tourism</li> </ul>				
Stories to share	<ul style="list-style-type: none"> <li>• limit visitor</li> <li>• must preserve nature / beautiful and tranquil island</li> <li>• no markets were opened. / lack of information about the island</li> <li>• I wish I can stay up night / want to stay 1 night and 2 days</li> <li>• wish the market could expand the space at the same time maintaining and repare the past traces</li> <li>• Hope that it changes less and become a place that many people are looking for</li> </ul>				

[Table 3-20] External Stakeholders Interview Analysis

Stake holders	Interview Analysis
Ganghwa gun Office	<ul style="list-style-type: none"> <li>• Because it is in the military demarcation line, if a person has a land in Kyodong, even if it is one's land they can't do anything without permission of the military unit. Its their land but at the same it is not. People complain most about this problem.</li> <li>• We are trying to revoke or relax the restrictions on military installations.</li> <li>• When the harvest is over in the village, there will be a mullet festival and a raw pork meat [yukhoe 육회] festival around November. The fact that you can eat pork meat in raw can be understood as a clean area. About lunch, the villagers gather at the town hall and enjoy the food together.</li> </ul>

### 3.4 Comprehensive Analysis

Analysis of the site was conducted through wide area, local resources and needs, and the following implications and potentials were identified through analysis. First, the analysis of ecological environment through local resources. The regional resource environment has been analyzed topography. marine characteristics, vegetation, bird and fish. The topographic and marine characteristics were as follows: marsh wetlands, tidelands, artificial waterways, oceanic reservoirs, reservoirs and mountains. The vegetation area was formed with forests, coasts and vegetation areas, and within those areas, the plants classified as rare plants, naturalized alien plants, cultural plants, Respectively. In case of analysis of Kyodongdo birds, endangered bird species were mainly analyzed and fish analysis was based on marine biology, which is often found.

First, the regional resources analysis. Kyodongdo has the advantage of being able to see various terrain in a short distance. However, it is difficult to observe at a glance due to lack of connectivity between terrains. The accessibility is also poor that it makes unattractive destination for tourists. Therefore, it is considered necessary to maintain coastal roads for pedestrians and drivers. Currently, coastal areas must be designed for the future that the coastal is not open to public due to the truce line.

In this study, it was considered that a place where the view of Kyodongdo as a whole is needed that Goyangi mountain was selected. The reason for the need for a space for viewing is that there is place to see North Korea but not for where people are standing in case of most of the border area. Most of the residents of the border area, especially the residents of Kyodongdo, feel that the space and themselves are abandoned or

unattractive. Because of this, it is necessary to help them raise their pride of the place. The Goyangi mountain is surrounded by a wide plains, that it is possible to see the whole without disturbing the view. There is also an ocean in the west, and a view of the entire Kyodong Province in the east and view of both South and North Korea. Currently, the three main mountains are currently in various projects and also being introduced as a lot of sightseeing courses. Also, in the case of Bonghwang, Nam, and Ma Mountains are easy to get disturbed by the surrounding mountains.

As a result of the analysis of birds, and endangered bird observation station was deemed necessary. In addition, migratory birds and various ducks were found around reservoir that the observatory in those places were essential. There are a lot of Passeridae nests were made on the roof of the Daeryong market, whereas most of the nests are now empty due to the tourists. Therefore, the observatory should be designed that do not invade the ecosystem but at the same time where tourists can closely monitor them.

Also Kyodongdo is a very special place that there are variety of biosphere such as a marine life in sea, river, estuary, and one which come and go through river and sea.

The last analysis of local resources is the islands around Kyodongdo. There is no island to the east of the border area, and there is a possibility that the border islands in the west can be recognized as a very special space. Therefore, it is necessary to construct a network of border area islands.

In case of need analysis, the economy is the most problem. Most of the residents were engaged in agriculture, but having one job is impossible to live.

# Chapter4. Kyodongdo Eco Tourism Plan

## 4.1 Planning Direction and Strategic Process

A definition of an attractive tourist destination can be a place where there's unique or tall buildings are placed or a splendid city of full famous architects bulidings. However, on the other hand it can be defined as a quiet, distinctive and well-preserved space. Above all, the best toursim spot that people think of will be a place where their fantasies or myth exist. This means that the place contains a completely different feeling from their house, town, village, and city in which they are living in, and it is a place where they can see completely different view and scenery. Therefore, the study intends to establish a plan to revitalize eco-tourism in Kyodong, which is an island, a border area, a sightseeing place, a rich natural scenery viewing point, and has a landscape that has a wide plain which not disturb by a tall buildings like in any other city in South Korea.

### 4.1.1 Planning Direction



[Figure 4-1] Planning Direction

Ecotourism should preserve, sustain, and learn value of nature through education, while at the same time help to understand local culture. It can also provide benefits to the community and all of them must coexist. The basic direction for sustainable ecotourism in Kyodongdo were set based on these rules.

① Raise ecological value of natural resources (Conservation+Sustainability)

The natural resources of Kyodongdo are worth preserving due to it had never been developed. That there are various vegetations and endangered species of birds were found. There are also many fishes in the area where rivers, oceans and estuaries of the Han river are overlapped. However, current ongoing plans of tourism revitalization in Kyodongdo are promoting tourism by recycling the existing tourism resources rather than looking for new things. Therefore, derive ecological value of Kyodongdo is the first direction for the plan. Also, at the same time deriving the ecological value, the way to find sustainable tourism to preserve should be planned.

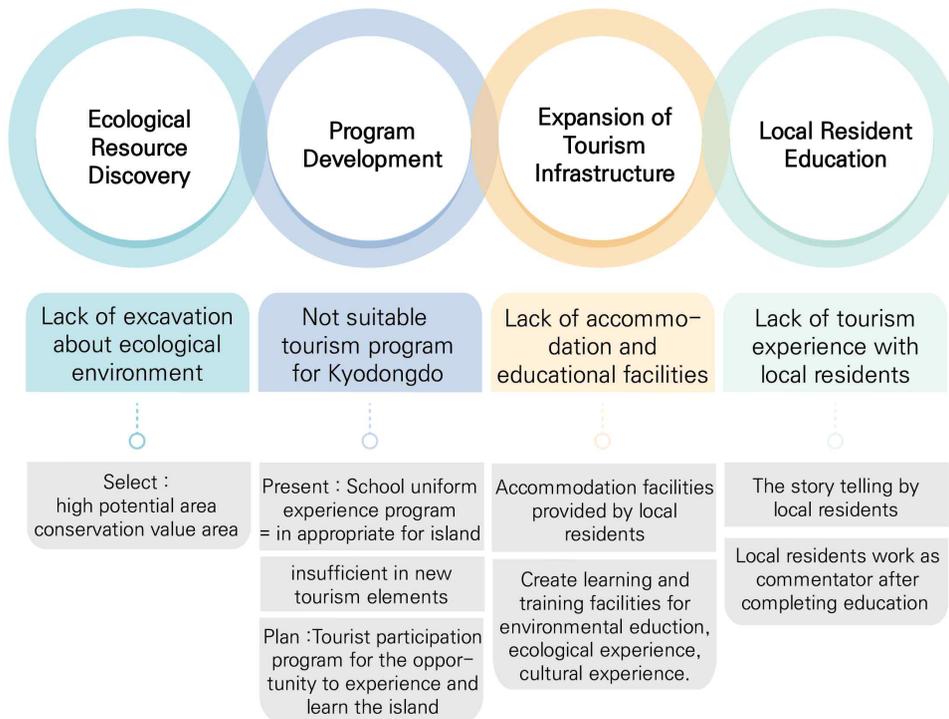
② Tourism that people can learn and experience (Education+Coexistence)

One of the important concepts of sustainable tourism is education. Through education, people are able to learn about the importance of ecology, and find the true value of it. Education of ecotourism includes not only ecology but also local culture. Through this education, tourists will be able to coexist with local culture and society and learn the importance of nature.

③ Return the profit from tourism to local residents (Local Community)

A lot of rural areas are making efforts to revitalize tourism. However, it only make residents to leave due to the gentrification. Eventually it makes empty tourism which means a place with no identity. Conversely, eco-tourism, or sustainable tourism, is a system that can provide economic profit to local residents by using local restaurants or accommodations. This will improve the quality of life of local residents and improve the tourist attractions.

### 4.1.2 Strategic Process



[Figure 4-2] Strategic Process

One of the biggest advantages of the site is the well-preserved natural environment and close to the city center. However, currently, these natural environment are not yet derived that it is necessary to draw and discover for new tourism point. After draw the natural environments, the development of tourism should be done with expert consulting for residents' council, and publicity about ecotourism should be promoted. Program should operate with the local residents who have gone through the educational process. All the facilities and programs should managed with residents and this will create jobs, increase resident income, prevent from aging and decline of the island.

## 4.2 Planning Concept

### 4.2.1 Planning Direction

The plan is to activate Kyodongdo as ecotourism spot by utilizing the natural environment resources of the area. This means that the design should never harm the nature or over-designing.

Therefore, the plan should use the unique factors of natural environment in Kyodongdo to activate tourism at the same time, the local community should be promoted to enable sustainable tourism infrastructure. Also, the basic direction of the plan should focus on respect and coexist.

The direction of tourism planning in Kyodongdo is as follows.

#### ■ Island that coexist with nature (Peace)

An island coexisting with nature means the plan should permeate in nature, not transformation of a space. Therefore, the development is minimized, but the tourism infrastructure is expanded so that the nature and culture of Kyodong Island are fully accessible.

As it was mentioned above, in the past, Kyodongdo was used as a place for connecting the regions. However, after the Korean War, the island became place where no one care about. After the tourism development, Kyodongdo is no longer an isolated island, but a place where coexist, and it becomes a space for future peace.

#### ■ Island that can heal with nature (view)

The residents have very low pride in Kyodongdo. No one cared about their sadness from losing their hometown and family. It is possible to make them

go back, whereas we should help them to cure. The plan uses the nature sources as a tool for cure them. They had always been looking at their hometown in North Korea, but didn't look into their second hometown which is Kyodongdo.

■ Island that can get close to nature (Learn)

Recent climate change became an issue that the environment interest has increased. This affected in tourism as well. In the past, the trend for tourism was visiting large city whereas these days, increasing interest in sightseeing in a small city became a new trend of tourism. People got interest in experiencing the culture directly or getting closer to the area. This type of tourism helps to preserve the region due to tourists learn the value of the place.

1. Island that Coexist with Nature (Peace)



2. Island that can heal with Nature (View)



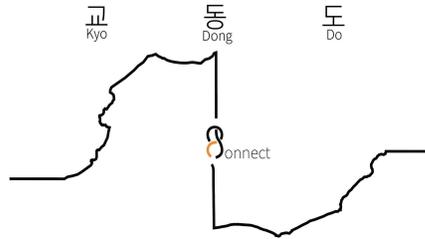
3. Island that can get close to nature (Learn)



[Figure 4-3] Planning Direction

## 4.2.2 Design Concept and Proess

### ■ Design Concept : INFINITE or LINK (무한, 한계가 없는)



[Figure 4-4] Design Concept

‘Infinite or Link’ is the design concept for Basic Plan of Kyodongdo for the transition to sustainable ecotourism. The logo is an image that expresses connection that means infinite and symbiosis in the sense that it is sustainable. The concept was derived from the above basic directions and utilized the following table. The table is an image of each plane, coastal and mountain as it comes to mind.

[Table 4-1] Design Concept Process

Plane / Local Resident	Coastal / Tourist	Mountain / Nature
Production	utilization	Reproduction
Coexist	Close	Cure
	preservation	
Dynamic / kinetic	Active / enthusiastic	still / static
Fast	Slow	Stay

The wide plain was set as a free space. In other words, the plain is where create new things, dynamic and fast, and coexist. This assumed that it would serve as a place for development. On the contrary, coastal area is a place where utilize, get close, preserve and a place where its active but slow. Lastly, the mountain is a place for reproduction, heal, and a place to stay.

The revitalization plan is not only for tourists but also for local residents and the nature. They all should coexist, cure and get close to each other.

### 4.2.3 Natural Resources Utilization Plan

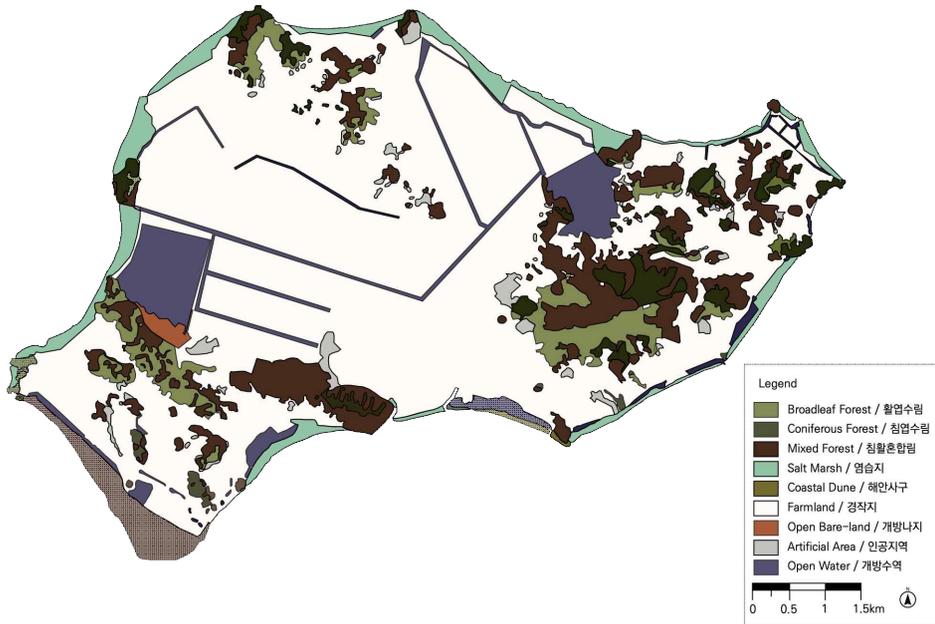
The plan is to utilize existing natural environments in the site and create a major tourist destination. It also introduces major facilities in the tourist area so that it can function as a sightseeing spot. The natural environment includes natural environmental resources and historical and cultural resources. However, Kyodongdo is a bordered area that civilian access is limited that it is not possible to research deeply in the environment. Due to this reason, the study could not include wide range of environment sources but has collected data from the previous study and self experience.

[Table 4-2] Natural Resources

Type		Contents
Natural Environment Resource	Terrain	Unique terrain and marine characteristics not found in the city center
	Vegetation	Different vegetations depending on different terrains -> Provides various attractions for tourists
	Bird	Frequent appearance of endangered species, natural monument birds and migratory birds -> Use as a bird observatory place
	Fish	Frequent appearance of unique species of marine life due to various habitat environment such as estuaries, freshwater and other -> Use as a fish observatory

The criterion of selection of natural environment was selected as the space where appearance frequency is high. Tourism through the natural environment has an advantages of being able to feel the four seasons. Kyodongdo is a place where rice farming is famous that it provides different colors in spring, summer, autumn and winter.

The maps were redesigned with personal experience of researcher based



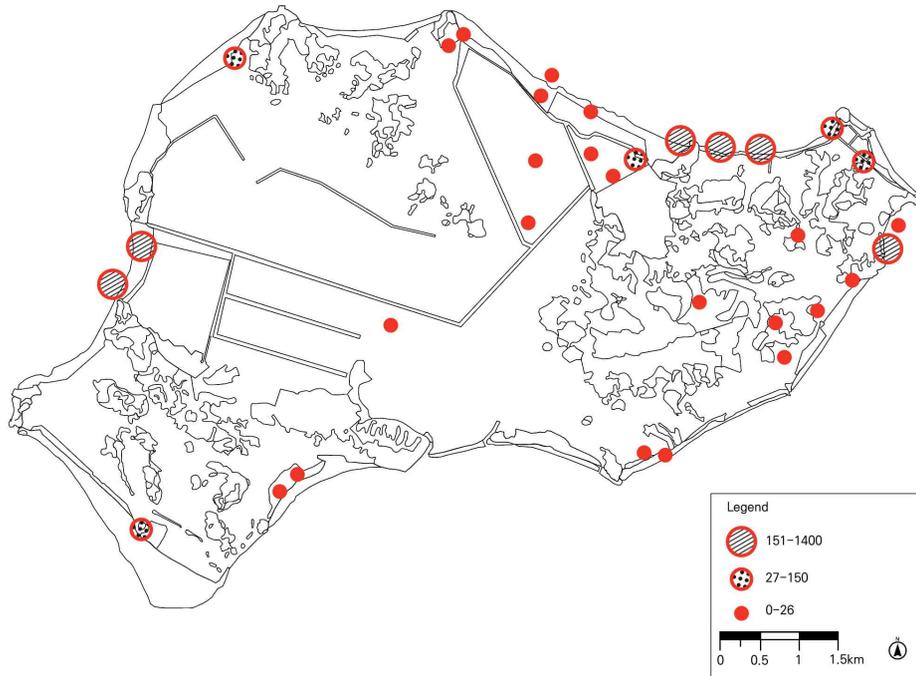
[Figure 4-5] Existing Vegetation in Kyodongdo

Resource : 국립환경과학원 자연자원연구과 (2010). 『석모도·교동도·불음도의 자연환경』. 서울:국립환경과학원 p.60

on the book of the ‘Natural Environment of Seokmodo, Kyodongdo and Bolumdo ‘.

[Figure 4-5] and [Figure 4-6] show the existing vegetation and the number of endangered birds distribution map of kyodongdo. The final section tourism spot are based on these drawings.

First, the existing vegetation. Through the image, it clearly shows that most of the places are farmlands and rest are mountains. The large proportion of the forest is the mixed and followed by broadleaf forest. The diversity of terrain is mostly along the coastline.

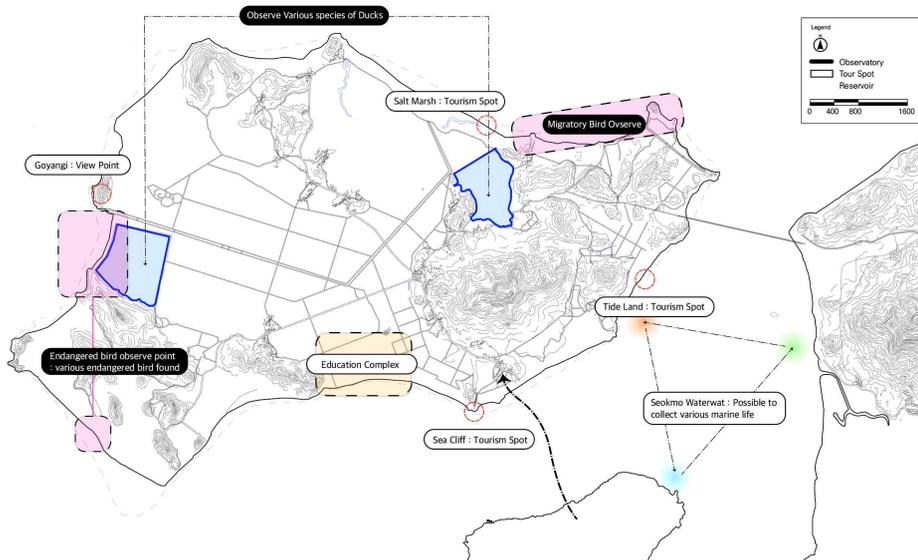


[Figure 4-6] Redesigned of Endangered and Migratory Bird

Resource : 국립환경과학원 자연자원연구과 (2010). 『석모도·교동도·볼음도의 자연환경』. 서울:국립환경과학원 p.82

Ducks and migratory birds were often found in Bongsori and Nanjeongri that it has possibility to use it as a place to observe birds. Also, from the bottom of the Kyodong Bridge, via Hodu port to Nakdu port, a lot of migratory birds can be found. Ducks were mostly found in reservoir or open waters. But they are all sensitive to sound that it is very difficult to reach them that shows the observatory plan is necessary.

Bongsori, Goguri, Nanjeongri, Sangyongri and Eupnaeri all has different coastal terrains. These areas seems worth preserving and at the same time a great place for tourism. However, the coastal road are yet constructed that it is very uncomfortable to drive through the coastal line. They are all disconnected or unable to enter due to the military facilities. Therefore, the need for coastal roads for both cars and humans is considered necessary.



[Figure 4-7] Space Concept

Ecotourism spot were selected based on these criteria. natural scenic spots in the area. The selected areas are seven regions including Bongsori, Nanjeongri, Goguri, Sangyongri and Eupnaeri.

## 4.3 Program Concept

### ■ Program Direction

The program design for sustainable ecotourism in Kyodongdo was based on the needs research from the survey and interviews of tourists and residents, and the case study was intended to plan a professional program.

The program is divided into software and hardware. Software is a program based. It is more about experiencing and education. Hardware is constructing a place for experience software.

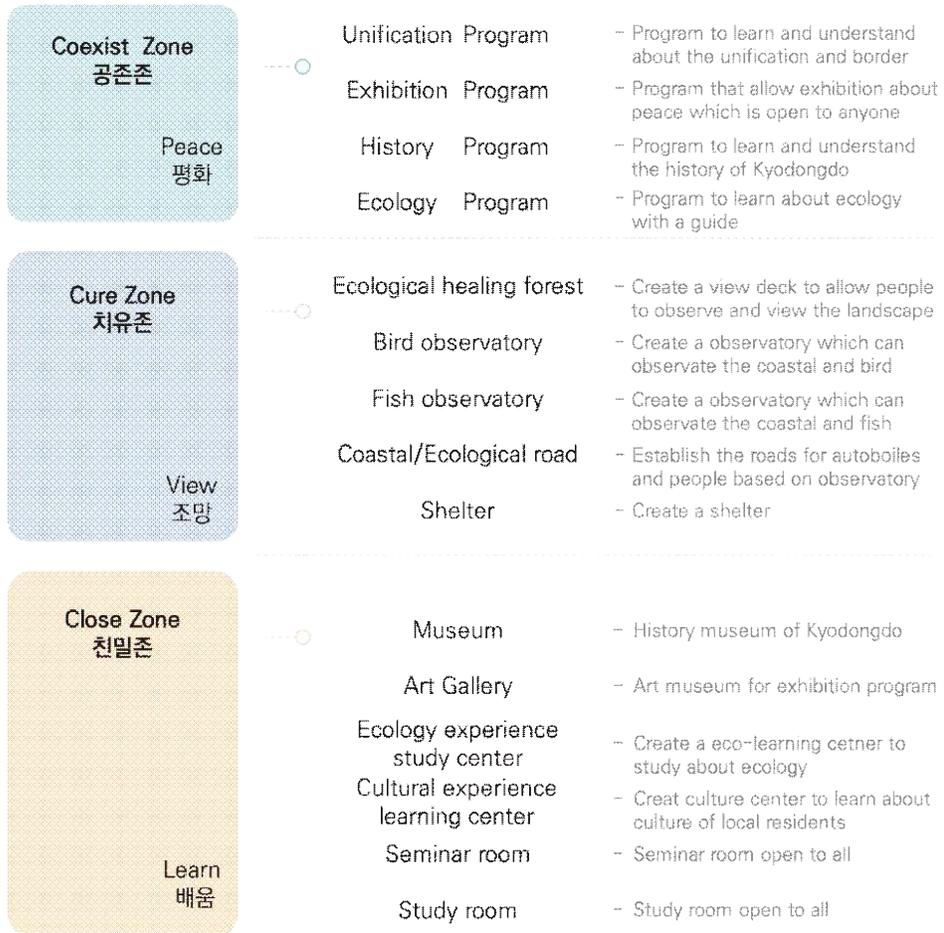


[Figure 4-8] Program Direction

Software include education, view, experience, and participation programs. Through education program, people are able to learn about history, peace, nature and ecology of Kyodongdo. The view is an observation program for observing nature, birds and fish. Experience makes possible to learn about the culture of the region in one day. The participating is a program that does not only ends up with one day experience but daily.

Hardware program represents a physical space. It includes observation decks, ecological roads, coastal roads and educational buildings. The observation deck can observe birds and fishes, and ecological and coastal roads will work as a big role in tourism spot. At the educational complex, there will be various programs will be served such as seminars, and studies.

## ■ Specific zoning



[Figure 4-9] Specific Zoning

The detailed programs divided into coexistence, cure, and close (by). The zone includes various programs in the space beyond not only physical space. Coexistence is a program based zone which include peace, exhibition and history programs. Cure zone and close zone are physical environment which includes observation deck, forest, road, shelter, art gallery, museums, learning center, seminar and study room are installed.

## 4.4 Space Concept

### ■ Spatial Planning Strategy



[Figure 4-10] Space Planning Strategy

### ■ Create a network between the border islands : DMZ island belt



[Figure 4-11] Selected DMZ Island Belt

The included island in this DMZ island belts are on the northernmost in Incheon region. It consists of eight islands which composed with Kyodongdo, Bolunddo, Uedo, Daeyeonpyungdo, Soyeonpyungdo, Daechungdo, Sochungdo.

The DMZ island belt enables a diverse and rich tourism experience by linking the spaces that have the different potential of tourism attractions. In addition, the plan should identify the characteristics of each island and propose the formation of the belt as the islands are all one not separate.

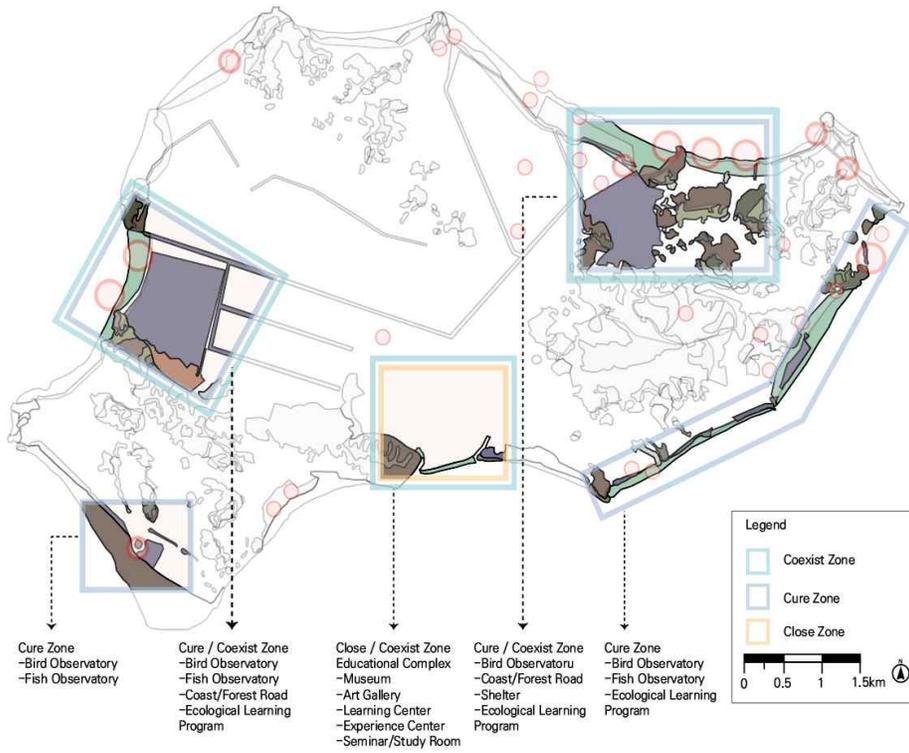
As mentioned above, this proposal suggests that eight islands should work as one and base point for the base point for DMZ island tourism. The plan is to diversify tourism in the border area concentrated on the motherland and it will enable diverse experience of border region by creating DMZ island belt with ecotourism.

The plan will create the effect of economic development in those eight islands by connecting the networks.

#### ■ Kyodong Island Space Concept

These are the final selected regions. The programs are all added.

The deep blue box is coexist zone which learns about unification, history of Kyodongdo, ecology and nature. The light blue box is cure zone which contains observatory of fish and birds and coastal roads. The orange box is a close zone which composes art gallery, museum, learning center, study and seminar rooms.

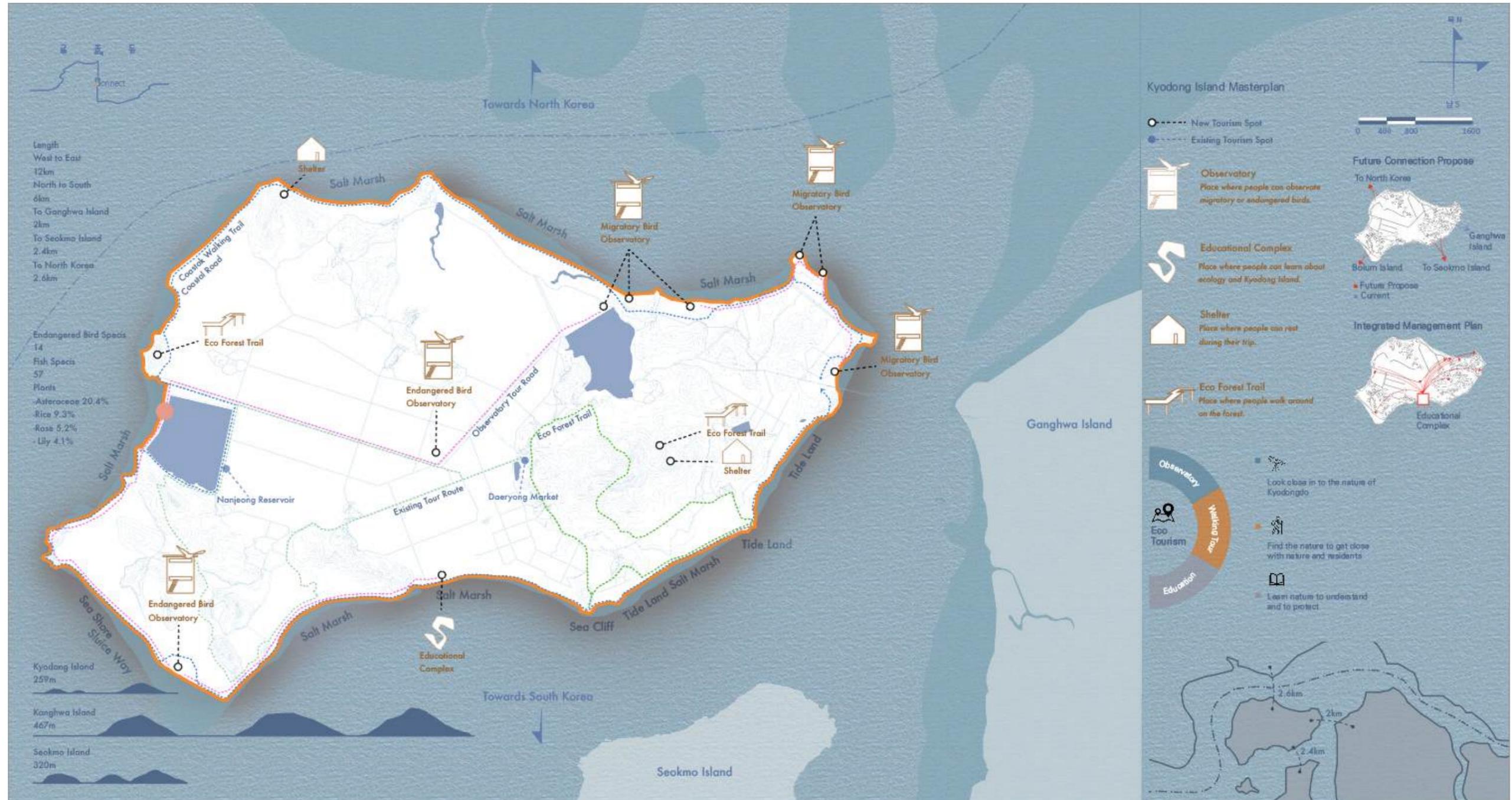


[Figure 4-12] Space Concept

# Chapter5. Masterplan and Strategic Plan

## 5.1 Masterplan

### 5.1.1 Masterplan



[Figure 5-1] Masterplan

[Figure 5-1] is the Master Plan of Kyodong Island. The master plan shows the location of the observation deck, ecological forest, and educational complex within the island. The plan of the study is not developing the entire island but it is more about creating necessary facilities and deriving new tourism factors that the plan does not clearly show in this master plan. By dispersing tourist attractions that have been concentrated around Daeryongri, tourists are introduced to diverse cultures and characteristics of Kyodongdo.

The first facility is the bird observatory. Most migratory birds were found in Bongsori, and ducks were found in near or at reservoirs. Due to the migratory birds stay near paddy fields and the seaside, that the observatory were installed near the coast area. In addition, various types of ducks and endangered birds were found near the reservoir that the observatory were installed near it.

Second plan is eco forest trail. The Hwagae mountain was selected for the trail due to the reason that a lot of different species of birds were found. The Goyangi mountain was also chosen for ecological trails. The reason is because first, the view of mountain does not get disturb by others. There are no other mountains near Goyangi that it does not get disturbed. Also, because of this reason, it is possible to view both North and South Korea at the same time scenery of Kyodongdo.

Lastly, the educational complex. Various types of educational programs will operate such as history, ecology and art. The location of the complex is where birds were not much found, and it locates on the side of Kyodongdo that it reduces the disturbance of the height of the building. The buildings will be lower than 3 stories because the mountains in Kyodongdo are quite low and more than 90% of the lands are farm land.



[Figure 5-3] Tour Route

There are two tour route planned which consisted of a coastal route and observatory routes. There are also two other route that are currently existing in Kyodongdo which call ‘Daeulsae trail’ and ‘Way to Murumae’ The course 1, ‘Daeulsae trail’ consists of the Wolsun port, Kyodong hyanggyo, Hwagaesa, Kyodongeupsung, Daeryong market and Namsan port. Course 2 starts at Daeryong ri, via Nanjeong reservoir to Sujeong mountain, Gumjeong lair, Juksan port, Aegibong and Yanggap ri and the courses can be seen in [Figure 5-2]. The two new planned courses consist of coastal and observatory courses.

#### ■ Coastal Route

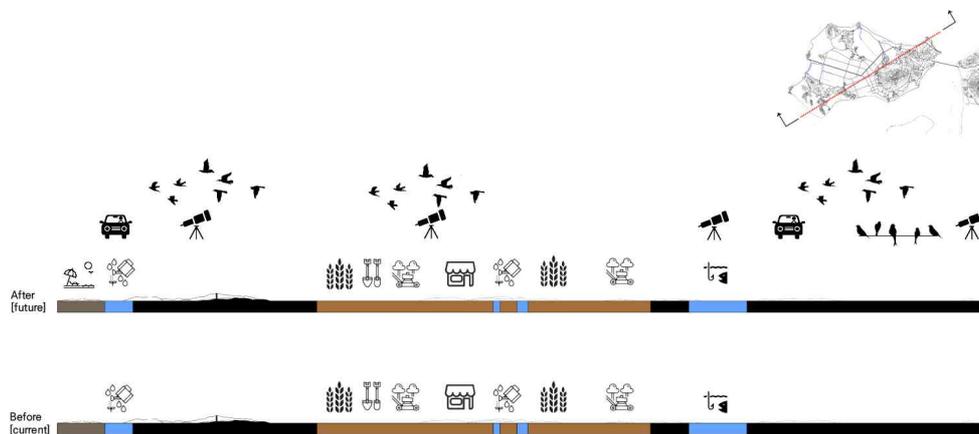
The coastal roads were planned on the very edge that people can see the view without any interruption. The merit of the coastal road of Kyodongdo is that it can observe both South and North Korea, and at the same time it can observe scenery of natural environment of Kyodongdo. However now, due to mountains and farm lands, there are no proper road that had been made that the roads are more like paddy roads. The roads are very inconvenient to drive. Therefore, the propose the coastal road development. However, to create the road that does not harm the nature that some of the drive courses are not set on the seaside. For example, the Goyangi mountain which planned to design as ecological forests, rather than create the road on the sea side, it planned to set the road on the east side that it does not interrupt the cure zone.

#### ■ Observatory Route

The observatory route starts from Bonsori which is on the east side of the

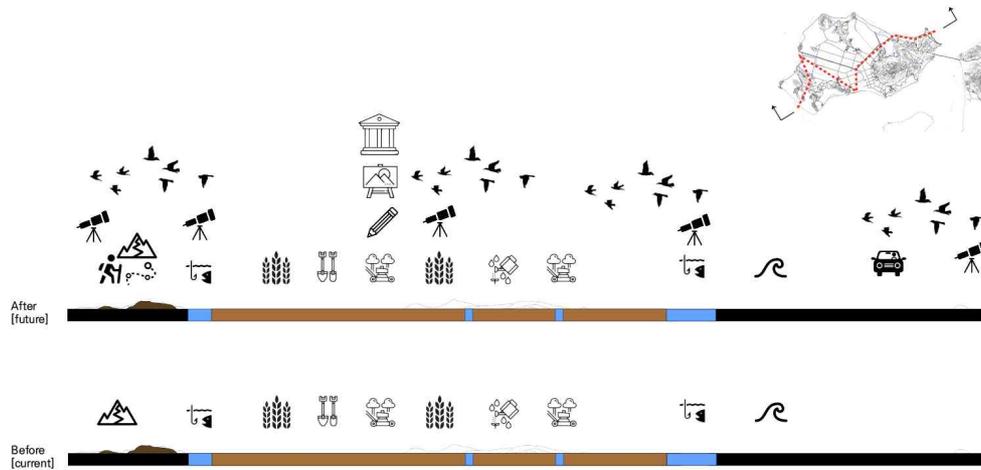
island. It passes through the Koku reservoir where a lot of ducks are found to Nanjeong reservoir. The route rather go through the farm lands to give chance tourists to see the farmlands closer and not follow the coastal road. The last destination of the course is the educational complex. The reason why the course includes the complex is because people are not allow to make noise at the reservoir at the same time they can not touch or watch closer in the birds that there are no chance for them to learn deeply about the ecology or birds.

### 5.1.2 Section



[Figure 5-4] Section One

The purpose of this sections are to show how the whole island had changed and the activated programs. The first section cuts through southwest to northeast side of the island. The present section which is the lower image has more blank space and most of places are the farmlands. However, after the plan, the upper image has more diverse in experience. It has driving course, bird observatories with birds found spots.



[Figure 5-5] Section Two

The second section is for the same purpose but shows different place. From the very left side, it was only a mountain with a tracking course but the trail deck and the observatory were created also at the reservoir which is right after the mountain image. Also, in the middle part, it was only a farmlands with a small trail of waters but soon it got educational centers, museum, gallery and study rooms. On the very right side of the image, it had nothing but now, there are driving course with observatory.

## 5.2 Strategic Plan

### 5.2.1 Guideline for Bird Observatory

Before proceeding the design of bird observatory, the guidelines for the design should be considered first for bird safety. The following table is the guideline for safety of the birds.

[Table 5-1] Guideline for Bird Observatory

Type	Cause	Solution
Glass	Birds does not perceive glass as an object. They don't realize the existence of the glass and does not catch it as obstacle on their flight path.	Day Time 1. Use reflection 2. Use visible glass Night Time 1. Beacon effect
Height	There are a lot of migratory birds visiting Kyodong that the height of the building causes harm on their flight path	Refer [Figure 5-8]
Access	If too many people visit the observatory that even a guide can not control them, it has a chance for them to make noise or a problem.	Enhance access visitors at the observatory.
Exterior gap	It would be dangerous for the birds when they fly if the facade of the design uses horizontal spandrels or a vertical mullion.	Refer [Figure 5-7]
Lighting	The migratory birds or the shore birds migrate at night time. The birds has navigational system that helps them to migrate but the artificial light impede their flight	1. Reduce unnecessary light 2. Use down lighting 3. Avoid up lighting

■ Window Guide

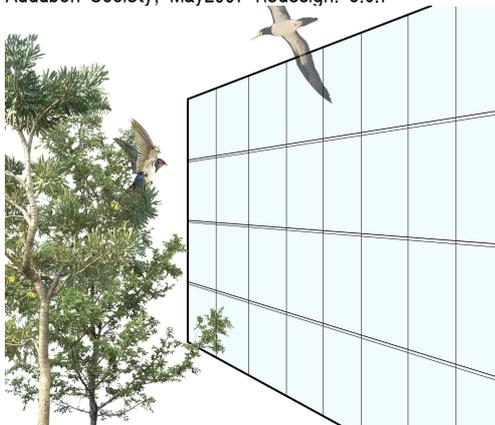


[Figure 5-6] Day Time Reflection

Reference: Bird-Safe Building Guidelines. New York City Audubon Society, May2007 Redesign. 5.6.7

[Figure 5-6] Day Time Reflection

Reference: Bird-Safe Building Guidelines. New York City Audubon Society, May2007 Redesign. 5.6.7



[Figure 5-8] Patterned Window

to use reflection, effects or patterned window or increase the density of the mullions is one another way to make friendly design for the birds if its necessary. The visual markers should be in very 10cm which is the width of a hand. The gaps make birds not to try fly between the markers.

In case of Canada, about 16 to 42 million birds die from colliding with the glass every year.<sup>39)</sup> These are the image of the guidance of the window. There are thousands of birds die from the glass all around the world. Window or glass is the killer of the birds. The design offer

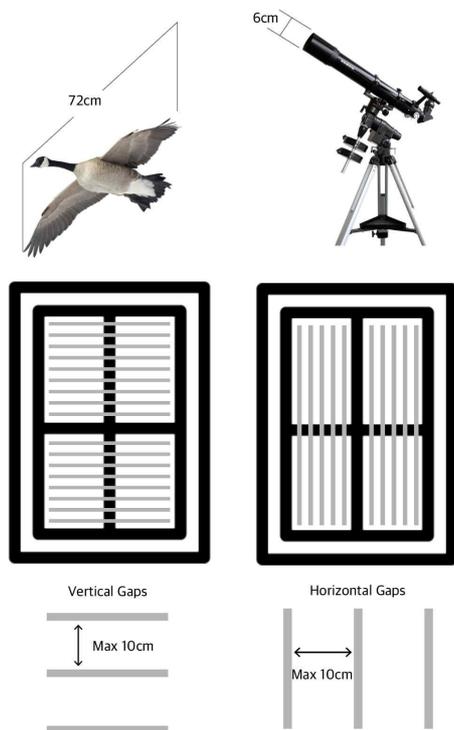
39) City of Vancouver(2014). 『Bird Friendly Design Guidelines Explanatory Note』 . Greenest City 2020



[Figure 5-9] Height Guide

### ■ Height Guide

Birds use the farm lands for their living area. To not disturb their living area, the height limit must be proposed. Even if migratory birds fly over 600m, the observatory height must not be over 3 stories.



[Figure 5-10] Facade Gap

### ■ Gap Guide

This is the gap guidance for the facade or window of the observatory. The birds should not be trapped on the gaps of the facade. The guidance recommends the vertical gap to be a maximum of 10cm and also with the horizontal. 10cm are still a big gap for the small birds that, except in the place where telescopes are placed, recommend the gaps to be smaller than 5cm.

### 5.2.2 Observatory Design

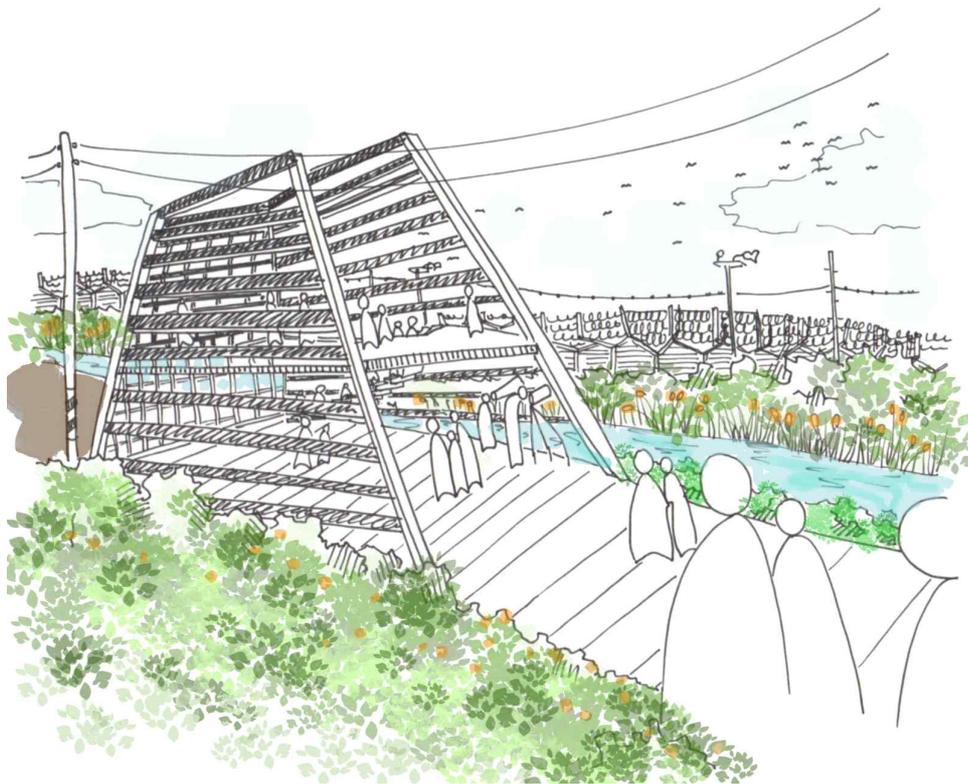
The bird observatory sets on farmlands, reservoir or at the seaside. This is going to be the main tourism spots for Kyodongdo. At the observatory, people are suppose to watch birds flying and hear them. However, the point for the area is not only observing them. Its more about feeling and hearing the nature of Kyodong island. People stand on the first floor of the observatory to see closer in the nature. Before get close, everything needs a time to think and learn. The first floor for the observatory mean to get close them step by step and very slow. The second level for the observatory means the equal. People stand on the second floor where them and nature on the same level, and watch them. Recording to Jan Gehl, people prefer to watch others where stranger can not see them. The second floor, where its not too close or not too far, is where the nature and people watch them carefully to get closer. The last floor which is the third, is where finally, where nature allow humans to see, touch, feel, and hear them.



[Figure 5-11] Farmland Bird Observatory Perspective



[Figure 5-12] Reservoir Bird Observatory



[Figure 5-13] Bongsori Bird Observatory



[Figure 5-14] Seaside Bird Observatory I



[Figure 5-15] Seaside Bird Observatory II

### 5.2.3 Coastal Road



[Figure 5-16] Coastal Road

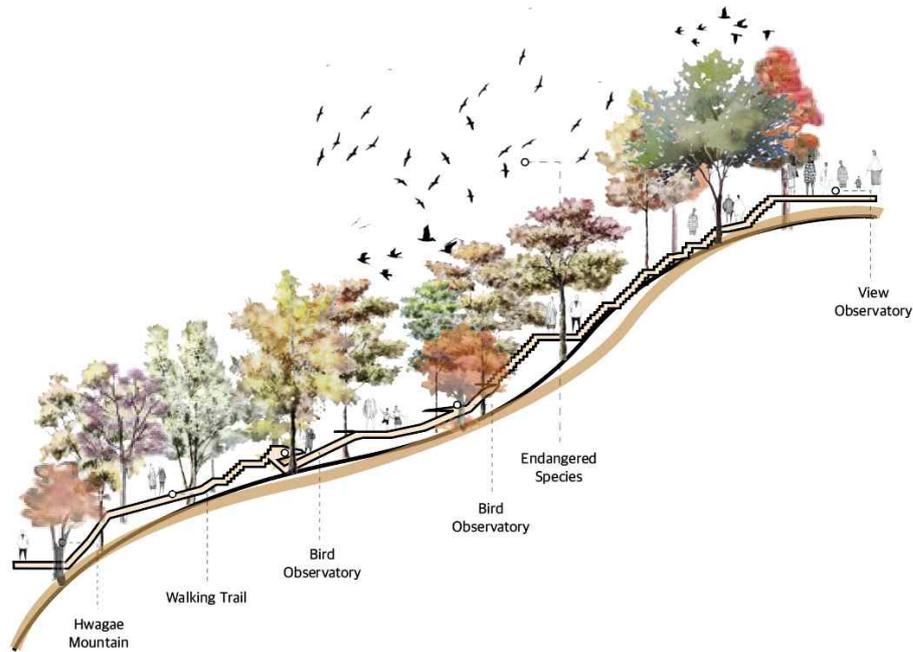
The coastal road, on the very edges of Kyodongdo, will be a very future plan that Kyodong island still surrounded by the iron wire to protect themselves from North Korea defector. However, in the future, when the island become free from army and finally gets free, it will present a beauty of a coastal road. Kyodongdo has a different view of coastal from all the other places. It does not have a blue transparency ocean but it contains an diverse activities with them. It has all different shapes of terrains, sea plants, fishes or other water creatures. Especially the mud flat, which is one of the top in the world will bring Kyodongdo a big benefit in economic.

## 5.2.4 Eco Forest Trail



[Figure 5-17] Eco Forest Trail Perspective

The walkaway trail is designed at Hwagae mountain and Goyangi mountain. It is created to protect the nature from human and at the same time, to give comfortable for walking to people. We kill nature but there are a lot of time that we don't realize about it. We step on them, we root up the plants only because they are beautiful, we talk loud but the animals are sensitive in sounds, or we just pass them, because we are here only to breathe fresh air and exercise but we bring them trash. The purpose of the trail is to make people think, understand, and learn to protect them.

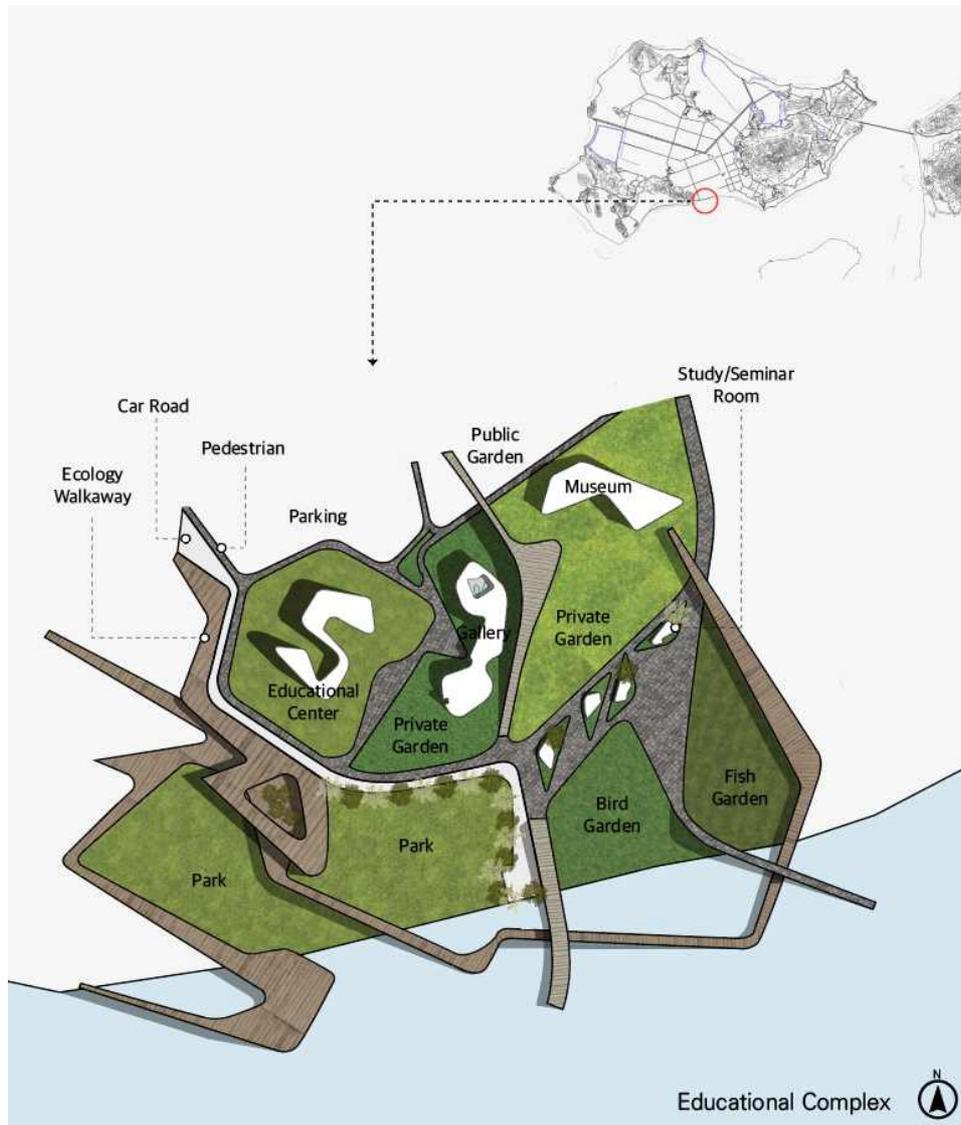


[Figure 5-18] Eco Forest Trail Section

### 5.2.5 Educational Complex

The educational complex designed on the seaside. The place is not building based place that it works more as a park or a garden. Due to there are no place for Kyodong residents to enjoy those things that the complex has more of parks. The buildings backed up by the seaside that in case the birds visit, they often sit near the sea. There are some decks on the sea for the fish observation. There are no proper place for fish observation that it included with the educational complex.

The shapes of the buildings or the orientation of the gardens are opposite of how farmlands are oriented. Farmlands are paralleled horizontally and vertically. The residents of Kyodongdo have been living in an inadequate environment since the end of the Korean War until now that they even



[Figure 5-19] Educational Complex Plan

have two or more jobs to survive. In addition, many displaced people have not been treated for pain from the war, the breakup with family, and the losing their homeland. Therefore, the design of the complex is to show the peace and free through this complex. It contains a wide free area with not

oriented shapes.

The place is designed for the tourists but the residents should be come first for the use. There is only one car way through the parks for an emergency. There are two pathway for people. One is pedestrian with stone tiled floor and other is wooden deck. Wooden deck is for a ecology walkaway and stone tiled floor is for a path to go to a building.

### 5.2.6 Tourism Scenario

The scenario is to anticipate and review the planned spaces as a perspective on tourists and Kyodong residents. The year for the scenario is around 2050, imagine there is no North or South Korea but Republic of Korea. All the plans were set and the iron wires are gone except few for memory and history.

#### ■ Weekday Tourist

Its in early 2050 when the plans were completed a year ago. Kyodong island is now starting to rise as a tourism spot. All the displaced people are gone, but their kids still lives in the island and managing the whole island.

[Table 5-2] Tourism Scenario 1

Time	Place	Do
8.00am	Home	Get ready to go
10.30am	Kyodongdo	Visit Jaebi jip
11.00am	Restaurant	Eat Lunch : A South Korean Dining Tea : Have cup of tea that had been famouse for long time in Kyodong do
12.00pm	Hwagae Mt	Climb up the mountains
14.00pm	Educational Center	Learn about history of Kyodongdo Visit gallery and look around the center

Time	Place	Do
16.00pm	Observatory	Observe the birds and nature of Kyodongdo
18.00pm	Restaurant	Eat Dinner : A North Korean Dining
19.00pm	Car	Back to his house

Mr. Lee is in his late 50s who lives at an apartment with his family where it is surrounded by mountains in Ilsan. He loves to go walk especially to mountains that every morning he climbs up the mountains. Last week, while he met with his friends, he heard about an island where the mountains are not too high but the scenery of the top of the mountain gives you free on their heart, Today, he planned to go to the island that friends had told him with his daughter Ms. Lee. Mr and Ms Lee woke up at 8:00am and packed up their bag. Before they leave, they didn't eat breakfast that they had in their car on the way to Kyodong island.

They first visit Jaebi jip which gives basic informations about the island tour. Jaebi jip first tell about the routes and teach the basic rules that the tourists have to follow in the island and make sure that they follow.

Before they go for the tour, they went for lunch. It is a local restaurant, run by a grandchild of displaced person. They make a home food in North Korean style. It was a great lunch even though it is now easy to try North and South Korean food. After the lunch they visit a coffee shop which is running for longer than 60 years. The drinks taste very old, old enough to feel the time.

Then they drove to the entrance of the Hwagae mountain. They parked at the parking space and started on their way to the top. Before taking step, there is a sign explaining the walkaway. The walkaway was made to feel, touch, understand and protect the nature. On their way, they can not touch or talk loud. They listen carefully in the sound of their foot steps. Then the

sound of bird came in with the wind. The sound of the food steps stopped. They walk carefully to listen and feel. The sound of nature was louder than their food steps. The sound of wind touching the leaves of the trees, then the sound of the leaves fallen down to the ground. The animals stepping on the fallen leaves and the moving of fresh air. Its on their way to realize the meaning of the true peace.

■ Resident

[Table 5-3] Tourism Scenario 3

Time	Place	Do
8.00am	Home	Get children to go school
9.00am	Educational Complex	Go to work at 9.00am
10.00am		Check for the missing pamphlets/ Check up the tour guides
11.00am		Open up the complex and welcome
12.00pm		Eat lunch with her colleagues at work
13.00pm		History Museum
15.00pm	History Museum	Works for commentator at 13.00pm program
17.00pm	History Museum	Works for commentator at 13.00pm program
19.00pm	Home	

Mrs Kim, who is a granddaughter of a displaced grandmother is in her early 40s. She has two children who goes to an elementary school in Kyodongdo. The population of children are increasing every year that she thinks very pleasure. She works at the educational complex. She is the manager of the whole programs. When she go to work, the first thing to do is to walk the whole complex to check whether there are any trash or sick animals or harmed plants.

She gets ready to welcome the tourists because its weekend. On the week days, because there are not many people visit the island due to a lot of shops and stores are closed because the island has its own life. On the

weekend, almost 4000 people visit the island due to the limitation of the tourism population of 4000. She always opens the educational complex and welcomes the tourists who visit the place. Usually tourists visit Jaebijip to get basic information about Kyodongdo. People get maps, and learn about the rules that the tourists have to follow, and the tourism spots.

After she had lunch with her colleagues at work, she goes to the history museum to work as a commentator. She tells stories about her grandmothers and her friends' lives to people. People love the history about the island, but people get interested in the stories about the real life stories of people who lived in this island long time ago. This is her favourite time, when she tells about the stories, and when people start to really care about the story because this means, people are now caring about the island like her and her grandmother.

## Chapter6. Conclusion

The purpose of this study is to increase the ecological value of natural resources for tourism preservation and to allow tourists to learn, experience of the coexistence of nature and local residents.

Bordered area is becoming new interests for people all around the world. However, islands in the border regions doesn't attract people as much as other regions due to its lack of tourism resources and hard to approach. Among the other bordered islands on west side of Korea, Kyodong island is relatively easy to approach compare to them. It is also closest island from North Korea and South Korea.

However, various plans for Kyodong island have been proceeded with lack of details such as fixing roof or roads rather than discover for new resources. Therefore, the aim for this study was to find new resources and proceed ecotourism plan based on those resources and the followings are the conclusions of the plans and the discovered resources.

First, while discovering the resources, various terrain types, different species of birds and fishes and vegetations were found. In case of birds and marine organisms, there were 49 different species of birds and 57 species of marine organisms were found. There were two main type, migratory and endangered birds were often found.

Second, the study set the meaning of peace not only in terms of the unification peace of South and North Korea but also in peace using nature. Therefore, the basic idea is "Island coexisting with nature," "Island that can cure with nature," and "Island that can get closer to nature. "

Third, from those found resources, different tourism spots were planned. Terrains were used for coastal road, mountains turned into eco forest trail and observatories were placed in different spots for observate birds.

Lastly, educational complex will be placed to educate tourists and also the local residents. The complex work as a place to educate and learn but at the same time link tourist, local residents and nature.

The study suggest to look deep inside of Kyodongdo and utilize the natural resources for the activation plan of ecotourism not redesigning existing facilities. The study has discrimination from others by planning ecotourism at the same time deriving the natural resources that Kyodongdo has.

Kyodongdo, the site of this research, is a border area that there were limit in understanding of current and past situation and also on collecting data. Also, the digital maps of Kyodongdo were not provided because it was not allowed due to its safety. The maps were self drawn by the researcher that the accuracy is low that it is difficult to apply the design on the site accurately.

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## [ Appendixes ] Tourist Survey

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### 교동도 관광활성화를 위한 관광객 인식조사

안녕하십니까 저는 서울대학교 환경대학원에 석사과정으로 재학중이며 본 설문지는 『교동도 관광활성화를 위한 기본계획 및 설계』에 관한 연구를 위한 관광객 인식조사입니다. 교동도 환경개선을 위해 조사하오니 바쁘시더라도 꼭 적극적으로 협조해 주시면 감사하겠습니다.

본 설문지의 응답하신 사항은 모두 무기명으로 통계 처리되며, 연구목적 외에는 절대로 사용하지 않을 것을 약속드립니다. 본 내용은 통계 목적 이외에는 절대로 사용할 수 없으며, 통계법 제 22조 및 제 34조에 규정되어 있음을 알려드립니다. 설문에 응해주셔서 진심으로 감사드립니다.

서울대학교 환경대학원 석사과정

연구자 : 이예린 (010-8643-9795) (jeylin720@snu.ac.kr)

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#### 1. 응답자 특성 질문

1.1 귀하의 주소지는 어디입니까?

- ① 서울 ② 경기도[남경기] (      ) ③ 경기도[북경기] (      )  
④ 인천 ⑤ 외 타 지역 (      )

1.2 귀하의 직업은 무엇입니까?

- ① 학생 ② 직장인 ③ 자영업 ④ 공무원/교사 ⑤ 기타 (      )

1.3 귀하의 연령대를 체크해 주세요.

- ① 20세 미만 ② 20세 이상~ 30세 미만 ③ 30세 이상 ~ 40세 미만  
④ 40세 이상 ~ 50세 미만 ⑤ 50세 이상 ~ 60세 미만 ⑥ 60세 이상

1.4 귀하의 성별을 체크해 주세요.

- ① 남자 ② 여자

## 2. 응답자 교동도 방문 특성 질문

2.1 귀하의 방문 목적은 무엇입니까?

- ① 관광 ② 업무목적 ③ 등산 ③ 친인척 방문 ④ 낚시
- ⑤ 기타 : (                      )

2.1.1 방문 목적이 관광이라면 어떠한 관광 목적입니까??

- ① 접경지역 관광 ② 힐링 ③ 자연경관 ③ 아이들 교육
- ④ 기타 : (                      )

2.2 누구와 함께 방문 하였습니다습니까?

- ① 혼자 ② 가족 ③ 연인 ④ 친구 ⑤ 사업동료
- ⑥ 동호회 ⑦ 기타 : (                      )

2.3 교동도 방문이 처음입니까?

- ① 그렇다 ② 그렇지 않다 방문 수 : (                      )

2.4 교동도 어떤 곳을 방문 하였습니다습니까? 혹은 방문 예정 중에 있습니까?

- ① 대룡시장 ② 망향대 ③ 고구저수지 ④ 난정저수지 ⑤ 을지타이거여단
- ⑥ 화개사 ⑦ 연산균유배지 ⑧ 제비집 ⑨ 교동향교 ⑩ 기타(                      )

2.5 교동도를 어떻게 알고 오셨습니까?

- ① 친인척 추천 ② 인터넷을 보다가 ③ 접경지역 관광을 찾아보다가
- ④ 근처 거주 ⑤ 기타 : (                      )

2.6 교동도에서 투숙·숙박 예정입니까?

- ① 그렇다 ② 그렇지 않다

2.7 위 질문에 ‘그렇지 않다’ 에 답변하신 응답자.

교동도에서 머무르지 않는 이유는 무엇입니까?

① 숙박시설이 마땅치 않아서 ② 마땅히 할 것이 없어서 ③ 기타 ( )

2.8 교동도에 들리기 전에 혹은 들린 후에 다른 관광지를 들릴 예정입니까?

① 그렇다 (들리기 전),(들린 후)/어느 곳을 들릴 예정입니까? ( )

② 그렇지 않다

2.9 교동도 재방문 의사가 있습니까?

① 그렇다 ② 그렇지 않다 이유 : ( )

**3. 응답자 교동도 인식 질문**

3.1 응답자가 생각하는 교동도는 평화의 섬입니까?

① 그렇다 ② 그렇지 않다

3.2 귀하가 생각하는 교동도의 개선사항은 무엇입니까?

필요한 시설	
부족한 시설	
불편한 점	

3.3 교동도의 장점 및 단점은 무엇입니까?

장점	
단점	

3.4 교동도에 대한 생각은 어떻습니까?

항목	부정적-----				공정적
관광지로서	①	②	③	④	⑤
역사유적지	①	②	③	④	⑤
자연환경/경관	①	②	③	④	⑤
문화자원	①	②	③	④	⑤
음식	①	②	③	④	⑤
교통	①	②	③	④	⑤
접경지	①	②	③	④	⑤
숙박할만한 관광지로서	①	②	③	④	⑤

3.5 추가로 교동도에 대해 나누고 싶은 이야기가 있다면 적어주십시오.

# Resident Survey

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## 교동도 관광활성화를 위한 관광객 인식조사

안녕하십니까 저는 서울대학교 환경대학원에 석사과정으로 재학중이며 본 설문지는 『교동도 관광활성화를 위한 기본계획 및 설계』에 관한 연구를 위한 관광객 인식조사입니다. 교동도 환경개선을 위해 조사하오니 바쁘시더라도 꼭 적극적으로 협조해 주시면 감사하겠습니다.

본 설문지의 응답하신 사항은 모두 무기명으로 통계 처리되며, 연구목적 외에는 절대로 사용하지 않을 것을 약속드립니다. 본 내용은 통계 목적 이외에는 절대로 사용할 수 없으며, 통계법 제 22조 및 제 34조에 규정되어 있음을 알려드립니다. 설문에 응해주셔서 진심으로 감사드립니다.

서울대학교 환경대학원 석사과정

연구자 : 이예린 (010-8643-9795) (jeylin720@snu.ac.kr)

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### 1. 응답자 특성 질문

1.1 귀하의 주소지는 어디입니까? (리 단위)

( )

1.2 귀하의 직업은 무엇입니까?

( )

1.3 귀하의 연령대를 체크해 주세요.

① 25세 미만    ② 25세 이상 ~ 40세 미만    ③ 40세 이상 ~ 65세 미만

④ 65세 이상

1.4 귀하의 성별을 체크해 주세요.

① 남자    ② 여자

1.4 귀하의 고향은 어디입니까?

① 교동도    ② 연백    ③ ( )

1.1 귀하의 취미생활은 무엇입니까? \*예 게이트볼, 마을회관 들리기 등  
( )

**2. 응답자의 동네**

2.1 교동도에 거주한 기간은 얼마나 되십니까? ( )년

2.2 귀하가 살고 있는 지역에 거주한 기간은 얼마나 되십니까? ( )년

2.2 귀하가 현재 살고 있는 동네 [예\*대룡리]의 장단점은 무엇입니까?

장점	
단점	

2.3 귀하의 오래된 친구 혹은 가족이 눌러왔습니다. 그들에게 자신이 살고 있는 동네 [예\*대룡리등] 에 추천하고 싶은 공간, 장소는 어디입니까?  
( )

2.4 귀하의 동네에 필요하거나 부족한 시설이 있습니까?

필요한 시설	
부족한 시설	
불편한 점	

**3. 응답자가 생각하는 교동도**

3.1 응답자가 생각하는 교동도는 평화의 섬입니까?

- ① 그렇다    ② 그렇지 않다

3.2 귀하의 오래된 친구 혹은 가족이 눌러왔습니다. 그들에게 교동도 내에서 추천하고 싶은 공간, 장소는 어디입니까?  
( )

3.3 교동도에 필요하거나 부족한 시설이 있습니까? 불편한 점은 무엇입니까?

필요한 시설	
부족한 시설	
불편한 점	

3.4 교통도에 대한 생각은 어떻습니까?

항목	부정적 -----				공정적
관광지로서	①	②	③	④	⑤
역사유적지	①	②	③	④	⑤
자연환경/경관	①	②	③	④	⑤
문화자원	①	②	③	④	⑤
음식	①	②	③	④	⑤
교통	①	②	③	④	⑤
접경지	①	②	③	④	⑤
숙박할만한 관광지로서	①	②	③	④	⑤

4. 교통도 관광활성화 · 지역재생 사업

4.1 교통도를 대상으로 하는 관광활성화 사업, 평화의 섬 사업 등 다양한 사업들이 진행 중에 있습니다. 귀하는 이러한 사업들에 대해 알고 계십니까?

\*예, 제비집, 대룡시장 활성화, 교통도머르메길, 교통도다들새길 등

- ① 알고 있다    ② 모른다

4.2 사업들에 대해 알고 있다면 사업들의 장단점은 무엇입니까?

장점	
단점	

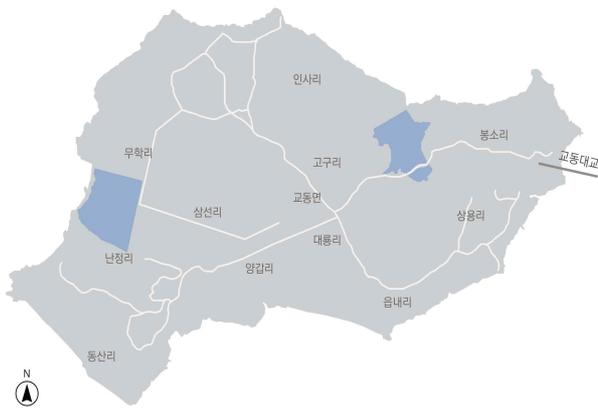
4.3 사업이 본인 혹은 교동도에 좋은 영향을 미치고 있습니까?

본인 : ① 그렇다 ② 그렇지 않다

교동도 : ① 그렇다 ② 그렇지 않다

교동도의 매력적인 공간은 어디입니까(동그라미)

관광객이 꼭 가보았으면 하는 공간은 어디입니까(세모)



주로 활동하는 영역들을 표시해주세요. 어떠한 활동을 하시나요?



## [ Appendixes ] 10 things tourist should follow

Tourists who visits Kyodong Island must observe all the rules and those rules are based on not disturbing the life and culture of nature and local residents. These rulse were researched based on the rules of Yakushima Island,

- ① Respect the culture and life of local residents
- ② Do Not speed up
- ③ Do Not throw way trash anywhere
- ④ Do Not bring dogs at the ecological experience space such as observatory
- ⑤ Do Not talk loud at the observatory
- ⑥ Do Not feed wild animals
- ⑦ Do Not steal animals and plants. (Including crops)
- ⑧ There are still some land mine. Drive or walk on the set road.

Tourism spot for tourists can be just a place where they stay for one night, however on the other hand, for someone, it is their hometown, land, and village. Therefore, we all should respect their region, culture and life. In addition, most of the land are farm lands, that a lot of farming vehicles are on the road and also, there are many elderly who pass the road by dragging a wheelchair or an electric wheelchair that if a car runs at high speed, it will lead to a big accident. All animals are not allowed in this place due to it can threaten the birds. They are also sensitive to sounds that if a person talk loud, they will all run away. They should be treated with care. All animals and plants, including crops, should not be taken out of Kyodongdo, and there is a danger of landmines that tourists must go by the prescribed route.

## 초 록

오늘날에는 환경 문제들이 대두되면서 자연에 대한 관심이 쏟아지고 있다. 관심은 다양한 분야에서 나타나고 있는데 관광분야에서도 지속가능한 관광이라는 새로운 형태가 나타났다. 이에 따라 현재 우수한 자연지역을 찾는 관광객이 늘어나고 있다. 이는 우리나라의 국민 소득과도 연관을 지을 수 있는데, 과거 국민 소득이 적었을 때는, 저렴하고 짧은 시간에 할 수 있는 장소 관람형 관광 형태였으며 차츰 힐링 여행이 인기를 얻으며 오늘날에는 직접 참여하고 느끼는 관광형태로 변화했고, 이는 생태관광의 붐을 일으켰다.

교동도는 꾸준히 '평화의 섬'으로 전환하기 위해 노력해왔다. 평화의 섬 만들기 프로젝트, 가보고 싶은 추억의 교동섬 만들기 사업, 관광자원화 사업, 등을 진행한 바 있지만 이는 모두 도로 개선 등의 가벼운 사업으로 끝나기 일수였다. 하지만 교동도에 관련한 사업들은 오랜 시간 동안 걸쳐 진행된 것은 아니다. 교동도가 대두되기 시작한 시점도 그리 오래된 일이 아니다. 북한과의 관계가 점차 완화되자 교동도에 대한 관심과 관련한 사업들이 생겨나기 시작한 것이다. 교동도는 진행되어지고 있는 수많은 사업들로 인하여 접경지역 섬의 대표적인 관광지를 목표로 변화하고 있다. 하지만 이 사업들이 교동도에 실제로 미치고 있는 영향은 사업들의 내용과 제목들에 비하면 너무나도 작은 규모로 마무리가 되었다. 교동도의 새로운 지역자원을 발굴하지 않고 현재 가지고 있는 관광자원들을 리모델링 하는 것만으로는 관광 활성화가 불가능하다.

이에 본 연구는 교동도 지역자원을 활용한 생태관광 계획을 진행하였다. 지역자원으로는 교동도의 생태와 주변의 섬을 활용하였으며 식생, 지형, 어류와 조류 그리고 교동도 외의 8개의 다른 접경지역 섬들의 네트워크 구상 방안을 제안하였다.

계획의 기본 구상은 자연을 기반으로 설정하였다. 교동도는 지난 몇 년간 꾸준히 평화의 섬으로 전환하기 위한 노력을 해왔다. 본 연구는 평화를 단순한 남북한의 통일평화의 차원에서가 아닌 자연을 활용한 평화로 의미설정을 하였다. 이에 따라 기본 구상은 첫째 '자연과 함께 공존하는 섬', 둘째 '자연으로 치유할 수 있는 섬' 그리고 마지막으로 '자연과 가까워질 수 있는 섬'이다.

자연자원 활용방안은 지형 및 해양의 경우 해안길 조성에 활용하였으며 식생은 생태숲길 조성, 조류와 어류의 경우 관찰전망대를 설치하였다. 최종적으로 선정된 지역은 봉소리, 난정리, 고구리, 상용리, 읍내리로 총 7개의 지역이다.

이를 바탕으로 프로그램 구상을 하였으며 소프트웨어와 하드웨어로 나누었으며 소프트웨어에는 교육, 조망, 체험, 참여 등 프로그램 위주이며 하드웨어는 전망대, 생태길, 해안길, 교육관이 포함된 물질적 공간이다. 이 프로그램들은 각각 기본 구상에서 나눈 '공존', '치유', 그리고 '친밀'존(zone)에 배치되었다. 공존존은 다양한 프로그램들이 이루어지는 공간이다. 이 공간에는 통일평화, 전시, 역사, 그리고 생태 프로그램이 진행된다. 치유존에는 생태치유의 숲, 조류관찰전망대, 어류관찰전망대, 해안/생태길과 쉼터를 조성하였다. 마지막으로 치유존은 박물관, 미술관, 생태체험학습장, 문화체험학습장, 세미나실, 그리고 스테디 실로 교육에 관련된 공간이 조성되었다.

주요어 : DMZ, 접경지역, 섬, 교동도, 생태관광, 섬관광  
학번 : 2017-28781