

Case Report on Flood Disasters in 20th-Century Korea: Focusing on the Dongjin-River and Imjin-River Basins*

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Introduction

Even this present century has been marked by the frequent signs of climatic changes caused by global warming. Just last year, in 2020, we witnessed manifestations of the climatic crisis around the globe in the form of unprecedented weather phenomena such as the inundation of Yangzi River basin (the Three Gorges Dam in particular) in China, a disastrous typhoon which hit the rice-cultivating areas in Kyushu, Japan, and the prolonged rainy spell on the mid-Korean Peninsula.¹ The extent of the flood disasters in East Asia show that natural disasters caused by the global-scale climatic changes are expanding to become a current social problem, a *déjà-vu* of events which occurred last century.

An environmental historian, J.R. McNeill, expressed his concern over the ongoing environmental degradation and disasters, “In environmental history, the twentieth century qualifies as a peculiar century because of the screeching acceleration of so

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¹ “Ol jangma ‘52-il’ yeokdae choejanggi 올 장마 ‘52日’ 歴代 最長期 (This year’s rain spell is ‘52 days,’ the longest in history),” *Hangyeore sinmun*, August 4, 2020; “Ibeon jangma neun ‘gihu wigi’ sijagil ppun, imgyejeom 4-nyeon namatda 이번 장마는 ‘기후위기’ 시작일 뿐, 임계점 4년 남았다 (This rain spell is only the beginning of the “climate crisis.” We only have 4 years till the critical point),” *Ohmynews*, August 11, 2020.

many processes that bring ecological change.”² Since the last century, population increase and industrialization (or urbanization) has accelerated a vicious cycle of economic development and environmental degradation, generating air and water pollution as well as depleting natural resources from the forests, the sources of water, and the ecosystem. Another precautionous voice was recently raised in Japan over the “severing water environment” in Asia, pointing out “population increase, economic development, and climatic change” as its major causes.³ We also have witnessed a number of water control failures and disastrous floods throughout the last two decades of our devoted research on the rural villages in the Honam Plain area.⁴

In this article, the issues of flood-endemic districts in the lowland areas of Honam Plain along Mangyeong and Dongjin Rivers will be examined in conjunction with the cases in the inland region around Imjin River on the mid-Korean Peninsula. The middle and lower reaches of Mangyeong and Dongjin Rivers form a large plain area, where the river flow is slow. This area suffers from frequent floods and droughts and, at the same time is well-known as the center of the rice cultivation in Korea. The Japanese colonial power, who made much of the rice production increase, initiated the river improvement projects in this basin as early as in the mid-colonial period. On the other hand, Imjin River is a rapid stream that flows through a narrow valley area. Despite frequent flooding due to the geological condition of the river, the colonial power, who took the fact that upland farming was predominant in this area into the consideration, neglected the situation, conducting no hydraulic control projects in the basin. They had to wait for the Comprehensive National Territorial Development Plan in the early 1970s after the liberation when the river improvement projects of Imjin River started.

In this paper, we clarify the characteristics of natural disasters and river improvement projects in South Korea by comparing above-mentioned two river basins with sharp geographical and historical contrasts. Analyzing cases over the span of the last one-hundred years, the traits of these two areas in a comparative historical perspective will be illuminated.

In comparison, this paper sets a working hypothesis that the river improvement

² McNeill, J. R., “Prologue: Peculiarities of a Prodigal Century,” *Something New Under the Sun: An Environmental History of the Twentieth-Century World* (New York: W. W. Norton & Company, 2000), 54.

³ See Gotō Akira 後藤晃 and Akiyama Kenji 秋山憲治 eds., *Ajia shakai to mizu: Ajia ga kakaeru gendai no mizu mondai* アジア社会と水: アジアが抱える現代の水問題 (Asian Society and Water: Current Water Problems in Asia) (Tokyo: Bunshindō, 2018).

⁴ Matsumoto Takenori and Chung Seung-Jin, “Water Management Projects and Floods/Droughts in Colonial Korea: The Case of *Mankyeong-gang* River Basin in the *Honam Plain*,” *Acta Koreana* 20:1 (2017), 173-193; Chung Seung-jin 정승진, “Honam Dongjin suri johap saeopui jeongae gwajeong 호남 동진수리조합사업의 전개과정 (The development process of Dongjin Irrigation Association Projects in Honam),” *Han’guksahakbo* 한국사학보 79 (2020), 265-305.

projects theoretically show three developmental stages: (1) partial improvement projects, (2) comprehensive projects, and (3) the alternative approach based on environmental, reflective perspective against excessive development. In the case of Mangyeong and Dongjin River Basin, we can observe the stage 1 in the colonial period, the stage 2 in the post-liberation period, and the stage 3 in Saemangeum project, respectively in accordance with the hypothesis.⁵ On the contrary, in Imjin River Basin, not only has the start of the river improvement project been delayed, but the river turned into an international river due to the north-south division before any significant progress could be made towards stage 2, which still seems impossible. As a result, they are facing two contemporary challenges simultaneously: a comprehensive river improvement project premised on north-south exchange and environmental protection. The working hypothesis, in this way, clarifies the contrasting historical experiences of the two basins. Comparing their cases also provides a useful historical perspective on the issues of contemporary river improvement projects in Korea.

As far as we can tell, there are no previous comparative studies on two basins that have geographically and historically contrasting conditions. This study complements our studies on Homan Plain mentioned above. Therefore, we will start with the basic-level bilateral comparison of the two regions, examine the traits and limits of Honam region in contrast to the cases of northern Gyeonggi Province, and vice versa to identify the problems of the latter in contrast to the Honam cases.

Overview of the Regions and the Cases of Two River Basins

Honam Plain, one of our focus regions, has historically been the largest rice basket in Korea and an area quite endemic to drought, but records about its lowlands in the downstream area exhibited typical examples of flood cases on the Korean Peninsula. The other region covered in this article, the Imjin and Hantan River Basins, includes flood-endemic districts with unusual locations in the central inland region. Let us briefly run through the natural geographic conditions of the Mangyeong and Dongjin River Basins in the southwest, and Imjin and Hantan River Basins on the mid-peninsula.

⁵ This does not justify the colonial policy of river improvement projects. In Japan proper, in 1923, the "Irrigation and Drainage Main Canal Improvement Project" started. See Imamura Naraomi 今村奈良臣 et al., *Tochi kairyō hyakunenshi* 土地改良百年史 (One Hundred Years History of Land Improvement) (Tokyo: Heibonsha, 1977), 130-131. The projects in Japan were directly managed by the prefectures, financially supported by the government subsidy. Those were the integrated river improvement projects that combined water supply projects and hydraulic control projects. Compared to this contemporaneous policy in Japan proper, the river improvement policies in colonial Korea were insufficient.

(1) Rivers of the Honam Plain Area

Located in the southwestern part of the Korean Peninsula, Honam Plain is the largest granary in Korea. There are two medium-sized rivers flowing westward across the plain, namely Mangyeong and Dongjin Rivers (See Figure 1). During the colonial period, the Government-General of Joseon designated twenty-three “Rivers under the Direct Management by the Government-General (*Sōtokufu chokkatsu kasen*), including these two rivers, subject to the Ordinance for Rivers in Joseon (*Chōsen kasenrei*) in 1927.⁶ Among these directly managed rivers, six including Mangyeong and Dongjin Rivers had basin areas measuring 1,000~2,000 km², as shown in Table 1. As for the percentage of the cultivated land and the rice paddies occupying the basin areas, Mangyeong and Dongjin Rivers had a relatively high percentage of cultivated area as compared with the other four rivers and streams. Honam Plain stretches along the mid- and lower reaches of the rivers and has been cultivated progressively (especially into the rice paddies) since the pre-modern period. However, the local farming villages have long suffered shortages of water supply due to the endemic drought.

In the early twentieth-century colonial period, a series of large-scale water management and flood control projects commenced in the parts of Honam Plain stretching along the two rivers. For instance, the relatively high percentage of cultivated lands around Dongjin River, shown in Table 1 above, reflects some achievement by drawing headwater from another nearby water system—Seomjin River—into Dongjin River. The case of Honam Plain area in the Dongjin River Basin, along with the first modern water management project done along Mangyeong River, represented a high level of progress in cultivating wet paddies during the colonial period, achieved in a relatively early period.

Honam Plain was historically renowned for the shortage of headwaters and endemic drought, so the irrigation system in the area developed around traditional dams (*jeeon* 堤堰), as exemplified by great ancient reservoirs such as Byeokgolje 碧骨堤 in Gimje 金堤, Nulje 訥堤 in Gobu 古阜, and Hwangdeungje 黃登堤 (also known as Yogyoje 腰橋堤) in Iksan 益山, which are also known as the “Three Reservoirs of Honam” (See Figure 1). By the Joseon period, however, their function gradually diminished and they were repeatedly closed down due to poor management. Meanwhile, the construction of dikes (*bo* 洑, traditional canal) to supply water from the river increased, as exemplified by Dokjuhangbo 犢走項洑 in Iksan and Manseokbo 萬石洑 in Jeongeup in the Mangyeong and Dongjin River Basins (Figure 1). The latter was originally constructed at the end of the seventeenth century and later renamed Yongsanbo 龍山洑. It is also known as having been a trigger for the local peasant rebellion, prompted during the process of its renovation in 1892. The peasant

⁶ Among the twenty-three directly managed rivers, Mangyeong River ranked nineteenth in basin acreage, and Dongjin River ranked the twenty-second.

rebellion in the Honam region later escalated into the Donghak Peasant War and furthermore into the Sino-Japanese War in 1894.

Table 1. Acreage of the Basin Areas (1,000~2,000 km² range) and Cultivated Land along the Rivers under the Direct Management by the Government-General

Rivers/ Streams	Basin area (km ²) (a)	Cultivated land (unit: <i>jeongbo</i>)			Percentage of culti- vated land (%) (c/a)	Percent- age of wet pad- dies (%) (b/a)	Location of the Estuaries (Provinces)
		Wet paddies (b)	Dry fields	Total (c)			
Anseong Stream	1,722	32,994	18,710	51,704	30.0	19.2	Gyeonggi S. Chungcheong
Sapgyo Stream	1,619	37,846	18,546	56,392	34.8	23.4	S. Chungcheong
Mangyeong River	1,602	44,507	13,423	57,929	36.2	27.4	N. Jeolla
Hyeongsan River	1,167	19,137	15,504	34,641	29.7	16.4	N. Gyeongsang
Namdae Stream	1,162	6,236	26,407	32,643	28.1	5.4	S. Hamgyeong
Dongjin Stream	1,034	36,744	11,009	47,754	46.2	35.5	N. Jeolla

(Other comparable examples)

Geum River	9,886	152,261	105,077	257,338	26.0	15.4	N. Jeolla, S. Chungcheong
Seomjin River	4,897	63,512	31,779	95,291	19.5	13.0	S. Jeolla, S. Gyeongsang
Imjin River	8,118	51,234	136,840	188,074	23.2	6.3	Gyeonggi

* 1 *jeongbo* 町步 = approx. 9917.4 m²

Source: Chōsen Sōtokufu 朝鮮總督府, *Chōsen kasen chōsasho (huhyō)* 朝鮮河川調査書(附表) (Survey of Rivers of Joseon [Appendixes]) (1929), 1158.

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While the Honam Plain suffered drought from insufficient water supply, as a mid- and downstream lowland area it was also prone to seasonal inundation. In the case of Mangyeong River Basin, the area was severely flooded in 1920 and 1921—which we will later examine. In response, the Government-General of Joseon initiated the Improvement Project for Rivers under the Direct Management in 1925, the first of its kind in Joseon. The Government-General’s report in 1937 introduces the area, stating: “cultivated land in the basin is a lowland section where the turbulent canal of the river meanders and the cross-sections of the stream are small and narrow. Therefore, the drainage of the flood is poor and there are no breakwater facilities, ... Once it downpours, the plain area is flooded by rising water and the submersion will last for days.”⁷ Moreover, it was possible to drive ferries upstream using the tidal range, as far as 40 km from the estuary.⁸ Though convenient for transportation, the high water disrupted the drainage and aggravated the damage done by the floods.

Meanwhile, the improvement project for Dongjin River began relatively late in 1937, also by the Government-General of Joseon. The Government-General described river conditions prior to the improvement works, stating “the mountain terrains are steep...with bare hills everywhere” and that in the headwater area the overall water collecting system was not fully functioning. Just as in the case of Mangyeong River, the high tidal wave affected areas up to twelve kilometers upstream from the estuary, the riverbanks were heavily eroded, while the mid- and lower reaches had “the meandering course of the water and the low inclination of the river.” As regards the downstream plain areas, it was also reported, “The plain

⁷ Chōsen Sōtokufu 朝鮮總督府, *Chōsen chokkatsu kasen kōshi nenpo* 朝鮮直轄河川工事年報 (Annual Report of Construction Works for the Rivers under the Direct Management in Joseon (Keijo: Chōsen Sōtokufu, 1937), 23.

⁸ *Ibid.*

areas of both river basins are flooded by inundation, along the riverway which runs across the sight of a lake in the area,” because “sludge from the tidal waves is heavily deposited.”⁹ As geographically shown in Figure 1, 3,180 *jeongbo* of land in six *myeon* (towns) in Gimje County, and two in Jeongeup County, in the coastal areas down the Dongjin River, are marked as districts endemic to flood. The area measures about 22% of the area (14,500 *jeongbo*) prearranged for Dongjin River water management by the Irrigation Association in the early 1920s, of which 1,812 *jeongbo* (approx. 12%) are reclaimed land.¹⁰

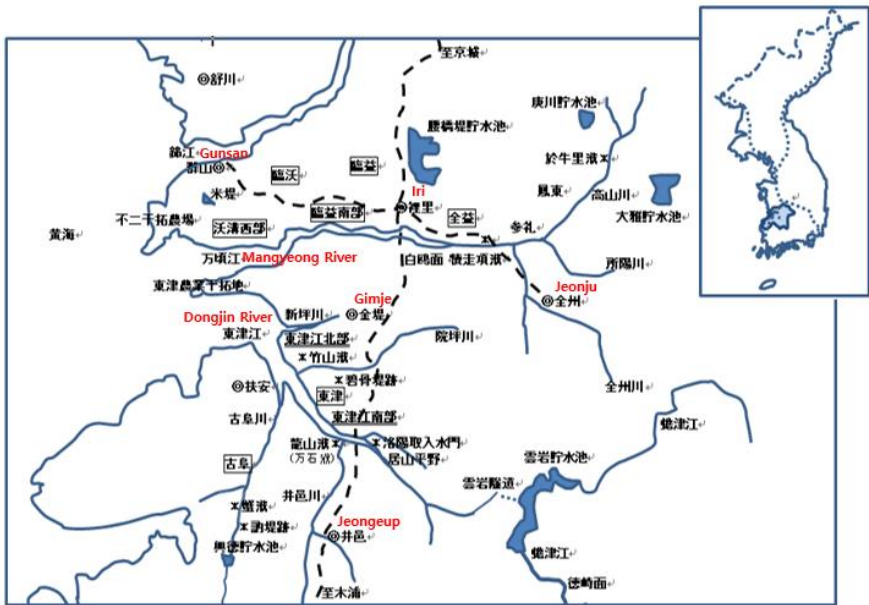


Figure 1. Distribution of Irrigation Associations in Honam Plain

Source: Takenori Matsumoto 松本武祝, “Shokuminchi Chōsen Chonbuku Honamu heiya ni okeru suiri kumiai no setsuritsu katei 植民地朝鮮・全北湖南平野における水利組合の設立過程 (Establishment of Irrigation Associations in Honam Plains, North Jeolla Province in Colonial Korea),” in Gotō Akira 後藤晃 and Akiyama Kenji 秋山憲治 eds., *Ajia shakai to mizu: Ajia ga kakaeru gendai no mizu mondai* アジア社会と水ーアジアが抱える現代の水問題 (Asian Society and Water: Current Water Problems in Asia) (Tokyo: Bunshindō, 2018), 159-187.

Note: Dotted lines are Honam (Honamseon 湖南線) and Jeonri (Jeonriseon 全裡線) Railroad Lines.

According to a plan by Dongjin Irrigation Association in 1922, the flood damage in the lower reaches of Dongjin River was reported as follows: In the coastal area,

⁹ *Ibid.*, 35.

¹⁰ Chung Seung-jin (2020), *op. cit.*, 273.

the tidal range could be as high as twenty *cheok* (approximately 6.7m), only 2-3 *cheok* lower than the average altitude of Honam Plain area during the highest tide. “When the heavy rain invades during the highest tide all at once, it disrupts the drainage to submerge parts of the plain, to tragedy.” Lowlands located in the east of Byeonggolje such as Gamgok-myeon, Jeongeup County, and Buryang-myeon, Gimje County, were heavily hit. It occasionally led to “traditional canals (*bo*) often hindering drainage,” similar in mechanism with the flood caused by the new facilities—the irrigation canals—which also will be elaborated on later.

(2) Imjin and Hantan River Basins in the Central Region

Compared to the medium-sized Mangyeong and Dongjin Rivers which run through Honam Plain, the largest grain-basket in Korea, Imjin River is a large river that incorporates another river, Hantan, as its largest tributary and runs through the central inland of the Korean Peninsula. As previously shown in Table 1, the acreage of the Imjin River Basin (8,118 km²) is comparable to that of Geum River, one of the four major rivers in Korea. However, by contrast to the Mangyeong and Dongjin River Basins, which belonged to the Northern Jeolla Plain Rice Farming District, the Imjin River Basin, a part of the “Gyeonggi Dry-field Farming Area,” had a lower percentage of farmland, especially wet-paddies.¹¹ Figure 2 below is an overview of the Imjin and Hantan River Basins, with the Military Demarcation Line represented in a dotted line. According to the district map on the right, Imjin is a major river that runs from its source in South Hamgyeong Province (Deogwon County), via Hwanghae Province (Goksan and Geumcheon Counties), Gangwon Province (Icheon, Pyeongyang, Gimhwa, and Cheorwon Counties), all the way to Gyeonggi Province (Pocheon, Yeoncheon, Jangdan, Gaeseong, Paju, and Yangju) (Table 2). However, following the armistice of the Korean War it became an international river by the national division.

The region attracted sudden attention during a few years of heavy flooding from 1996 to 1999, which will be comprehensively examined later in this paper. For now, it is noteworthy that the sources of the Imjin and Hantan Rivers are all located in the mountainous areas north of the Military Demarcation Line (MDL); one in Deogwon County, Hamgyeong Province, and the other in Pyeongyang County, Gangwon Province. At present, about 63% of the Imjin River Basin area is located north of the MDL and the mid- and upper reaches of the river are surrounded by a vast area of mountains, hills, and valleys, including the Demilitarized Zone (DMZ) between the two countries. Goam Mountain (780 m) in Cheorwon and Oseong Mountain (1,062

¹¹ Hisama, Kenichi 久間健一, *Chōsen nōgyō keiei chitai no kenkyū* 朝鮮農業經營地帯の研究 (A Study of Agricultural Management Area in Joseon) (Tokyo: Nōgyō Sōgō Kenkyū Kankōkai, 1946), 351-358.

m), the main mountain (jinsan 鎭山) of the former Gimhwa County, marked in the map above, bear geographic significance—the former is where Hill 924 is located, a fierce battlefield of the Korean War, and the latter exhibits the grandeur of Gwangju Mountain Range, a branch of Taebaek Mountain Range. They overlook a vast lava plateau, the Cheorwon Plain (approx. 20,000 *jeongbo*).

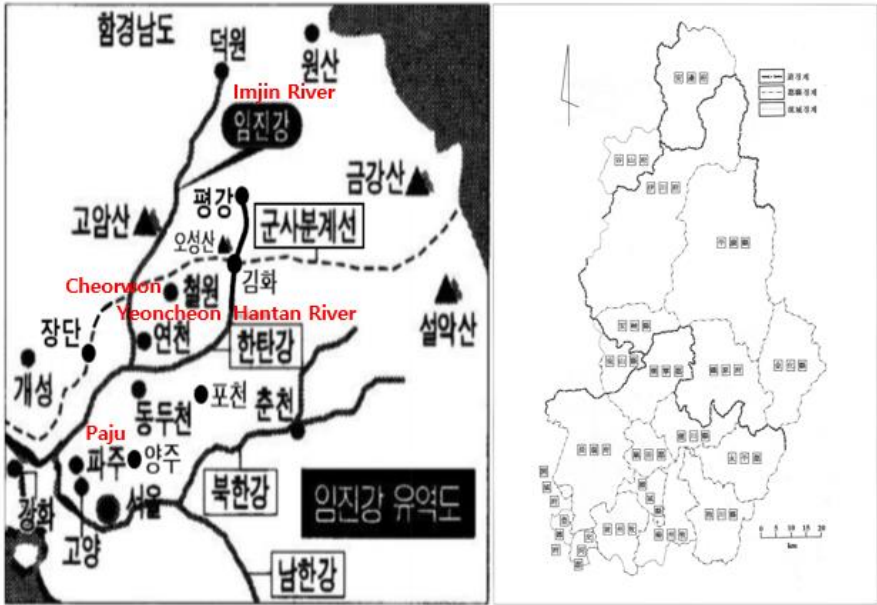


Figure 2. Map of Imjin and Hantan River Basins in the North of Han River

Sources: “Imjingang, bi man omyeon goppi pulineun ‘suma,’ 1996-, 98-nyeon ieo tto suhae 임진강 비만 오면 고삐 풀리는 ‘수마,’ 1996-98년 이어 또 수해 (Imjin River—Disastrous Flood Unleashed Whenever it Rains. Flood Damage Again, after 1996 and 1998),” *Donga ilbo* August 4, 1999; Gyeonggi-do Bangmulgwan 경기도박물관, *Gyeonggi-do 3-dae hacheonyuyekuijonghap haksul josa I: Imjingang* 임진강: 경기도 3대 하천 유역의 종합학술조사 I (Seoul: Gyeonggi-do Bangmulgwan, 2001), 232.

Unlike Honam Plain, the plains around Imjin River are distributed around the mid-upper reaches of the river as well as the mid-lower. This is related to the formation of the Pyeonggang Plateau from volcanic lava. In Figure 2, some wet-cultivated plain areas are found in places like Cheorwon (Gimhwa) and Yeoncheon in the mid-upper reaches of the river. By contrast, the lower reaches of the great river, such as Jangdan, Gaeseong, and Paju, encompass relatively large and plain lowlands, yet short of being called a great plain compared to those in other regions. According to

the *Survey Report on Joseon Rivers and Streams (Chōsen kasen chōsasho)*, published by the Interior Affairs Bureau, Government-General of Joseon in 1929, grand “water management plans” were established for the major rivers in Korea. However, the plan for Imjin River and its tributary Hantan River was excluded, even though it had previously been included in the 1920 plan published in the *Survey Report of Water Management and Irrigation* by the Government-General. The exclusion of this single river in the 1929 water control plan reveals the traits and limitations of the Imjin River Basin all at the same time, one of the issues we will deal with in the following sections.

Table 2. Acreage of Cultivated Land in Imjin and Hantan River Basins in the 1910s
(Unit: jeongbo)

Province	County	Wet-Paddies	Dry-Fields	Slash-and-Burn
Hamgyeong	Deogwon	35.0	436.8	1,562.7
Hwanghae	Goksan	38.0	1,522.0	210.0
Hwanghae	Geumcheon	260.5	2,336.1	(unknown)
Gangwon	Icheon	850.5	14,622.0	17,253.5
Gangwon	Pyeonggang	1,594.2	10,305.6	351.2
Gangwon	Gimhwa	1,301.4	3,925.2	1,546.2
Gangwon	Cheorwon	3,233.8	5,680.0	3,200 or more
Gyeonggi	Pocheon	3,467.5	10,064.2	550.0
Gyeonggi	Yeoncheon	2,779.9	4,040.2	(unknown)
Gyeonggi	Jangdan	4,266.8	11,302.0	(unknown)
Gyeonggi	Gaeseong	1,731.1	2,617.8	(unknown)
Gyeonggi	Paju	4,017.9	2,723.1	31.5
Gyeonggi	Yangju	2,863.0	3,720.2	15.8
Total	13	26,439.6 (21.2%)	73,295.2 (58.9%)	24,721.9 (19.9%)

Source: Chōsen Sōtokufu Kanbō Dobokubu 朝鮮總督府 官方土木部 (Civil Engineering Bureau, Government-General of Joseon), *Chisui oyobi suiri tōsasho* 治水及水利踏査書 (On-site Survey of Water Management and Irrigation) (Keijō: Chōsen Sōtokufu, 1920), 420-421.

Reading Table 2 with a focus on the types of the fields around Imjin River in the 1910s, one can perceive the regional trait of Imjin River basin as a mountainous cultivated area. The percentage of the dry fields (58.9%) is much higher than wet paddies (21.2%) in this region. Moreover, the percentage of the slash-and-burn fields

also remains similar to that of wet paddies (19.9%). Dry and slash-and-burn fields around the upstream Imjin River are usually located in Gangwon Province and the northern part of Gyeonggi Province, as well as the southern part of South Hamgyeong Province and the eastern part of Hwanghae Province where the head-water sites are located. These areas exhibit typical aspects of “Gyeonggi Dry-field Area” north of the Han River.¹²

The statistics of flood disasters in the Imjin River Basin reflect some significant geographical traits of the areas north of Han River. While disasters by flooding usually took place in coastal areas in the lower reaches of great rivers during the rainy spells of early summer (such as the case of lower Dongjin River Basin), statistics of “the unprecedentedly Great Flood” in Yeoncheon, in Table 3, show that it was an exceptional phenomenon that occurred in the central inland peninsula. This table displays the earliest statistics of flood damage in twentieth-century Korea.

Table 3. Damage from Imjin and Hantan Rivers Flooding in 1914 by County

Damage	Gaeseong	Paju	Jangdan	Yangju	Pocheon	Yeoncheon	Gimhwa	Total
Wet paddies (<i>jeongbo</i>)	211.2	38.5	240.5	2.0	不詳	379.0		871.2
Dry fields (<i>jeongbo</i>)	141.8	20.2	132.1	9.2		506.0		809.3
Death toll			2					2
Livestock deaths								
Houses swept away			1			4		5
Houses collapsed	69		2			9		80
Houses submerged	1,295	32	57			55	15	1,454

Source: Chōsen Sōtokufu Kanbō Dobokubu (1920), *op. cit.*, 447.

Note: The affected areas are listed by location from the lower to the mid- and upper reaches of the river.

Comparative statistics from the 1914 flood in the central inland area by location show that the scale of damage in Yeoncheon County in the mid-stream area was much greater than that of the downstream counties such as Gaeseong and Jangdan.

¹² So-called “Gyeonggi Dry-Field Areas” (京畿田作地域) categorized by Hisama, Kenichi include six counties in Gyeonggi Province—namely, Jangdan, Yeoncheon, Pocheon, Gapyeong, Yangju, Yangpyeong—and four counties in Gangwon Province—Chuncheon, Hoengseong, Hongju, and Wonju. *Ibid.*, 351.

Every summer, farmland flooding during the rain spells was the most serious problem in rural areas. This phenomenon is attributed to the terrains around Hantan River, formed by lava plateaus and glacial gorges.¹³ Since the river also collected in flowing water from its multiple tributaries in Pyeonggang and Gimhwa, central inland counties such as Cheorwon and Yeoncheon were prone to great floods every rainy season in summer, as will be elaborated in section IV.

Development of Irrigation System and Flood in Honam Plain

(1) Irrigation Association Projects in Honam Plain

Irrigation associations were the nuclei of the agricultural water management project in Korea during the colonial period. The legal establishment of irrigation associations was enabled through the legislation of the Ordinance for Irrigation Association (*Suiri kumiai jōrei*) under the Japanese imperial protectorate in 1906, immediately after the Russo-Japanese War, and the 1916 amendment of the ordinance to Decree for Joseon Irrigation Association (*Chōsen suiri kumiairei*) under the Government-General of Joseon. A series of Irrigation Association projects were promoted in full swing supported by the Joseon Increase Rice Production Plan (*Chōsen sanmai zōshoku keikaku*) launched in 1920, the Renewed Increase Rice Production Plan (*Sanmai zōshoku kōshin keikaku*) in 1926, government subsidies, and low-interest financial loans. Even though the “Renewed Plan” was halted in 1934 due to the Agricultural Depression of 1930-1934, a policy to promote irrigation associations was revived in 1940 as a part of the Increase Rice Production Plan during the wartime period.

Figure 3 shows the genealogy of the irrigation associations that were established or proposed for establishment in the Mangyeong and Dongjin River Basins (For their geographical locations, see Figure 1). Both river basins had a history of planning irrigation projects from the protectorate state, the former being the first of the modern irrigation associations. At the end of the Russo-Japanese War, the major Japanese landowners began to accumulate assets in the Honam Plain and became the leading promoters of irrigation associations. While the attempts to establish irrigation associations around Mangyeong River started relatively early, the same efforts for Dongjin River only came on track in the 1920s, after a decade of delayed progress in 1910 to 1920, as shown in Table 3. By the wartime period in the early 1940s, the

¹³ Erosion by lava and glaciers developed into narrow channels and valleys along the course of the Hantan River. See Geonseol Gytongbu 건설교통부 (Ministry of Construction and Transportation) and Han’guk Sujawon Gongsa 한국수자원공사 (Korea Water Resources Corporation), *Hantangang daem gibbon gyehoek bogoseo* 한탄강댐 기본계획보고서 (Basic Plan for Hantangang Dam) (2006).

existing irrigation associations were merged into a larger organization under each of the Mangyeong and Dongjin water systems.

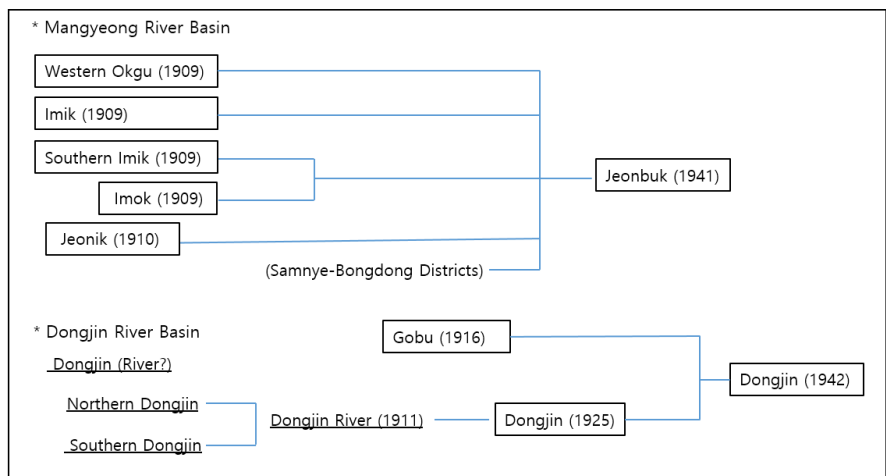


Figure 3. Transition of Irrigation Associations around Mangyeong and Dongjin River Basins

Source: Takenori Matsumoto (2018), *op. cit.*
Note 1. Numbers in parentheses are application years. Double-underlined names are associations with failed applications.
Note 2. The official names of the associations established in 1909 for the Dongjin River Basin is unclear.

1) Establishment of Irrigation Associations in Mangyeong River Basin

On the northern bank of the Mangyeong River, or the northern half of the Honam Plain, the establishment of the irrigation associations from 1909 to 1911 was usually led by major Japanese landowners, with the exception of the small-scale Western Okgu Irrigation Association. Later in 1920, Southern Imik and Imok Irrigation Associations were merged into Igok Irrigation Association. Unlike the irrigation projects undertaken by conventional small associations which merely repaired facilities to make use of existing headwaters, the new Igok Irrigation Association constructed a large concrete dam and a reservoir, Daeaji 大雅池, and secured a vast irrigated field of 9,400 *jeongbo*. Furthermore, as shown in Table 3, in 1941, the entire water system of Mangyeong River—i.e. the areas covered by four existing irrigation associations at the northern bank of Mangyeong River and the Samnye-Bongdong district—was incorporated into the Jeonbuk Irrigation Association district (18,500

jeongbo) following the severe drought of 1939.¹⁴

2) Establishment of Irrigation Associations in the Dongjin River Basin

In 1909, a large-scale irrigation association project was planned to cover about 10,000 *jeongbo* of farmland in the Dongjin River Basin, or the southern part of Honam Plain. However, it faced a backlash from the landowners in the upstream area for “ignoring the gift of nature.” As shown in Table 3, there were two separate applications submitted to establish irrigation associations in 1910, one for the northern district (upstream) and the other for the southern district (downstream). Since the administration recommended to merge them into a unit of a water system, a new application was submitted in 1911 for the approval of the Dongjin River Irrigation Association. However, this second attempt was also in vain as the administrators demanded the construction plan be changed for a number of reasons, including the shortage of water source.

An alternative plan to resolve the shortage of water source in Dongjin River was devised following the 1917 on-site survey conducted by the Government-General of Joseon. Its purpose was to establish an irrigation association dedicated to draw an additional supply of water from another water system by constructing a new reservoir in the tributary of Seomjin River. Around this time, another backlash rose in Jeongeup county in the upstream area, by those who considered that an equal share of expenditure on their part was not justified, given the relative lack of problems they experienced with the existing irrigation system. Although a revised plan to apply different association dues was submitted in 1921, it was brought down by another backlash from the major Japanese landowners, who were the permanent members of the committee. Differences between the upstream and downstream residents, or between ethnic groups, grew ever more vivid as tedious disputes continued.¹⁵

A few years later, the great drought of 1924 severely affected the Honam Plain area in Dongjin River Basin, prompting the North Jeolla Provincial Government to survey the local yields to introduce a new nine-grade system for the association fees,

¹⁴ See Takenori Matsumoto 松本武祝, “Shokuminchi Chōsen ni okeru nōgyō yōsui kaihatsu to suiri chitsujyo no kaihen: Mangyongang ryūiki wo taishō toshite 植民地朝鮮における農業用水開発と水利秩序の改編: 万頃江流域を対象として (Agricultural Water Development and Reorganization of the Irrigation System in the Colonial Period Joseon: On Mangyeong River Basin),” *Chōsenshi renkyūkai ronbunshū* 朝鮮史研究会論文集 41 (2003), 148-161.

¹⁵ The composition of the dispute and conflict emerged, on the one hand, between the earlier Japanese settlers who owned lands in the upper and middle reaches of Dongjin River, and on the other, the late-comer Japanese who settled in the downstream area, and between the Korean small-scale landowners in the up- and mid-stream areas and the major Japanese landowners in the downstream area. See Matsumoto and Chung (2017), *op. cit.*

expanded from the existing six-grade system.¹⁶ As shown in Figure 3, Dongjin Irrigation Association was established in 1925, covering 14,500 *jeongbo* of profitable acreage, and the irrigation water began to be supplied in 1928, once the construction work to draw water from Unam Reservoir was completed. Unlike the irrigation associations around Mangyeong River, the Dongjin Irrigation Association served not only the purpose of supplying irrigation and water, but also flood control. This also differentiated the irrigation association projects promoted in Joseon from those promoted in “mainland” Japan, where irrigation associations were first introduced. Similar to the case of Mangyeong River, the irrigation associations around Dongjin River Basin underwent major merging and reorganizing processes by the extended unit of water system in 1942.¹⁷

(2) Flood Disasters and River Improvement Projects in Honam Plain

1) Flood Disasters and Progress of River Improvement Projects in Mangyeong River Basin

As previously mentioned, the Improvement Project for Rivers under the Direct Management commenced in 1925. The Government-General of Joseon described the project as follows:

Until about the end of Meiji reign (1912), most of the lower reaches [of Mangyeong River] was reed marsh, but the climate is relatively warm and the area is close to Gunsan Port. So major *landowners* from the mainland [Japan] established and cultivated one large farm after another so that it now prides itself as the major rice production area in Joseon. As a result of installing railways, roads, and embankments constructed by the irrigation associations, all at once around the early reign of Taishō, the down flow of flood became poor so that there have been calls for river improvement work from early on. Following the floods in the ninth and the tenth year of the Taishō reign (1920, 1921), social disturbances occurred in the plain districts because of the flood control issues.”¹⁸

While the quoted remark overall emphasized the achievements of “development” under the colonial rule, it also recognized the modern civil-engineered infrastructure—the railways, the roads, and the embankments constructed by the irrigation

¹⁶ The association intended to levy “reasonable” association fees by means of subdividing the grades based on a precise knowledge of the yields per plot in 1922. However, how “reasonable” this graded system was remains questionable in terms of historical analysis, considering the rise of a massive anti-irrigation association movement led by the Korean landowners of medium-sized or small farms around the time that the irrigation associations were being established.

¹⁷ See Matsumoto (2018), *op. cit.*

¹⁸ Quoted from Chōsen Sōtokufu (1929), *op. cit.*, 368-369.

association—as a causal factor of the flood disasters.

According to newspaper articles at that time, a flood that occurred in 1921 caused damage in Jeonju, Iksan and Gimje. Five-thousand farmers from three counties rushed to the provincial office in Jeonju to demand flood control measures. The chief of police for Jeonju persuaded the farmers to select representatives to make a formal petition. The farmers selected fourteen representatives to petition the applicable office in North Jeolla Province.¹⁹ The petition submitted by the farmers listed three causes of the flood: (1) insufficient drainage due to the curves of the irrigation canal of the Igok Irrigation Association, (2) obstructed drainage due to the high elevation of many areas along the highway between Jeonju and Gunsan, and (3) the meandering course of the Mangyeong River that slows down the drainage. This indicates that the local farmers believed that the flood damage was caused both by the natural shape of the river and by existing infrastructures, such as roads and irrigation association waterways.

However, it is difficult to tell from these articles whether local farmers wanted additional improvements to be made to the existing infrastructures, or their removal. Sometime later in August 1931, the police stopped several hundred farmers in the Iksan and Gimje counties from destroying embankments built by the Igok Irrigation Association during a flood in the Mangyeong River Basin and arrested more than fifty people.²⁰ This shows that these local farmers, who perceived the Igok Irrigation Association as a “flood damage association,” actually did destroy embankments to prevent flood damage.

Meanwhile, major Japanese landowners and a few Koreans spearheaded efforts to submit petitions to the Government-General concerning the Mangyeong River improvements. In December 1921, the ‘Mangyeong River Improvement Action Committee’ was formed. This organization had 1,500 landowners as members, with thirty-four members owning more than ten hectares of land selected as committee members. Among them, ten major landowners (seven Japanese and three Korean)

¹⁹ “Gugaemyeonui ocheonmini jeonlabugdocheonge swaedohaladeun daejangchon bugeun nongminsodong sangbo 九個面の五千民이 전라북도청에 쇄도하러든 대장촌부근 농민소동 詳報 (A Detail Report on the Peasant Riot near Daejangchon-village, Where Five Thousands of People from Nine Sub-counties Have Rushed to the Jeollabuk-do Provincial Office),” *Donga ilbo*, September 24, 1921; “Jeonbugdocheonge swaedohan yugcheonmyeong nongmin 全北道廳에 殺到한 六千名 農民 (Six thousand Peasants Rushed into the North Jeolla Provincial Office),” *Maeil sinbo*, September 23, 1921; “Siwijeong undong-eun bulga 示威的 運動은 不可 (Any Demonstrations Are Not Allowed),” *Maeil sinbo*, September 25, 1921.

²⁰ “Igsan gimje lyang gunmin subaegmyeong dongwon mangyeong-gang jebang eul pagoe 益山金堤 兩郡民 數百名動員 萬頃江堤防을 破壞 (Some Hundreds of People from Iksan and Gimje County were Mobilized and Destroyed the Mangyeong River Embankment),” *Donga ilbo*, August 8, 1931.

were selected as standing committee members.²¹

These standing committee members first met with the North Jeolla Province Governor and then submitted petitions later to relevant departments of the Government-General of Joseon and to the Inspector-General in Gyeongseong.²² The written request stated that “drainage ebbing has been obstructed in several areas due to the development of recent transportation facilities,” indicating that they realized that existing infrastructures were causing flood damage. The request also insisted that “the success and failure of industrial development here depends completely on this river improvement project.” In contrast to the claims of the Korean farmers mentioned above, these landowners saw river improvements as the only way to prevent flood damage.

The paradoxical result that modifying infrastructures, intended for the sake of development, caused more flood disasters posed a serious dilemma for the colonizing authorities which intended to justify their rule over colonized Joseon under the pretext of “development.” Later, the Government-General commenced on the Improvement Project for Rivers under the Direct Management. In other words, they set up the policies on the infrastructure construction from a reformist viewpoint that “the paradox of development” can only be resolved by another form of development.

2) Flood Disasters and Progress of River Improvement Projects in Dongjin River Basin

River improvement works for Dongjin River started later than that for Mangyeong River. Meanwhile, the Government-General expedited the launching of projects for wastelands in the upper basin. In 1922, trees were planted for erosion control around eight rivers in the wastelands, including Dongjin River (and excluding Mangyeong River). In 1935, the second stage of the erosion control project was resumed in the same area,²³ but the lengthy span of years it took to carry out the projects suggests that their progress did not run smoothly.²⁴

Even after the erosion control works, Dongjin River Basin was still suffering from frequent flood damage. Headlines on the flood damage poured out especially after the establishment of the Dongjin Irrigation Association in 1925. In 1934, a newspaper reported that the area was flooded in four of the past seven years (in 1930, 1931,

²¹ “Mangyeong-gang jinjeong-wiwon giseonghoe ibseong 萬頃江期成會, 陳情委員入城 (The Mangyeong River Standing Committee Members Entered Gyeongseong),” *Maeil sinbo*, December 28, 1921.

²² *Ibid.*

²³ Chōsen Sōtokufu 朝鮮總督府, *Chōsen Sōtokufu shisei nenpō* 朝鮮總督府施政年報 (Government-General of Joseon’s Annual Administrative Report), 1940 edition, 322-323.

²⁴ There were some newspaper articles relating the cause of the flood of Dongjin River to deforestation and desolated fields, such as “Suwonji imya-ui hwangpye, chisu-e jungdae yeonghyang 水源池林野의 荒廢, 治水에 重大影響 (Desolation of Forests and Plains Have Serious Effects on Flood Control),” *Donga ilbo*, February 3, 1935.

1933, and 1934) since the irrigation association launched the new irrigation system in 1928.²⁵ The frequency of the disasters in the region was considerable, even bearing in mind that the flood damage in 1933 and 1934 was not confined to Honam region since the entire southern part of the peninsula was affected.²⁶ The causes can be listed as follows: ① the insufficient progress of the erosion control works; ② the lack of flood-control function of the headwater reservoir constructed by Dongjin Irrigation Association, because its origin belonged to a different water system (Seomjin River); ③ cultivation of wet-paddies in the flood-endemic downstream areas following the establishment of Dongjin Irrigation Association; and ④ the partial river improvement works in the upstream area of Dongjin River system,²⁷ which adversely affected the condition of the flood management in the mid- and lower reaches of the river. The headline of the article reported, “Among the five irrigation associations—Igok 益沃, Imik 臨益, Jeonik 全益, Gobu 古阜, and Dongjin 東津—only Dongjin was severely affected.” The improvement of the water management in Mangyeong River by the improvement project in a way emphasized the contrasting damage which occurred in the Dongjin River Basin.

In 1936, the Association for Dongjin River Improvement Promotion (Tōjinkō Kaishū Kiseikai 東津江改修期成會) was organized with fifty-three members, including major landowners, county magistrates, members of the provincial assembly, the police chief, members of Dongjin Irrigation Association, and the heads of the townships. They submitted petitions to the governor-general of Joseon, the vice governor-general, and even to the Japanese prime minister, the minister of finance, and the minister of colonial development, and selected twelve representatives to run a petition campaign to the provincial and the colonial governments.²⁸ Meanwhile, *Joseon ilbo*, a major Korean nationalist newspaper, published a series of seven thematic articles under the title, “The Issue of Dongjin River Improvement in Concern for 130,000 Peasants” in 1936,²⁹ suggesting the circumstances in which local Korean

²⁵ “Jimoto tanen-no yōbō Dongjin-gang kaishū kōji 地元多年の要望東津江改修工事 (The Tongjin River Improvement Project as a Desire of the Local People for Many Years),” *Joseon sinmun*, November 1, 1934.

²⁶ Chōsen Sōtokufu (1940), *op. cit.*, 323.

²⁷ Improvement works for the lower basin of Gobu Stream, a tributary of Dongjin River, were promoted in three stages from 1931 as a part of the “Public Works for Poverty Relief Project 窮民救済土木事業 (*Gungmin guje tomok saeop*)” (Chōsen Sōtokufu, 1937, 8). In 1935, improvement works were carried out in the upper basin of the same river. See Dongjin Nongji Gaeryang Johap 東津農地改良組合, *Dongjin Nongji Gaeryang Johap Osimnyeonsa* 東津農地改良組合五十年史 (Fifty-Year History of Dongjin Farmland Improvement Association) (Dongjin Nongji Gaeryang Johap, 1975), 331.

²⁸ “13-man nongmin gwangye-ui Dongjingang gaesu munje (6) 13만 농민관계의 동진강 개수 문제 (6) (The Issue of Dongjin River Improvement in Concern for 130,000 Peasants (6)),” *Joseon ilbo*, October 10, 1936.

²⁹ A special feature, “13-man nongmin gwangye-ui Dongjingang gaesu munje 13만 농민관계의 동진강 개수 문제,” was published in *Joseon ilbo*, from October 3 to 11, 1936.

society widely recognized the water management in the Dongjin River Basin as a serious issue. From 1937, the improvement works for Dongjin River was finally put into action, with the support of the Government-General. Considering the aforementioned case of Mangyeong River, the tactics to justify the colonial rule were being adopted in this project, too, by “resolving the contradiction of development by use of another novel development,” led by the Government-General or a local Japanese authority.

(3) Contemporary Development of Irrigation and Flood Control Issues in Honam Plain

Mangyeong River Improvement Project, which continued until 1940 since its commencement in 1925, came to a pause and was resumed in 1964, years after the liberation and the Korean War. River improvement works were actively carried out in 1976, including constructing embankments, stabilizing shorelines, or installing sluices.³⁰ As for the Dongjin River Improvement Project, which started in 1937, continued until 1944 and came to a halt, this was resumed in 1950 after the liberation. However, it was soon scaled down as the Korean War broke out, and halted again in 1953. In 1979, construction works were carried out in two tributaries of the river, namely Wonpyeong and Gobu Streams, including building embankments, stabilizing shorelines, rearranging waterways and installing sluices.³¹

In 1971, the Comprehensive Agricultural Development Plan for Okseo District was drafted, consisting of a plan to build breakwaters in the estuaries of Mangyeong and Dongjin Rivers in order to prevent flooding in the poor drainage zones in the lower basins and a reclamation plan to create new arable land at the same time.³² As a part of the reclamation project for the west coast, a plan to improve the drainage of Mangyeong and Dongjin Rivers and reclaim the estuaries was submitted under a new title, “Saemangeum District,” but was never followed up by any action.³³ Later in 1987, Roh Tae-woo, the president candidate in the ruling party, suddenly pledged

³⁰ Ministry of Construction 건설부, *Mangyeonggang hacheon jeongbi giban gyehoek* 만경강하천정비기본계획 (Basic Plans for Mangyeong River Improvement) (1976), 36-37, and 90.

³¹ Ministry of Construction 건설부, *Dongjingang hacheon jeongbi giban gyehoek* 동진강하천정비기본계획 (Basic Plans for Dongjin River Improvement) (1979), 65-73, and 158.

³² Nongnimbu 농림부 (Ministry of Agriculture) and Nongjeop Giban Gongsae 농업기반공사 (Korea Agricultural and Rural Infrastructure Corporation), *Saemangeum saeop chongnam* 새만금사업총람 (Conspectus of Saemangeum Project) (2002), 75-82.

³³ Park, Soon-Yawl, “Social Conflicts and Hegemonic Articulation on the Saemangeum Reclamation Project in South Korea,” *Development and Society* 44:1 (2015), 8. According to a local, “Sin Saemangeum Jigu 신새만금지구 (New Saemangeum District)” was a new “place name” given to this whole area from the 1930s.

to carry out the Saemangeum land reclamation project during the presidential campaign, in order to gain support in North Jeolla Province, the base region for the opposition party at the time. The reclamation works finally commenced in 1991 under Roh's regime. As widely known, however, the project met fierce opposition from groups of local residents, fishermen and environmental organizations, so the contents of the entire plan were reconsidered.³⁴ The breakwater was completed in 2010, but various lengthy debates ensued over the purpose of the reclaimed area.

There is a historical irony in the fact that a series of massive, state-led agricultural engineering and infrastructure projects was launched in the process of restoring the direct presidential election system, following the democratic movement that overthrew the authoritarian regime in 1987. Nonetheless, the power of a civil society, once activated by democratic movement, brought up the issue of environmental deterioration and the conflict of diverse local interests as the anticipated price for "development," succeeding in partially diverting the purpose of the large-scale civil-engineering projects.

Inundation and Great Floods in Imjin and Hantan River Basins

Inundation and flooding have been endemic local issues with a long history in the Imjin River Basin. Unlike the common floods in Korea which occurred in the lower basin area of a great river, under a common topographical condition such as the low-land area of Honam Plain at the estuary of Dongjin River, the case of Imjin River was particular in that it was the inland area to the north of Han River, or the mid-and upper stream area, that was prone to inundation and flood. Among the countless cases in the region, we will examine in detail the notorious three great floods—i.e. the great flood of 1925, a series of floods in 1965-1966, and another series in 1996 and 1998-1999.

(1) Flood in Imjin River Basin during the Colonial Period

Figure 4 below shows a map of the central inland region and a detailed map of Yeoncheon, published in a newspaper article reporting the flooding of the Imjin and Hantan Rivers in 1996. As will be elaborated later, there were no significant differences between 1996 and the colonial period in terms of the damage conditions such as the location, scale, and rainfall. The magnified area is the Auraji Flood-Endemic District, where the mainstream Imjin River and Hantan River merge.

Yeoncheon County has three strands of water running through the heart of the

³⁴ *Ibid*, 8-17.

downtown area—the mainstream of Imjin River from the west, its largest tributary Hantan River and Chatan Stream, a tributary of Hantan River, from the southeast—to renown the area for “splashing play” and “splashing floods.” While the origin of its history may be as ancient as the lava fields and columnar joints around Hantan River, the history of flood damage has been written in detail even in recent eras, as signified by the 1914 statistics in Table 3. Later, the great flood of 1925, also known as “the Great Flood of *Eulchuk* Year,” was recorded as the great flood that hit the entire country as well as knocking out the central inland region. Among the records at the time, one article provided an interesting description:

For three days from July 9 to 11 in *eulchuk* year (1925), and for five days from 15 to 19, a tremendous amount of heavy shower in Seoul... rainfall during this time period was 753 mm, a half of Seoul’s annual rainfall in ten days... Han River inundated due to repeated heavy rains, submerging Ichon-dong, Tutkseom, Songpa, Jamsil, Sincheon, and Pungnap-dong areas so that these areas almost disappeared ... It was thanks to this flood that the Earthen Fortification in Pungnap-dong and Amsadong Prehistoric Dwelling Site were discovered.³⁵

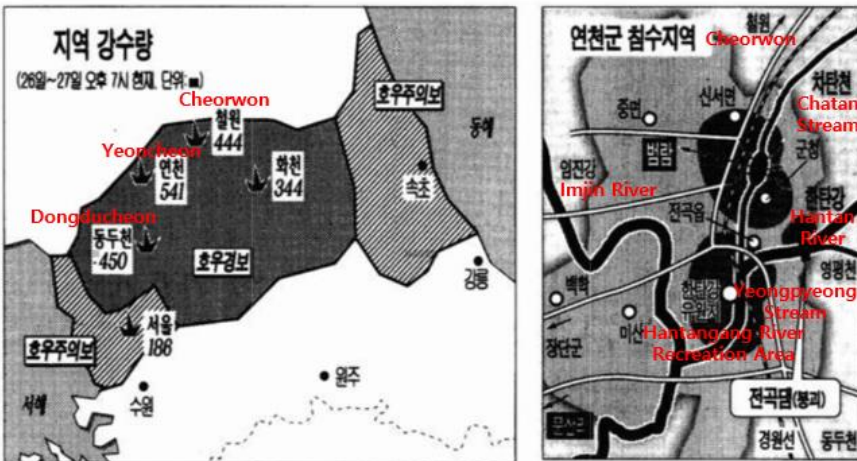


Figure 4. Rainfall in the Central Inland, July 1996, and the Flood-Endemic Districts in Yeoncheon

Source: “Eodireul bwado ‘hwangto mulbada’ 어디를 봐도 ‘황토 물바다’ (Wherever the Eyes Reach, ‘a Muddy Sheet of Water’),” *Gyeonghyang sinmun*, July 28, 1996.

³⁵ “Seoule eulchuk daehongsu, ajikdo kkaejiji anneun 753mm jipjung hou girok (The Great Flood of *Eulchuk* Year in Seoul, the Still Unsurpassed Record of 753 mm Heavy Rain),” *Jungang ilbo*, July 19, 2010.

A local description of the Great Flood of 1925 in the Imjin River basin put it as “Swelling Water in Hantan River,” with a notable focus on the case of Yeoncheon County when reporting the damage from the flood in the overall central inland region. A lamentation stands out at a glance, “Everyone in the Yeoncheon Police Station came out along with firefighters on emergency call to rescue the victims. Places that were hit even worse are Gunnae (the downtown Yeoncheon) and Yeonggeun (formerly Jeon-gok) Towns, where the water swelled in thirty-five tributaries of Hantan River and wiped out all the crops—an unprecedentedly massive flood for Yeoncheon.”³⁶ However, the reports on flood at the time sporadically reveal tendencies to comprehend the damage situations focusing on the Japanese modern facilities, or the social overhead capitals such as the railway, bridges and roads. As listed in one of the reports, there was “inundation and flood in downtown Yeoncheon, [Gyeong-Won Line] railway station and more than thirty houses nearby submerged, complete devastation of over seventy houses near Hantan River in Yeonggeun-myeon, and a bridge between Dongducheon and Jeon-gok collapsed so the service was temporarily substituted by a wooden ferry.”

The press reports about the flood in 1925 are overall the same as the aforementioned report by the Government-General. In Chapter 8 of *Chōsen kasen chōsasho* (Survey of Rivers and Streams of Joseon, 1929) on Imjin River, the case of Hantan River in 1925 is highlighted as a remarkable, “great flood that was unheard-of.” The press report was especially focused on the severe flood in the plains around the Imjin and Hantan Rivers that recurred since 1922, damage done to the irrigation facilities in Imjin-myeon and Jinnam Associations in the lower reaches, and the suspension of Gyeongui Line railway. Reservoirs and pumping stations, towards which the Japanese invested much effort in building in the 1920s, were some of the many affected infrastructures besides the railway. Although similar damage by the flood of 1925 was also reported in the following chapter on Han River, Imjin River was not treated with the same regard as Han River as it was excluded in the Government-General’s plan for water management and flood control at the end of the 1920s.³⁷

In the 1920s, *Donga ilbo* was conducting an on-site survey of irrigation associations nationwide. Among the targeted irrigation associations, those in the lower reaches of Imjin River, namely Imjin-myeon and Jinnam Irrigation Associations, were the center of attention as regards flood damage. For instance, a general critique in 1927 read, “Among more than eighty irrigation associations that are already established in Joseon, the ones worst suffering the natural disasters are two on the shores of the downstream Imjin River—Imjin-myeon Irrigation Association on the

³⁶ “Hantangang jeungsu 漢灘江 増水 (Swelling Water in Hantan River),” *Donga ilbo*, July 25, 1925.

³⁷ Chōsen Sōtokufu (1929), *op. cit.*, 355. In Chapter 11 of the same book, “Chisui keikaku 治水計劃 (Water Management Plans),” eleven major rivers starting with Han River were designated as Rivers under the Direct Management by the Government-General, but Imjin River was excluded.

left bank and Jinnam Irrigation Association on the right bank ... the management crisis today is caused by the damage from a ceaseless series of floods ever since their establishment.”³⁸

In the case of the Mangyeong River Basin (as well as that of Dongjin River), the river improvement works were carried out as a countermeasure to disasters in the districts managed by the irrigation associations. However, no similar measures were ever taken with regard to the Imjin River Basin, despite the severe damage which had occurred in its irrigation association districts. As a result, Jinnam Irrigation Association was not able to survive the financial crisis from the slump in their business and finally disbanded in 1930.³⁹ Imjim-myeon Irrigation Association also struggled in management to such an extent that it was designated as a “defective irrigation association” in 1934.⁴⁰ It seems that the irrigation associations established in narrow plains at the lower reaches of Imjin River could not become a prioritized subject of social infrastructure investment for the Government-General, who was promoting the policy to increase grain production.

(2) Contemporary Occurrences of Flood Disasters in the North of Han River

Imjin River, flowing straight across the inland region of the mid-Korean Peninsula, became an international river across North and South Korea following the armistice of Korean War in 1953, and the upstream area (Cheorwon, Gimhwa, and Pyeongyang) of its largest tributary, Hantan River, was incorporated into the North Korean

³⁸ “Jeon Joseon surijohap silsa Imjin-myeon sujo, Jinnam sujo: jeon Joseonui sujo jung cheonjae mankiro jeil, maenyeon (jaehae bokgu) gongsaro gyeongyeongnane ppajeo 全朝鮮水利組合實査 臨津面水組, 津南水組: 全朝鮮의 水組 中 天災 災기로 第一, 매년 (재해복구)공사로 경영난에 빠져 (Imjin-myeon and Jinnam Irrigation Associations in On-site Surveys for the Entire Joseon Irrigation Associations: No. 1 in Being Prone to Natural Disasters among the Irrigation Associations in the Entire Joseon, and in Financial Difficulties because of Restoration Works Every Year),” *Donga ilbo*, December 23, 1927.

³⁹ See Bak Yeonggu 박영구, “Suri johap jeongni gwajeong eseo natanan Joseon Chongdokbu gyeongje jeongchaek ui seonggyeok yeongu: Gyeonggi-do Jinam Suri Johap sarye 수리조합 정리과정에서 나타난 조선총독부 경제정책의 성격 연구: 京畿道 津南水利組合 사례 (A Study on the Characteristics of Economic Policies by the Government-General of Joseon in the Process of Closing Down Irrigation Associations: The Case of Jinnam Irrigation Association, Gyeonggi Province),” *Yeonse gyeongyeong yeongu* 28:2 (1991), 883-904.

⁴⁰ Sometimes there were subsidies or emergency low-interest loans provided depending on the degree of the “defective” financial condition of an irrigation association. See Bak Seongseop 박성섭, “1930-nyeondae junghuban Ilje ui suri johap jeongchaek eul tonghan nongchon tongje ganghwa 1930년대 중후반 일제의 수리조합 정책을 통한 농촌통제 강화 (The Japanese Reinforcement of Control over the Rural Areas through the Irrigation Association Policies in the mid-1930s),” *Han'guk dongnip undongsa yeongu* 60 (2017), 249-283.

territory above the Demilitarized Zone. Hence, the Imjin River Basin, which also became known as the “north of Han River” (*Hansu ibuk*), has been confined to a small area in the northern part of Gyeonggi Province due to the national division and Cold War (See Figure 2 mentioned above). Figure 5 below shows a map of the flood-endemic districts in northern part of Gyeonggi Province, south of the MDL (in dotted line), centered by the Hantan River basin.

Although the map in Figure 5 illustrates the conditions of the flood damage in 1996, it reflects a conceptual shift of local geography in contemporary South Korea since the division. It was since the 1990s that the river basin, close to the MDL, began to draw public attention. The mainstream of Imjin River on the left is only partially shown because of the MDL, and the water system of Hantan River in north-east—the largest tributary of Imjin River flowing parallel to Bukhan River—and other tributaries are labeled from the upper to the lower reaches, namely Namdae Stream (Gimhwa), Yeongpyeong Stream (Pocheon), Chatan Stream (Yeoncheon), Sin Stream (Yangju), and Munsan Stream (Paju). Looking at the administrative districts, it encompasses the area from Cheorwon County (including Gimhwa) in Gangwon Province to Yeoncheon and Paju Counties in Gyeonggi Province. An interesting fact is that the “waterways” of the Imjin River system—the very center of the local flood disasters—also provided sites for the “land routes” (Uiju-ro and Sambang-ro) in Joseon and “railways” in the modern period, such as Gyeongui and Gyeongwon Lines. The map is also marked with Yeoncheon Small Hydroelectric Dam (i.e. “Jeon-gok Dam”), which has since been demolished but reflects an aspect of the water system at the time.

The floods in 1965 and 1966 were recorded as the most disastrous events in the central inland Korean Peninsula since the Great Flood of *Eulchuk* Year in 1925. While the damage by the great flood of 1965 was usually concentrated in the Seoul metropolitan area where Han River inundated,⁴¹ the one in 1966 was “continually talked about by the local communities of Yeoncheon and Cheorwon as the unprecedentedly great flood following the one last year (1965).”⁴² Heavy rain that hit the central region at the time poured over 500 mm in all parts of Yeoncheon County, the

⁴¹ “Hangang beomnam maksimhan suhae: Wiheom suwi dolpa, samang 31, ijaemin 8-man-yeo myeong, 1925-nyeon irae cheoeum 漢江 氾濫莫甚한 水害: 危險水位 突破, 死亡31·罹災民8萬餘名, 1925年來 처음 (Inundation of Han River and Serious Flood Damage: The water level exceeding danger level, 31 deaths, and over 80,000 victims),” *Donga ilbo*, July 16, 1965; “Eulchuk-nyeon irae-ui chambyeon: Hangangbyeon mansinchang 乙丑年以來의 慘變: 漢江邊 滿身瘡痍 (The Catastrophe since the Eulchuk Year: Devastation throughout the Shores of Han River),” *Donga ilbo*, July 17, 1965.

⁴² “Jipjung hou ro geosen mullalli: Jungbu jibang gaok chimsu, gyotong tongsin dujeol, Yeoncheon 500mm ro choego 集中豪雨로 거센 물난리: 中部地方 家屋 침수, 交通通信 두절, 漣川 500mm로 最高 (Violent flood by heavy rain: Houses submerged, transportation and telecommunication interrupted in the central region, and Yeoncheon records the highest rainfall of 500mm),” *Donga ilbo*, July 16, 1966; “Jungbu gotgot-e mullalli 中部 곳곳에 물난리 (Flood Everywhere in Central Region),” *Gyeonghang sinmun*, July 16, 1966.

highest record in the entire country. The following Table 4 shows the damage suffered in the cities and counties of northern Gyeonggi Province during the flood of 1966. The flood-affected districts were not confined to the lowlands at the downstream Imjin River (Paju), but more concentrated in the mid- and upstream areas such as Chatan Stream, which runs through the heart of Yeoncheon-eup.



Figure 5. Flood-Endemic Districts (in the Central Inland) around Hantan River

Source: “Haneul eseo bon Cheorwon, Yeoncheon, Munsan [Paju] suhae hyeonjang 하늘에서 본 철원·연천·문산[파주] 수해현장 (Aerial View of Flood-Affected Sites in Cheorwon, Yeoncheon, and Munsan [Paju]),” *Gyeonghyang sinmun*, July 29, 1996.

In this case, what were the causes of such inundation and flood damage throughout Yeoncheon? We estimate they relate to environmental deterioration as a result of poor embankment management and imprudent development projects as well as the geographical conditions of Hantan River basin surrounded by lava fields and glacial gorges. Specifically, ① the course of Chatan Stream in Yeoncheon-eup was altered through the first-round diversion work in July 1933, straightening the channel unnaturally. ② the North Korean government pushed on with the second-round diversion work on Chatan Stream and reclamation work in the site of the old channel (today’s downtown area) from 1947 to 1949. Postponement of the Comprehensive National Territorial Development Plan (1972) after the Korean War broke out.⁴³

⁴³ According to Yi Uhyeong’s oral survey, “During three years of the large-scale river (embankment) works from 1947 to 1949, one person from every household in Yeoncheon County was mobilized for forced labor for ten days in turns and over 130,000 *pyeong* (about 429,752 m²) of the buried area created at the time now comprises Yeoncheon’s downtown area (over 370,000 *pyeong*).” See Yi Uhyeong 이우형, “Ilje singminji jeon-hu Yeoncheon ui byeonhwa wa siryeon:

Despite their intentions to prevent flooding and promote local development, they were obviously the errors of “development” committed by the Japanese and the North Koreans in the past and the current Korean government. Similar errors were repeated afterwards in Yeoncheon-eup over the improvement works of Chatan Stream, in the name of third and fourth water management (embankment) projects before another disastrous flood impacted the region in the 1990s.

Table 4. Flood Damage Condition in the northern Gyeonggi Province in 1966

Cities/Counties	Damages
Yeoncheon	▲25 victims ▲fields (48 <i>jeongbo</i>) and rice-paddies (12.8 <i>jeongbo</i>) submerged ▲buildings partially destroyed (2) or flooded (5) ▲cultivated land: (fields) 8.5 <i>jeongbo</i> swept away, 7.5 <i>jeongbo</i> buried, (rice-paddies) 16 <i>jeongbo</i> swept away, 11.1 <i>jeongbo</i> buried, estimated 3,333,000 <i>won</i> ▲950m in 4 embankments, estimated 1,575,000 <i>won</i> ▲100m in 1 railway
Yangju	▲60m in 1 road ▲4,400 m in 3 embankments ▲250m in 1 irrigation channel
Paju	▲ 224 <i>jeongbo</i> of field submerged ▲ 16 buildings flooded ▲ 512m of 2 embankments lost
Uijeongbu	▲54 house buildings flooded ▲70 victims ▲40m of 2 railways lost
Goyang	▲1 house building completely destroyed, 1 partially destroyed, 17 flooded ▲ 92 victims ▲ 301.5 <i>jeongbo</i> rice-paddies submerged
Pocheon	▲1 building completely destroyed ▲2 <i>jeongbo</i> rice-paddies buried ▲ 120m in 2 roads lost
Dongducheon	▲236 house buildings flooded in Saengyeonsa-ri and O-ri ▲24 victims in 6 households (accommodated in Dongducheon Elementary School)
Incheon	▲100m lost in 1 embankment in Gongchon-dong ▲170m lost in 3 embankments at 166, Yeonhui-dong

Source: Extracted by the authors from “Gyeonggi-do suhae sanghwang 京畿道水害狀況 (Flood Damage Condition in Gyeonggi Province),” *Donga ilbo*, July 16, 1966.
Note: Incheon was separated from Gyeonggi Province as it became a metropolitan city in July 1981.

The great flood of 1996 that struck a heavy blow on the central region vividly highlighted every problem in the Yeoncheon area which we have pointed out above. It was recorded as “the [most] monstrous flood in 30 years since the rain spell of

Yeoncheon-eup sinsigaji reul jungsim euro 일제식민지 전후 漣川の 변화와 시련: 漣川邑 新市街地를 중심으로 (Changes and Trials for Yeoncheon around the Japanese Colonial Period: Focusing on the New Town Area of Yeoncheon-eup),” presented for Agricultural Heritage Research Association Spring Workshop, 2020.

August 1966.”⁴⁴ The 50-meter-wide Chatancheon inundated to submerge Yeoncheon-eup and the lowland farms around the shores in Sinseo-myeon, Misan-myeon, and Baekhak-myeon (See the flood-endemic districts in Figure 5). In spite of some improvement works carried out in the early 1970s, such as building or raising 4- to 8-meter retaining walls, the complaints and lamentations of the local communities have persisted in reality, since “There has not been a single reinforcement work carried out for twenty years for being a minor stream.” Although an argument in defense was made at the time, “According to the Ministry of Construction and Transportation, the embankment construction work for the improvement of Imjin River commenced in 1972 with a budget of 82.8 billion won,” the progress was too sluggish to complete the work.⁴⁵ Despite twenty-five years of flood control projects since the great floods of 1965 and 1966, the Imjin and Hantan Rivers were still overlooked compared to the Han, Nakdong, and Geum Rivers that were directly managed by the state.⁴⁶

Speaking of the great flood and disaster of 1996, “The local residents of Yeoncheon and Cheorwon were frustrated that the foundations of their living, cultivated for forty years from wasteland, were swept away by two days of heavy rain. ... Please make us a town where we can settle in groups without fear.” Resentment and grievances kept following. A new type of popular sentiment was venting since the so-called democratization in 1987, “Imjin is the river that has been least invested in by the government so far for its proximity with the Military Demarcation Line (MDL). Why has the small hydroelectric dam [1985, Jeongok] been neglected, while the local residents have been asking to demolish it?”⁴⁷ The 1996 flood disaster in Yeoncheon was demanding a comprehensive measure to cover the entire water systems of

⁴⁴ “Busirhan jebang gwalli, suma bulleotda: Gunso hacheon iyu 20-yeo-nyeon gan bogang gongsa han been an hae, Chatancheon beomnam mageul su eopseonna 부실한 제방관리, 水魔 불렀다: 群小河川 이유 20여 년간 보강공사 한 번 안 해, 車灘川 댐막 막을 수 없었나 (Poor Embankment Management Invited Flood Disaster: Not a Single Reinforcement Work Has Been Done for More than 20 Years, for Being Minor Rivers. Could not the Inundation of Chatan Stream Have Been Prevented?),” *Gyeonghyang sinmun*, July 28, 1996.

⁴⁵ “Imjingang chisu saeop 25-nyeon jjae ‘jiljil’: 1972-nyeon sijakhan jebang chukjo, yesan bujok euro gongjeongnyul 72% meomuleo 임진강 치수사업 25년째 ‘질질’: 1972년 시작한 제방축조, 예산부족으로 공정률 72% 머물러 (Water Management Project for Imjin River Dragged on for 25 Years: The Embankment Construction Which Began in 1972 Remains Only 72% Done due to Budget Shortage),” *Hangyeore sinmun*, July 31, 1996.

⁴⁶ According to *Imjingang hacheon jeongbi gibon gyehoek* 臨津江河川整備基本計劃 (Basic Plans for Imjin River Improvement), 1980 (38 and 42), the river improvement works had hardly been carried out until the end of the 1960s, but the works commenced on 15,256m of the unrepaired river segments in the lower reaches of the mainstream from 1969 to 1978; 8.2 km of 22.2 km extended sections requiring embankment along Imjin and Hantan River had been completed at the time of its publication in 1980, and further plans were being established for embankment construction along the remaining 14 km.

⁴⁷ “Suhae daechaek heojeom chugung: Gingeup sojip gukhoe naemuwi pyojeong, dwitbuk daepiryeong, neutjang guho, ttakkeumhan jilchaek, Imjingang sugye gwalli Nam-Buk hyeomnyeok chokgu-do 수해대책 하점 추궁: 긴급소집 국회 내무위 표정, 뱃북 대피령, 뱃장 救護, 따끔한 질책,

the Imjin and Hantan Rivers. One of the follow-up articles went as far as to demand a more fundamental solution to the flood disasters, “A cooperation between the North and the South [Korea] is necessary for the comprehensive management of the Imjin River water system. Propose to the North to establish a joint-countermeasure organization.”⁴⁸ The fact that 63% of Imjin River system, especially the upstream section, is located in the north of the MDL, suggests the disaster of this region is not confined to the affected region but may escalate to a political and security issue which demands cooperation between the North and the South.

On August 6, 1998, 502mm of heavy rain poured down in the central inland, but the flood-preventing drainage system has not changed at all from the conditions that caused damage in Yeoncheon and Paju two years ago.⁴⁹ In terms of casualties, the 1998 statistics recorded more than five times as many as that of 1996, but there were fewer headlines in the news coverage than in 1996.⁵⁰ Although the disaster has been overall ascribed to the poor management of rivers and embankments, the vicious cycle of flooding in Yeoncheon and other areas north of Han River repeated itself.⁵¹ The main culprit of the great floods has always been the swelling river itself. Then, a self-deprecatory comment surfaced,

This flood disaster, which struck the Seoul metropolitan area in the north of Han River, is also because the local rivers, stretched like a spiderweb throughout the region, inundated all at once. ... Because of this heavy rain, 22 streams—Baekseok and Sin Streams in the upper reaches of Hantan River, and tributaries of Imjin River such as Munsan, Geumchon, and Galgok Streams—inundated to cause 176 casualties and over 200 thousand residents lost their homes. ... All of the streams that

임진강 水系관리 남북협력 촉구도 (Inquiring into the Flaws of the Flood Countermeasures: Countenance of the Home Affairs Committee at the Emergency Congress, Belated Evacuation Orders, Sluggish Relief, Harsh Rebukes, and Demands for North-South Cooperation to Manage the Water System),” *Gyeonghyang sinmun*, August 3, 1996.

⁴⁸ “Yeoncheon suhae jiyek bangmun, jeongbu bokgu daechaek chungung 연천 수해지역 방문, 정부 복구대책 추궁 (Visit to the Flood-Affected Area in Yeoncheon and Inquiry on the Government Measures for Recovery),” *Joseon ilbo*, August 3, 1996.

⁴⁹ “Sudogwon mullalli heosurhan subang chegye, amuri danghaedo ‘kkeutteok anneun’ sugye gwalli 수도권 물난리 허술한 水防체계, 아무리 당해도 ‘끄떡 않는’ 水系관리 (Flood in the Metropolitan Area, Lax Flood-Prevention System, and ‘Unbudging’ Water System Management However Suffered),” *Hangyeore sinmun*, August 7, 1998.

⁵⁰ “Gyeonggi pogu imyeong pihae 96-nyeon 16-bae 경기폭우 인명피해 96년 16배 (Heavy Rain Casualties in Gyeonggi Province 16 Times of Those in 1996),” *Donga ilbo*, August 11, 1998.

⁵¹ “Hacheon, jebang gwalli ‘wonchojeok busil,’ suhae ttae mada ‘ttaemjil’ bosu man: Imjin, Hantang jicheon gaebosu ‘mal ppun,’ susimnyeong gan ‘yesan bujok’ taryeong aksunhwan 하천·제방 관리 ‘원초적 부실,’ 수해 때마다 ‘땀질’보수만: 임진·한탄강 支川 개보수 ‘말뿐,’ 수십년간 ‘예산부족’타령 악순환 (River Embankment Management ‘Primarily Deficient,’ Only ‘Stopgap’ Repairs in Every Flood Disaster: Renovation of Imjin and Hantan Rivers are ‘Only in Words,’ in the Vicious Cycle of Reiterating “Short Budget” for Decades),” *Gyeonghyang sinmun*, August 8, 1998.

inundated during the great flood of July 1996 swelled again this time, bringing catastrophe to the residents. ... Not only is the management condition of the dams is poor, but the facility management is also unstable.

The inundation and disastrous floods swept again during the rain spell of summer, 1999—a massive flood which would normally occur once in three decades occurred continuously every other year, in 1996 and 1998. While so-called “flood-endemic border areas,” such as Yeoncheon, Paju, and Cheorwon, suffered a series of damage⁵² and the affected residents spoke of claims for the damage,⁵³ various opinions were expressed regarding the status of the damage by flood, and further views on their causes and the measures to be taken. The level of news coverage during the flood of 1999 was double, in terms of the number of headlines, of that published in 1996.

In the case of Yeoncheon County, even the recovery and prevention efforts from the flood (such as the river improvement works) were often overwhelmed by the rationale of local “development,” which continued to cause more disastrous effects to the natural environment and resources. Prompted by the flood in 1999, the government came up with a comprehensive territorial development plan to prevent flood in the region, which included the recommencement of the improvement works for Chatan Stream and demolition of the problematic Yeoncheon Dam. However, what was finally offered to the local society was another form of “development” project, namely the construction of Gunnam and Hantangang Dams.⁵⁴ The eco-friendly environmental plans desired by the local communities were ruled out every time. In case of Paju, a typical flood-endemic district located at the lower basin of the large, Imjin River, encountered the same problem [of poor management of the embankments] every time the flood came, but its fundamental solution, namely the communication and cooperation with the North Korean government, progressed no further than mere armchair discourses. Overall, places like Yeoncheon, Paju, and Cheorwon are the borderline areas created by the division of Korea, and their anticipated limits as the “frontline” rural areas remain ignored from the Comprehensive Territorial Plans.

⁵² “Yeoncheon, Paju, Cheorwon deung sangseup suhae jeopgyeong jiyek ‘teukseong dosi’ daedae-jeok gaebal 연천·파주·철원등 상습수해 접경지역 ‘특성도시’ 대대적 개발 (‘Characteristic Towns’ to be Extensively Developed in the Flood-Endemic Border Areas, such as Yeoncheon, Paju, and Cheorwon),” *Gyeonghyang sinmun*, August 6, 1999.

⁵³ “Yeoncheon pihae jumin sonbaeso 연천 피해주민 손해소 (Victim Residing in Yeoncheon Goes to Lawsuit for Damages),” *Hangyeore sinmun*, August 20, 1999.

⁵⁴ Gunnam Dam (for which the construction work began in 2006 and was completed 2013) was claimed to be the first flood-controlling dam in Korea, but there were massive protests against the project led by the local communities. Similar events occurred over the construction of Hantangang Dam (completed in 2016).

Summary and Prospect, in Place of Conclusion

Located in the rice-cultivating, East Asian monsoon region, the Korean Peninsula is an agricultural region characterized by a summer climate which is high in temperature and humidity, as well as rain spells and typhoons. Its overall climate features a regular drought pattern aligned on top of the irregular flood pattern.

This semi-dry climatic feature of the Korean Peninsula is evident in drought-recurring areas such as the Honam Plain, the major grain basket of South Korea. In addition to this climatic condition, Honam Plain was prone to partial flood damage in the lower basin of the river. This pattern of disasters was fairly usual in lowland areas, being close to the shores of tidal-affected rivers such as Dongjin and Mangyeong. During the Japanese colonial rule, the region drew attention as the representative rice-cultivating zone in Joseon, and the river improvement projects were promoted in the mid- and lower reaches of the rivers, largely due to the political influence of the major Japanese landowners who accumulated agricultural estates in this area.

However, in regard to the dualistic nature of local development, the case of Dongjin River, which saw a late, and rather defective start of the improvement work compared to that of Mangyeong River, was displaying the aspects of massive flood-endemic district in the downstream area, the central part of Honam Plain. The cases of two rivers in Honam Plain, where the irrigation projects were not preceded by flood-control works, could not lead the local community to its substantial improvement—preventing flood. Such fact, when compared with the case of Imjin and Hantan River basins in northern Gyeonggi Province—where only partial or no development projects were promoted during the colonial period—only manifests how the fast development in Honam region in reality was far from the substantial improvement embedded in the local society, despite the modern water management projects carried out in the early twentieth century. The issue of flood control was turning into “dilemmas of development,” a contradiction of development which must be resolved by another form of development.

On the other hand, the Imjin and Hantan River Basins, located in the central inland region, displays an unusual pattern of flood endemic occurring in the mid- and upstream areas (Yeoncheon and Cheorwon), which has been much conditioned by its natural and geographical environment, shaped by lava extrusion and glacial erosion.⁵⁵ The sights of disasters caused by the great floods, which penetrated the central inland regions of the Korean Peninsula [in 1925, 1966, and 1996, 1998-99], exhibited just what we examined above, but the repetition and cycle of such aberrant

⁵⁵ The average annual rainfall of the central inland region is about 1,400mm, above the national average (around 1,200mm).

flood disasters (paradoxically) leaves a lingering *déjà vu* of the flood disasters on the Korean Peninsula. Unlike the case of Honam Plain, the region had been excluded from the river improvement projects promoted during the Japanese colonial period because of the small acreage of the rice paddies. Seen from the comparative perspective with the case of Honam region, the cases of northern Gyeonggi Province, which has long been excluded from major development projects if not developed sectionally or incompletely, demonstrated how flood disaster occurring in the harsh natural topographical condition severely threatened the local communities in places like Yeoncheon and Cheorwon. Moreover, even after the liberation (1945), the Military Demarcation Line drawn following the Korean War turned these rivers into international rivers directly crossing the borders, making comprehensive management and control of the water system fundamentally impossible. “Internationalization” of Imjin and Hantan Rivers exposed the problems of “rapid compressed development,” through further delays it caused in promotion of large-scale state-funded water management projects, turning projects carried out in the area into stopgap measures. It looks like the contradiction of development, which was carried out relatively late in Dongjin River Basin only to create a vicious cycle of flood and redevelopment in the Honam Plain, reoccurring today.

Recently, an interesting alternative measure was suggested for the endemic flood damage around Imjin River. Hantan River Basin, a tributary of Imjin River, was enlisted as a UNESCO Global Geopark in July 2020. Ironically, the natural terrain of the central inland area, which has caused the flood endemic in the north of the Han River, has also been the cradle for spectacular sights, comprising a lava plateau, glacial gorges, columnar joints, reservoirs, and marshes around Hantan River. Obviously, an intention to utilize it as a tourist attraction lies behind this “project” trying to preserve the disaster-struck area intact. Yet, a pressing concern dwells within the local societies as to whether or not such “short-event tourism” will progress as an eco-friendly enterprise like the rural amenity movement or eco-museum project, which emerged in line with the conservation of natural environment.

Mangyeong and Dongjin Rivers finally saw the commencement of a massive, state-led water management project—the Saemangeum Reclamation Project—ironically initiated through the presidential election following the democratization in 1987. The project faced considerable backlash from civil society, which significantly reinforced the natural and social environmental preservationist approach. As for the Imjin and Hantan River Basins, the promotion of water management (or flood control) works has been impeded by the North-South division after the Korean War. However, the prospect for a systematic project to improve the entire water systems is a specific task which will emerge in the process of enhancing the North-South Korean exchanges. If so, a balance between the utilization of the geographical resources and the preservation of the natural resources in the Demilitarized Zone will be demanded as a lesson from the Saemangeum reclamation project.

Abstract

(1) In the East Asian region, the monsoon season characterized by a long rainy spell (jangma 장마 in Korean; baiu 梅雨 in Japanese) from early summer, and followed by typhoon 颱風 (taepung in Korean; taifū in Japanese) has caused tremendous disasters. (2) In the same way as Japan and China, Korea has also suffered from recurring floods caused by a concentration of rainfall and flood inundation during the summer seasons. Remarkably, recent floods have tended to become more severe and long-term due to recent global climate changes. (3) Historically, flood disasters on the Korean Peninsula occurring principally around the lower reaches of the great rivers have frequented the richest rice cultivation areas (Honam Plain 湖南平野) of the southern part as well as the inland area of the middle part of the Korean Peninsula. (4) This study examines the first case of the lower Dongjin-river basin as an endemic flood area in the center of Honam Plain, and the second case of the Imjin & Hant'an-river basins in the middle of the Korean Peninsula. While the first case area has been affected by intensive agricultural and water-control projects since the early Japanese colonial rule in Korea, the second case area has remained a backwater region of dry-field agriculture, long isolated from local development projects. (5) This study aims to explain the vicious cycle of local development and natural disasters in the context of the growing population (urbanization) in the twentieth century through the cases culled from Korea.

Keywords: monsoon, river basin, flood disaster, development, vicious cycle