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The cover image is of Delta of the Yellow River, China (top) and Delta of the Zambezi River, Mozambique (bottom). Landsat imagery courtesy of NASA Goddard Space Flight Center and U.S. Geological Survey.

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FEATURE

RIVER CONSERVANCY AND THE UNDETERMINED FUTURE OF THE PORT OF TIANJIN, 1888-1937

By Kan Li

Tianjin, a city on the east coast of North China, has the world's fourth largest seaport. [1] It is one of the four centrally administered municipalities of China.[2] The urban population of Tianjin is 6,825,105, ranked the fourth largest among the cities in China. Our tale about this city and its river conservancy took place before the birth of its current seaport. Across the last several decades of China's last imperial dynasty,

the Qing (1644-1912), and China's first republic (1912-1949), on the banks of a river connecting Tianjin with the sea, the most important seaport of North China in the early twentieth century was built, thanks to the consistent efforts of river conservancy. In this story, we will see that Tianjin was not destined to become a seaport. To the contrary, Tianjin's status and prospect as a seaport were often questioned.[3] This story makes



A map of Tianjin dated 1899. The Northern Grand Canal, Southern Grand Canal, Daqing River, Ziya River, and Yongding River merged into the Haihe in Tianjin. The walled city was to the southwest of the confluence.

an inquiry into how Tianjin, facing challenges from other potential seaports and doubts from various parties, avoided misfortune on the brink of ceasing to be a seaport and remained one until the mid-twentieth century.

Located 70 miles to the southeast of Beijing and 30 miles west offshore, the city of Tianjin began to form as a military fortress in the thirteenth century. The Northern Grand Canal, Southern Grand Canal, and three rivers merged into the Hai River (or Haihe, meaning “the river of the

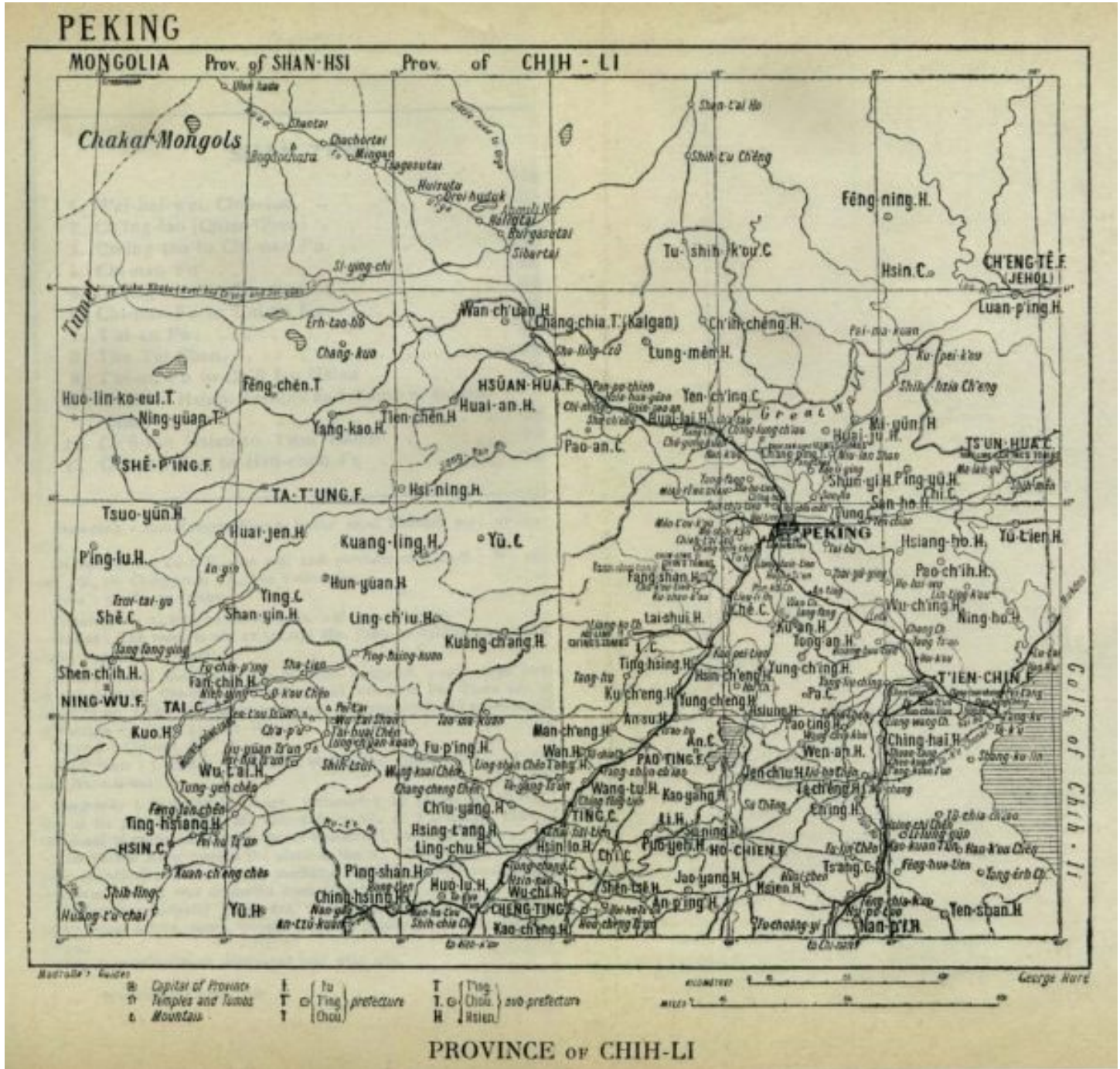


Figure 1: A map of the Zhili Province dated 1912. Tianjin was a county of Zhili Province during the Qing. Claudius Madrolle, 'Madrolle's Guide Books: Northern China, The Valley of the Blue River, Korea' (Paris: Hachette & Company, 1912).

sea” in Chinese) at Tianjin and flowed into the Bohai Sea at the Gulf of Zhili (see figure 1 and figure 2). Once the Ming emperor Zhu Di moved his capital from Nanjing to Beijing in 1420, to secure the supplies to this new capital, he ordered the dredging of the Grand Canal, the transport artery of the southern and northern reaches of the empire. Tianjin thus became the last stop of the long-distance tribute grain transport on the Grand Canal before the tribute grain could reach the capital. [4] Gradually turning into a bustling Grand Canal port, Tianjin attracted merchants who brought from the south sugar, paper, silk, porcelains, and herbs, trading for dates, pears, cotton, fur, and peanuts produced from Tianjin’s broad hinterland. Tianjin was also

the biggest salt production center of North China. Numerous saltpans spread along the seashore, producing one eighth of the total amount of salt produced in China. The circulation of all kinds of goods, especially the monopolized salt trade,[5] nurtured many rich merchants in Tianjin. They built gorgeous residential compounds and gardens, and sponsored charitable organizations, schools, and theaters. Tianjin thus prospered as a Grand Canal port and grew into a commercial city with a thriving urban culture. Starting in the 1850s, the Grand Canal was severely silted up in its sections to the north of the Yangtze River and was frequently deprived of traffic due to local disturbances. As a result, many formerly vibrant



Figure 2: A map of Tianjin dated 1899. The Northern Grand Canal, Southern Grand Canal, Daqing River, Ziya River, and Yongding River merged into the Haihe in Tianjin. The walled city was to the southwest of the confluence.

ports of the Grand Canal began to decline. Would Tianjin be one of them?

When transportation on the Grand Canal became unreliable, Tianjin had to reposition itself in the transport system to keep its prosperity. In the 1850s, steamships were introduced to China and coastal trade and sea transport grew. While being a Grand Canal port, Tianjin was also a destination for boats sailing from Fujian Province and Guangdong Province along the coast. Could Tianjin turn to the sea? The Bohai Sea is thirty miles to the east of Tianjin and was connected with Tianjin by a shallow and sinuous river, the Haihe.[6] The Haihe had been used occasionally to move tribute grain and other goods whenever the transportation on the Grand Canal was impeded, but it was not an ideal river for developing steamer transportation. Nor was the Qing government willing to allow steamship transportation at Tianjin. Having been forced into several unequal treaties by the foreign gunboats approaching China's coast from the sea, the Qing government feared that a steamer terminal so close to Beijing would put the court in danger. However, once the Anglo-French allied forces defeated the Qing troops during the Second Opium War (1856-1860), whether to open Tianjin to foreign steamers and trade was no longer a decision that the Qing government could make on its own. After a series of battles at the Dagu Fort, on the coast near Tianjin, the foreign forces made their way through Tianjin and attacked Beijing. The emperor escaped from his palace and agreed to sign the so-called "Treaty of Peking" with Britain, France, and Russia. The treaty opened Tianjin as a treaty port, ceded lands to Britain and Russia, and allowed Western Christian groups to rent or purchase land for their establishments.

Before Tianjin, fifteen ports including Guangzhou, Fuzhou, Shanghai, and Nanjing had been opened as "treaty ports" to foreign trade and residence as a result of the Western imperialist powers' forces and unequal treaties. [7] The provisions of the Treaty of Peking further

granted the Western powers the privilege of renting land permanently in the treaty ports to establish their "concessions" which they administered independently and where they enjoyed the consular jurisdiction. As soon as Tianjin became a treaty port, Britain, France, and the United States selected their parcels of land to the southeast of the Chinese walled city, along the west bank of the Haihe. Altogether these three powers occupied an area of 4,058 square meters, extending two miles along the waterfront. Later, the number of concessions in Tianjin grew to nine: Germany obtained its concession in 1895, then Japan in 1898, Russia in 1900, and Italy, Austro-Hungary, and Belgium in 1902.[8] These concessions covered 15 square kilometers and were all located along the two banks of the Haihe (see figure 3). Not until 1947 had the last three remaining concessions been returned to the Chinese government.

Since foreign interests all concentrated on the banks of the Haihe, the foreigners worked to turn the waterfront in their concessions into seaports. During the first five years of the opening of Tianjin, the number of foreign ships arriving at Tianjin increased from 111 to 209, and the goods from 26,561 tons to 60,049 tons.[9] But "the port has been a disappointment to those who expected that it would reach an importance such as to crush Shanghai and its other rivals, or at all events, to divert a considerable portion of their trade." [10] The foreign community realized the difficulty of building a high-capacity seaport on the Haihe, given the river's circuitous water course and sand-rich water. They were also concerned with the sandbar at the estuary, which only allowed ships of light draft to cross.[11]

In the meantime, foreigners and Chinese reformist officials advocated building a railroad network across China. The first officially approved railroad was built in 1881 between the Kaiping coal mine (in today's Tangshan, Hebei Province) and a small town named Xugezhuang to transport the coal. This 5.7-mile long railroad was extended

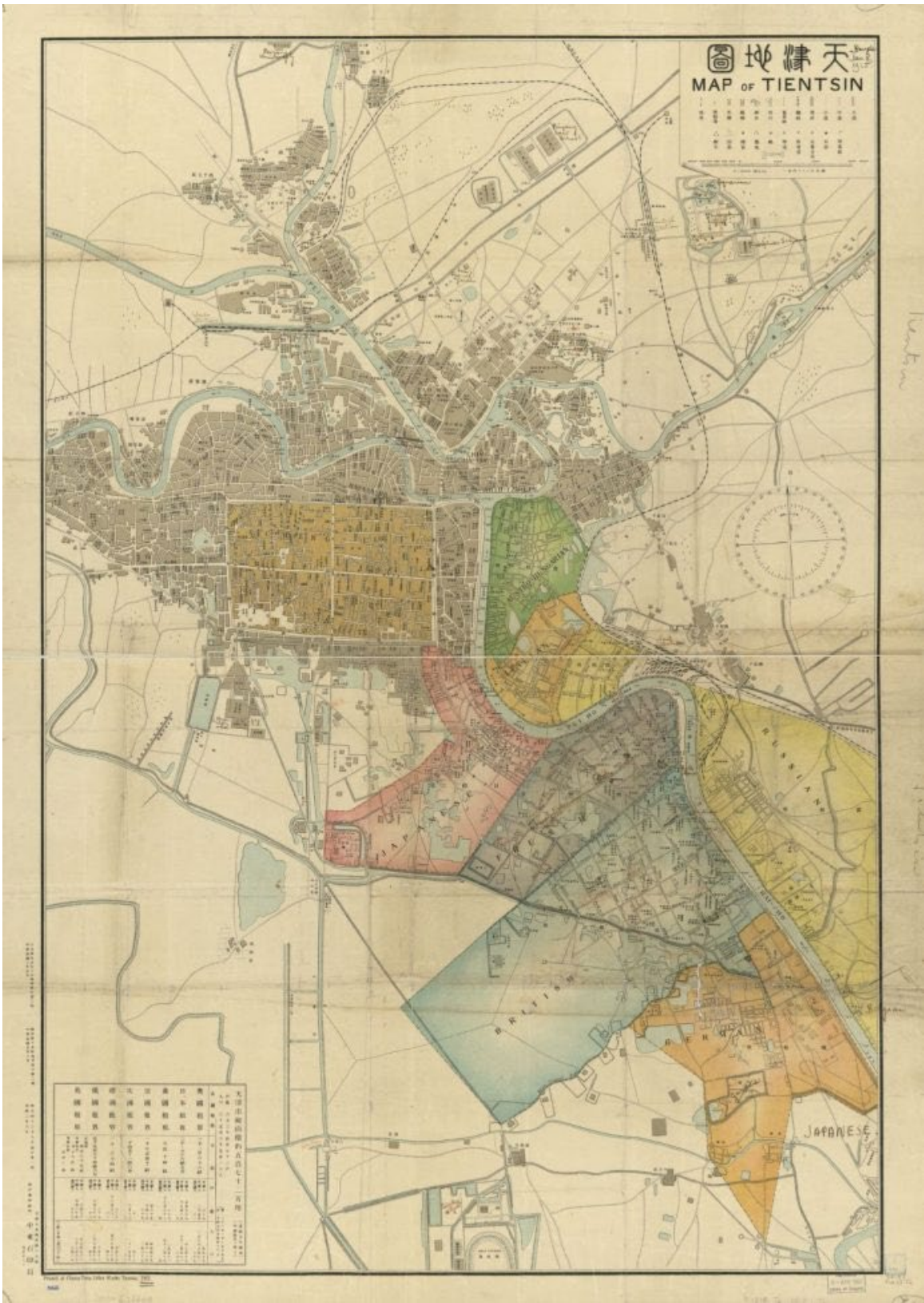


Figure 3: Map of Tianjin and Foreign Concessions, all located along the Haihe, 1912. Reproduced from an original in the collections of the Geography & Map Division, Library of Congress.

to Tanggu, a coastal town near Tianjin, and then to Tianjin in 1888 (see figure 4). The foreign community in Tianjin was at first very excited by this new move of improving the connectedness of Tianjin and was more confident than ever in Tianjin's future. However, contrary to their

expectation, because of the railroad, Tianjin's status as a seaport was soon put into debate and an option of moving the seaport from Tianjin to Tanggu was put forward.

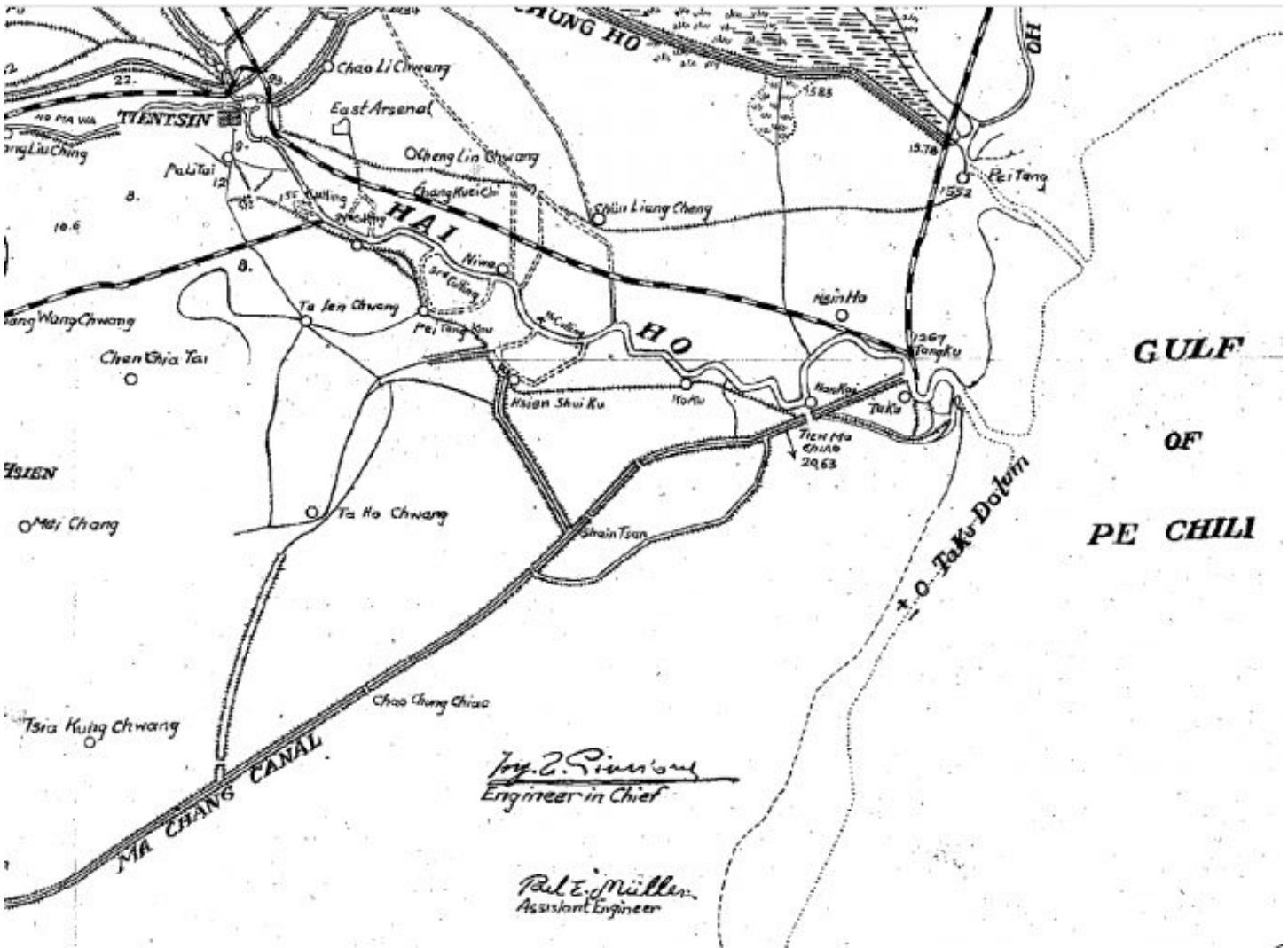


Figure 4: Partial image of map showing the location of Tanggu (spelled Tangku in the map) and the railway connecting Tanggu with Tianjin (spelled Tientsin in the map).

Tianjin or Tanggu?

Tanggu, 30 miles downriver from the port at Tianjin, sometimes served as a temporary anchorage for steamers when the Haihe was too shallow for ships to go up to Tianjin. Before railways reached Tanggu in 1888, it was only a “muddy lowland” where, except the big salterns, “no other means of living could be sought.”[12] This had been changed once the railroad reached this small town. From that time on, passengers and cargoes coming by ships would disembark at Tanggu and take the train to Tianjin, which was a faster option than navigating through the troublesome Haihe. Thus, in 1890, Tanggu became the official anchorage for steamers.[13]

Unfortunately for the seaport in the concession area, the conditions of the Haihe increasingly deteriorated at the same time. Only a few steamers of light draft could come to the port in Tianjin with the assistance of highly skilled pilots. In 1889, although the navigation of the Haihe was said to be the worst since Tianjin was opened to foreign trade in 1860, the trade still grew at a satisfactory rate, thanks to the railroad.[14] The development of the railroad now appeared more like a threat to the existence of the seaport in Tianjin.

Once the railroad between Tianjin and Tanggu was further extended toward Beijing in 1897, “Peking [Beijing] fruit is sent direct to Tangku [Tanggu] for shipment south and Peking is similarly supplied with southern fruit; and traffic generally developed so rapidly that it soon became necessary to double the line.”[15] The track was indeed doubled. In addition, warehouses and docks were built at Tanggu. This unknown fishing and salt producing town started to grow into a busy seaport. By the end of the 1890s, Tanggu could accommodate almost all the cargo from both the sea and railway. Even when not a single steamer could reach the port of Tianjin, the trade

of Tianjin (including Tianjin and Tanggu) was still rapidly growing, to the point that the value of the trade at Tianjin was second only to Shanghai. [16]

In the mid-1880s, discussions and speculations about relocating the city and port of Tianjin down the river to Tanggu began to draw the attention of newspapers. The flood in 1885 brought too much sand and mud into the Haihe and the sandbar at the river mouth. For the greater part of the summer, steamers were impeded by the silting of the Haihe in its upper reaches.[17] Shen Bao, an influential Chinese newspaper in Shanghai, reported that Tianjin was having an ongoing discussion about building a new city or relocating the city to Tanggu.[18] The following year, from April to mid-September, almost all the vessels failed to reach the foreign settlements in Tianjin and had to unload their cargoes about 14 miles below the port.[19] The *North China Herald* reported in May that “the removal of the Settlement further down the river or to Taku [Dagu][20] is not yet seriously contemplated, although talked of.”[21]

This line of thinking continued into the next decade and resulted in action. Two leading companies in Tianjin, the China Mining Company and the China Merchants Steamer Navigation Company, bought land in Tanggu and were going to build wharves and warehouses there. The reporter from the *Peking and Tientsin Times*, the most influential English newspaper in Tianjin, cautioned that the steamer companies would “follow the example,” and “make themselves independent of the river.”[22] The same newspaper also warned the vested interests at Tianjin that the day when the railways would make Tanggu a powerful competitor to Tianjin was coming and at that time, they would have to take action to preserve Tianjin as the terminus of steamers.

[23] Worse still, in 1899, the three major steamer companies at Tianjin—Butterfield & Swire, Jardine Matheson & Co., and China Merchants Steam Navigation Company—changed their policy to discourage shippers from sending their cargo from the port in Tianjin. The *North-China Herald* criticized this new policy of the steamer companies that it would “greatly influence the prosperity of this settlement.” The editor commented that this move could drive the steamer companies to discharge at Tanggu “only and always,” and it became certain that the steamer companies were trying to replace the current location of the seaport with Tanggu.[24]

With their interests concentrating on the Haihe and their decades’ efforts of building the concessions at stake, the foreign municipalities of the settlements strived to keep the seaport alive. To compete with railroad and Tanggu, they had to tackle the chronic problem: the bad navigating conditions of the Haihe. The municipalities sought for help from the diplomatic bodies who then pressured the Qing government to cooperate in the Haihe conservancy. A Sino-foreign jointly administered river institution, the Haihe Conservancy Commission, was established in 1897. The obligation of the Qing government in providing funds for this commission was written down in the protocol signed between China and the eight allied forces after the Boxer Uprising (1899-1901).[25]

Since 1897, the Haihe Conservancy Commission had constantly worked on various projects on Haihe. Five of the most difficult sections of the Haihe for steamers to pass were straightened over the years from 1901 to 1923. Numerous bends where the radius was too small were cut off and the river course was carefully trained and deepened. These “cutting” projects shortened the navigating distance from the sea to Tianjin by 17 miles (see figure 5). Before the cuttings were made, it took a sea-going steamer seven to eight hours to navigate from Dagu to Tianjin. As the river course was straightened and deepened,

the time was reduced to five hours 10 minutes in 1903 and four hours 10 minutes in 1904. In 1904, when three major cuttings had been completed, the fastest record of navigating from Dagu to Tianjin was 3.75 hours.[26] A straighter and deeper river course was not enough to make Tianjin a good seaport. At the mouth of the Haihe, a strip of sandbar laying underneath the water, the so-called Dagu Bar, obstructing large steamers from entering the Haihe. In 1905, the Commission brought up a plan of dredging a 6-foot-deep channel across the Dagu Bar, so that on an 8-foot tide, ships drawing 12 feet could pass into the Haihe.[27] The Commission achieved the goal of a 6-foot channel on the crest of the bar in April 1915.[28] To keep Tianjin open to steamers, the Haihe had been engineered into an artificial canal. Even more important in the Commission’s job was the maintenance work. The Commission bought icebreakers to keep the port on the Haihe open all year long, as well as dredgers to clear sediment deposited on the riverbed and at the Dagu Bar. Lighthouses, docks, and sluices and other infrastructure that a seaport needed were also built and maintained. To provide data for conservancy works and to archive the performance of the river, the Commission took surveys of the river and recorded the water level, height of tide, and volume of sediment regularly. Fortunately, these expensive and difficult works paid off immediately. The number of steamers that could come through the Haihe all the way to the concessions in Tianjin significantly increased. In 1905 when three cuttings had been done, 395 steamers arrived at the wharves of the foreign settlements. The figure was 333 in 1903 and 374 in 1904. The number rose to 511 in 1908 and 623 in 1909. From 1909 to 1916, each year over 600 steamers arrived at the port of Tianjin. In 1914 and 1915, the numbers even reached 814 and 768. [29] The value of trade of Tianjin also rapidly grew from 1894’s 44,277,054 Taels to 1914’s 123,639,776 Taels.[30]

Although Tanggu had better natural conditions that a seaport required and had already been

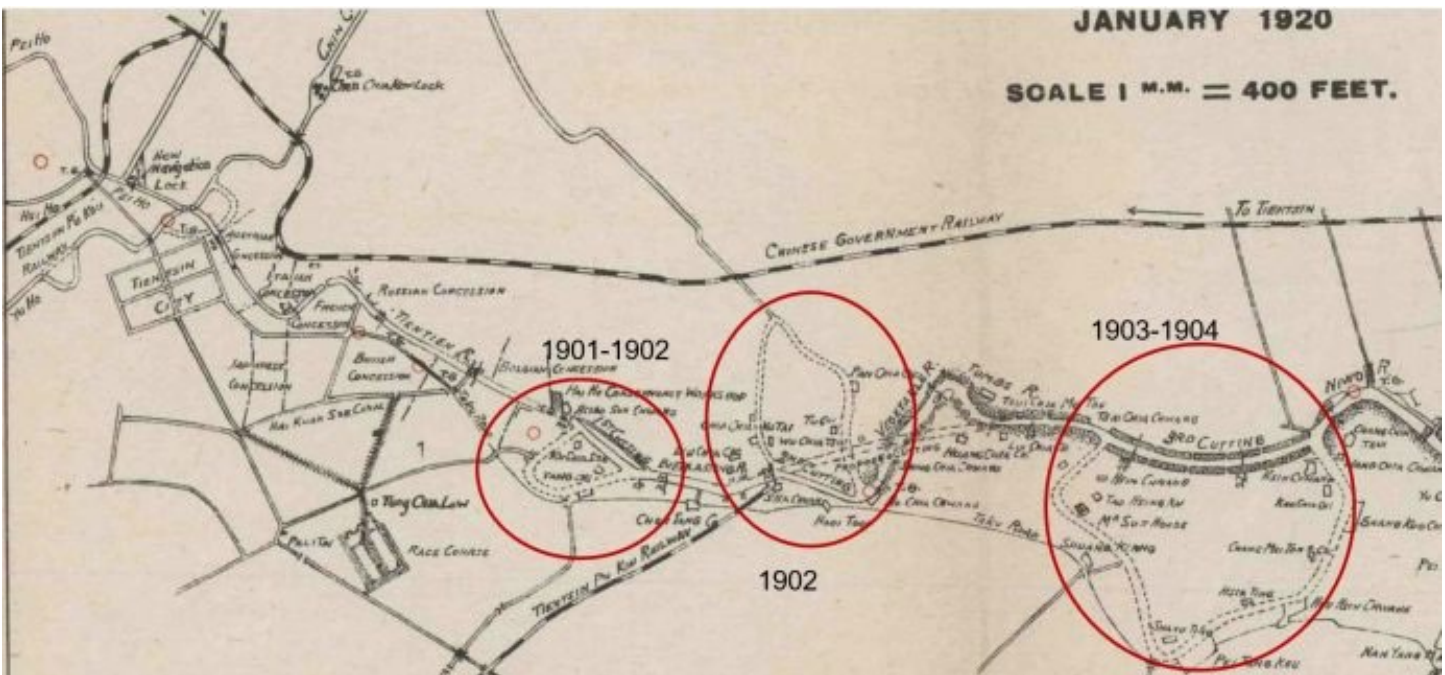
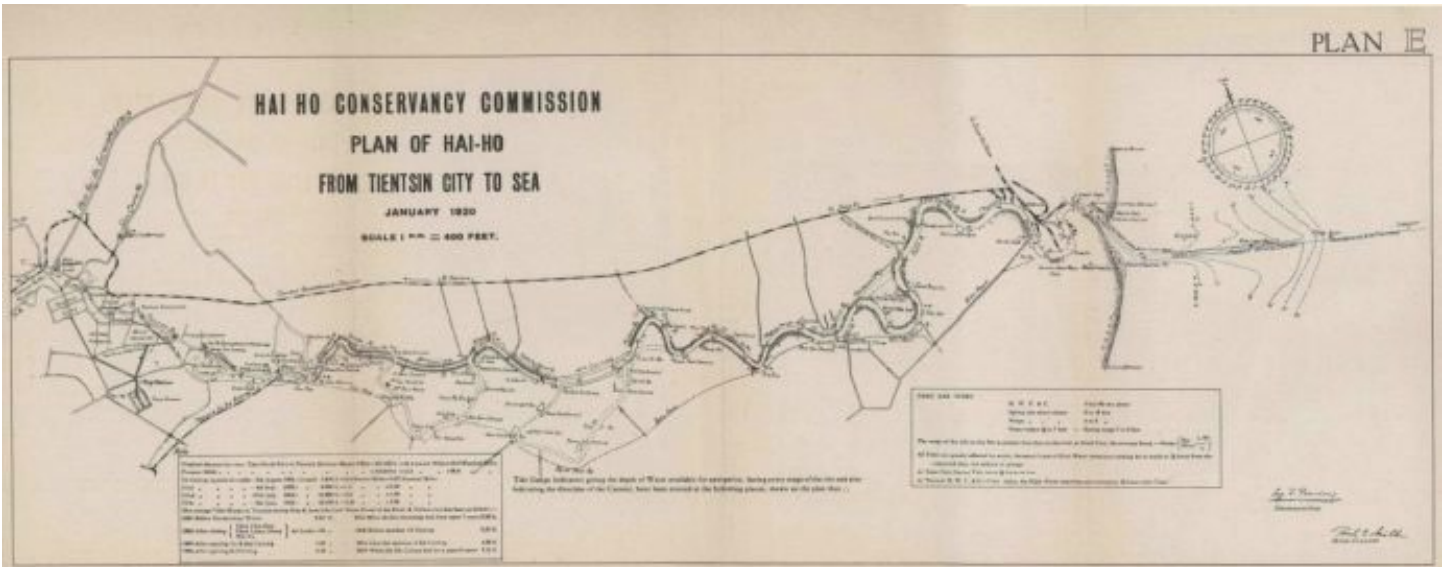


Figure 5 (a,b stacked): The “cuttings” on the Haihe (areas highlighted by author). The Haihe Conservancy Commission conducted four “cuttings” on the Haihe from 1901-1913. The fifth cutting in 1918 was designed by the Commission and was carried out by the local gentry.

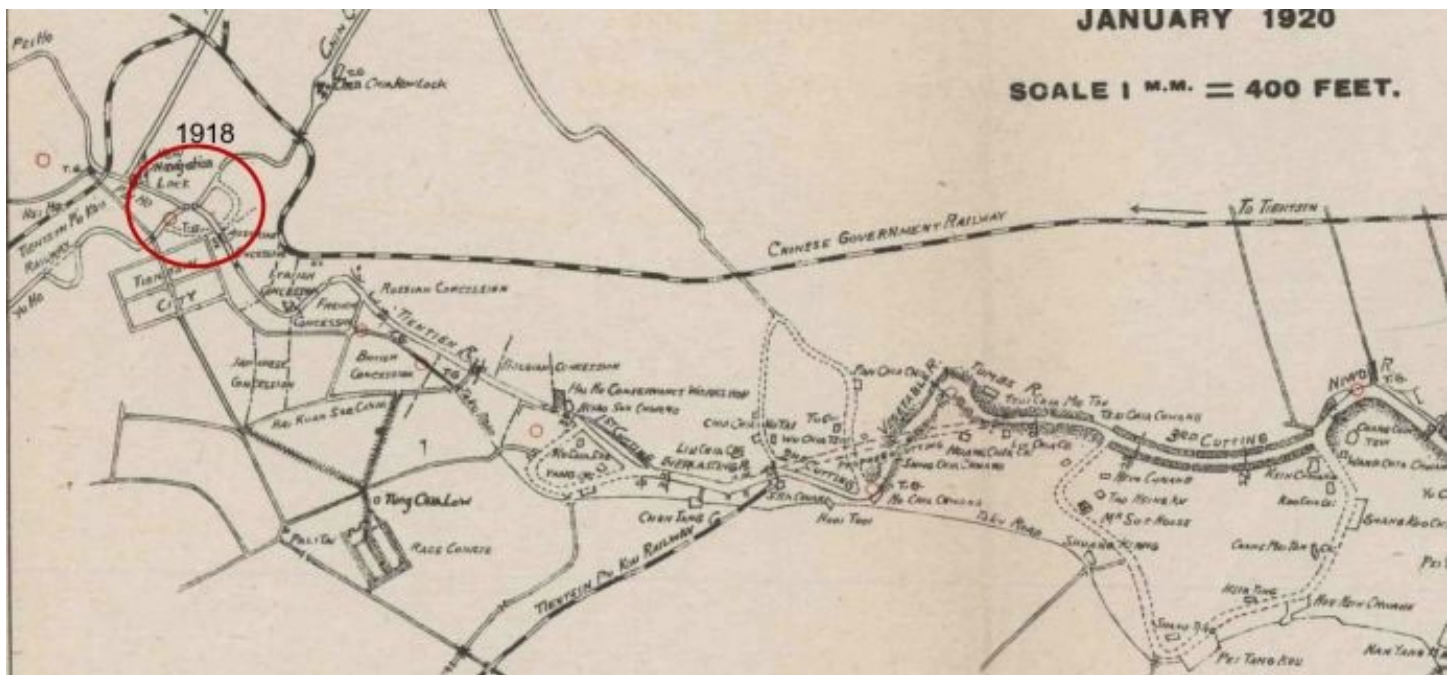
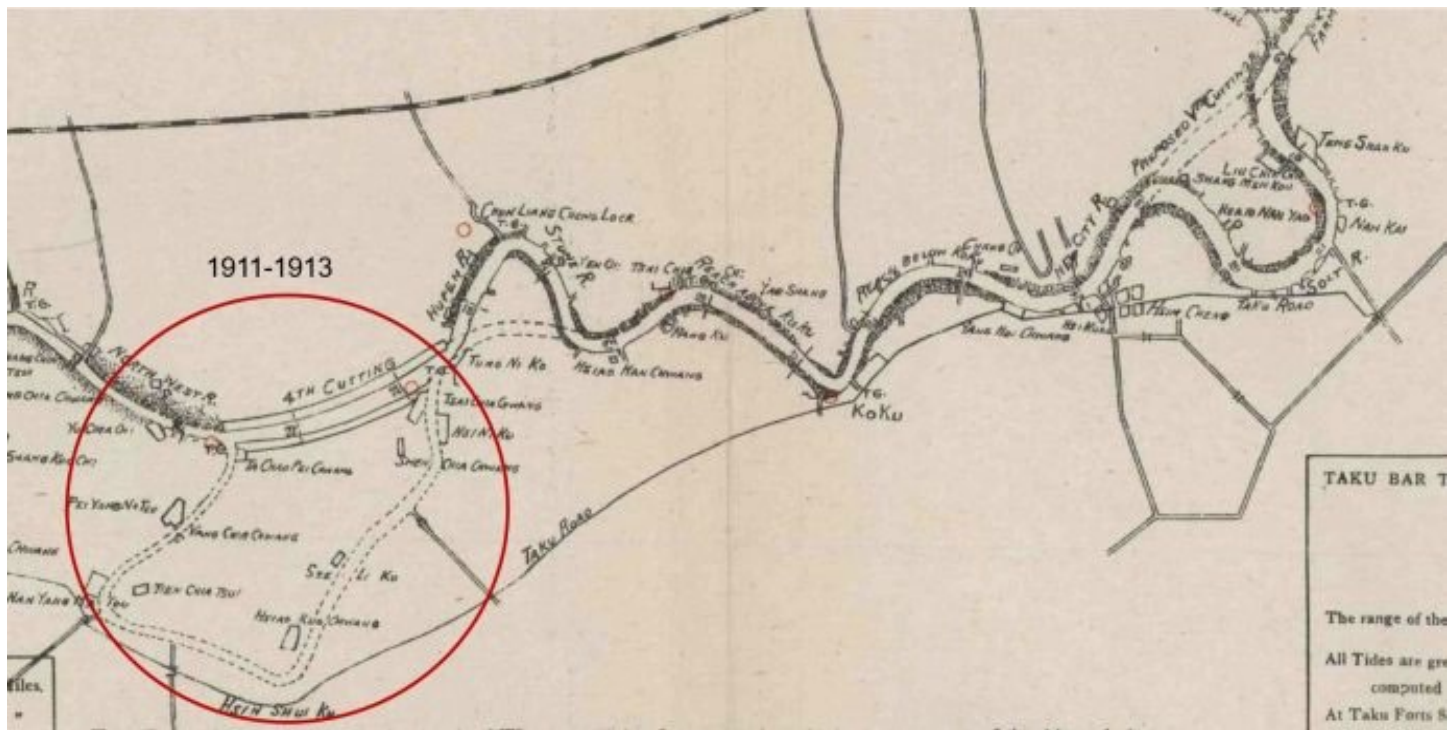


Figure 5 (c,d stacked): The “cuttings” on the Haihe (areas highlighted by author). The Haihe Conservancy Commission conducted four “cuttings” on the Haihe from 1901-1913. The fifth cutting in 1918 was designed by the Commission and was carried out by the local gentry.

facilitated into a small seaport by the end of the nineteenth century, the idea of moving the port to Tanggu was not actually carried out. Tanggu as an alternative port was not chosen in the 1890s, but the possibility of moving the primary port

of Tianjin to Tanggu never died out. Despite the tireless efforts of the conservancy of Haihe, in the 1910s, the Haihe was again silted up and Tianjin's potential of continuous thriving was questioned again.

Floods in North China

The Haihe was the only outlet to the sea for an area of 102,000 square miles, receiving five major rivers and canals in North China. The vast hinterland of the Haihe suffered from floods frequently, affecting nearly thirty-five million

people in North China.[31] Throughout the years from 1736 to 1911 that have consecutive records, the Haihe flooded every two years on average. [32] In protecting the river that it had strived to improve from the floods, the hands of the Haihe

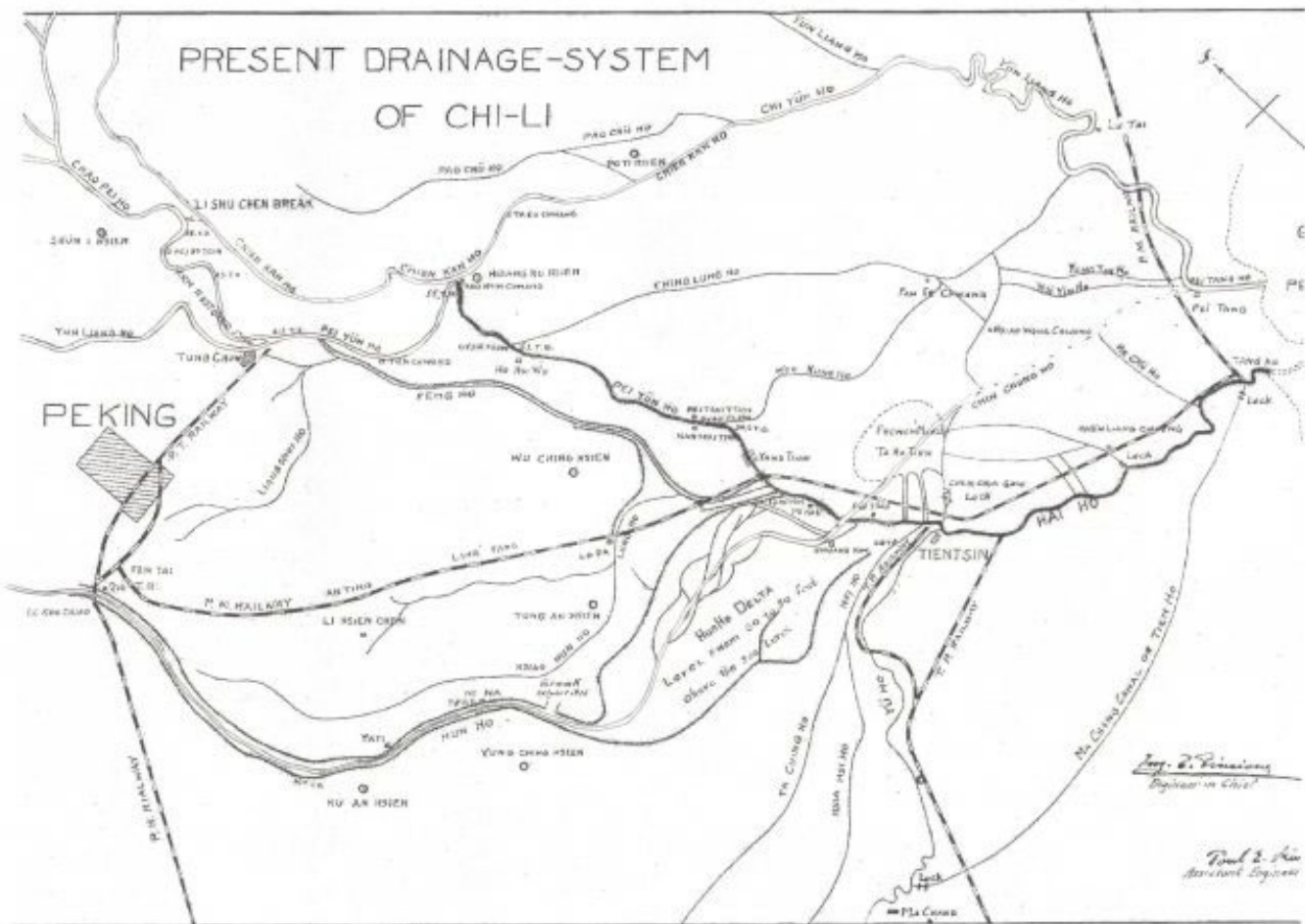


Figure 6: The short dotted line between the Jiangan River (Chien Kan Ho) and the Chaobai River (Chao Pei Ho) to the upper left of the map shows the location of the 1912 Lisuizhen break (Li Shu Chen Break) and the detour to the Chaobai River this break created. Reproduced with permission from the Archive of the Haihe Conservancy Commission housed at the Tianjin Municipal Archives, W0003-1-000210, page 455.

Conservancy Commission were tied, for its jurisdiction was restricted to the Haihe. Without a comprehensive plan involving the upper reaches of the Haihe, the outcomes of the Commission's works were vulnerable; a major flood could easily nullify the effects of years of improvement and maintenance of the river, which could put Tianjin's seaport on the brink of collapse.

The consecutive floods in 1912 and 1913 raised the awareness of the urgency of river conservancy in Zhili Province. In 1914, the Governor General of Zhili, Zhu Jiabao, invited the Tianjin Haihe Conservancy Commission to attend a meeting about conservancy of the rivers in North China. This meeting, organized by the General Governor of Zhili, provided an opportunity for the Haihe Commission to extend their influence to a larger area. At the meeting, the Haihe Commission proposed to repair a long-neglected break on the Chaobai River.

The Chaobai River was in the upstream area of Tianjin. Originally, the Chaobai River merged into the Northern Grand Canal to the north of Tianjin and contributed to the supply of fresh water of the Haihe. The dike of the Chaobai River had burst a few times. In 1904, the dike of Chaobai River broke at Lisuizhen, a village to the northeast of Beijing. Instead of flowing into the Northern Grand Canal, the water from the Chaobai River entered the Jian'gan River through the break. The break in the Chaobai River was later sealed, but was again and again ruptured. The break reappeared in 1912 after a disastrous flood, creating a gap of 1.8 miles at the dike of the Chaobai River (see figure 6). The Chaobai River again shifted course. The water level of the Northern Grand Canal thus decreased. The Haihe River was in turn affected. Not only had the water level of the Haihe dropped, the level of its river bed had also increased rapidly because of the deposit from a messy river, the Yongding River. The Yongding (meaning "forever peaceful" in Chinese) River, formerly called Wuding, meaning "never peaceful," was a river that carried

enormous amounts of sand and silt and flooded and changed course frequently. It originated from Shanxi, meandering across Hebei and Beijing, then merged into the Northern Grand Canal to the north of Tianjin. Prior to the break, due to the fresh water it received from the Chaobai River, the Northern Grand Canal had a higher water level than that of the Yongding River, so the Northern Grand Canal could restrict the inflow from the Yongding River and wash away the sand and silt that the Yongding River brought. As the water level of the Northern Grand Canal dropped in 1912, the silt that the Yongding River carried was deposited on the beds of the Northern Grand Canal and the Haihe more easily. Moreover, the delta of Yongding was 42 feet above the bed of Haihe. If the free flow of Yongding continued, as the engineer of the Haihe Conservancy Commission was concerned about, "the present level of the water of the Hai Ho [Haihe] would become that of its bed." [33]

For three years, the Northern Canal Conservancy Bureau that was responsible for this break failed to carry out any effective mends. At the meeting of 1914, in order to secure the navigation at the Tianjin port, the engineer-in-chief of the Haihe Conservancy Commission at the time, an Italian, T. Pincione, proposed to close the break on the Chaobai River and revert the river to its old course.

In the meantime, the Beiyang Government (1912-1928) established the National Conservancy Bureau in Beijing and hired a Dutch engineer Van der Veen to draw up a plan of controlling the tributaries and canals in the north and mitigating floods. Van der Veen's plan was to give the Northern Grand Canal a new course and let it directly flow into the sea without merging into the Haihe. If Van der Veen's plan was carried out, not only would the shipping and commercial interests at Tianjin be damaged, Tianjin and the surrounding villages would be short of drinking water. Pincione condemned this plan because "European experiences had proved that

despite the temporary relief, a general silting would follow if dividing up the draining water entirely.”[34] He warned the Chinese government that “the tortuousness of a river like the Pei Ho [Northern Grand Canal] exists for a reason and if the Chinese Government tries to give the River a different course, they will soon find that the river will wander here and there until it has formed again that slope which Nature, the Supreme Engineer, has assigned to it.”[35]

The Beiyang Government at Beijing approved Van der Veen’s plan, whereas the Zhili Provincial Government approved Pincione’s plan. In April 1915, the work of permanently directing the Northern Grand Canal into a separate course to join the sea started.[36] This meant that Pincione’s proposal that would divert more water into the Haihe through the Northern Grand Canal

had been ruled out. As Van der Veen’s project progressed, the navigation on the Haihe had begun to suffer from losing the clear water from the Northern Grand Canal. In March 1916, the dredging plant in the Haihe was unable to cope with the rapid silting up of the river. The water at the port was already two feet shallower than that at the mouth of the river, so the steamers entering the Haihe could not come up to Tianjin, but had to anchor at Tanggu or Baitangkou. Pincione estimated that the coming fall would witness a reduction of three to four feet in the draft of the steamers that could come up to Tianjin.[37] In May, at some sections of the Haihe, the riverbed had risen no less than eight feet as compared to what it was a year earlier.[38] If this project of giving the Northern Grand Canal a separate channel toward the sea continued, Tianjin might lose its status as a seaport.

Tianjin vs. North China

Engineering projects are embedded in their sponsors’ economic, social, and political goals. [39] With multiple active powers administering different sections of the Haihe and its tributaries, any conservancy plan would inevitably harm some interests while benefitting some others. What were the interests behind these two plans proposed by the National Conservancy Bureau and the Haihe Conservancy Commission?

The plan proposed by Van der Veen from the National Conservancy Bureau was aimed to relieve the floods that frequented the North China plain. The Haihe had been the only outlet to the sea for the five major waterways in North China. To give the Northern Grand Canal a separate channel would to some extent release the pressure of the river system of North China, especially during the summer freshets, when the rainy season coincided with the melted water. The Haihe Conservancy Commission also acknowledged in a report that the Van der

Veen proposal “would provide means, albeit temporary, of carrying off the flood waters.”[40] What this flood mitigation plan disregarded was the commercial interest of the port of Tianjin. The National Conservancy Bureau of the Beiyang Government justified their plan of diverting permanently the Northern Grand Canal by indicating that “there is no longer the necessity to transport rice” by the Grand Canal.[41] The absence of the effects of the plan on Tianjin, the largest port and commercial center of North China, in their evaluation of the proposal was worth noticing. The trade of Tianjin had grown since its opening as a treaty port. The value of exports at Tianjin had been second only to Shanghai since 1905. Its direct imports from foreign countries had also increased by more than 50 percent.[42] The trend continued in the 1910s and 1920s and the trade of cotton, straw hat braids, hides, and peanuts had surpassed Shanghai and become the number one nationwide.[43] The thriving economy of Tianjin and its active commercial society also nurtured

other aspects of urban development such as street planning, policing, public health, and education, and made Tianjin a role model for Chinese modern cities. A long-time foreign resident of Tianjin described the city in the late 1910s and early 1920s as “the most progressive town in China and an easy leader in education and social science.”[44] It was unlikely that the National Conservancy Bureau was truly ignorant of the impact that their plan would have on Tianjin’s prosperity. They either intentionally left that part out or thought that the port of Tianjin could be given up for the sake of flood prevention in North China.

The supporters of this plan demonstrated their perspective about the effects on Tianjin more frankly. The Peking Daily News, a Chinese-owned-and-run English language newspaper, praised that the Beiyang Government’s plan was “a very wise one.” The solution adopted by the National Conservancy Bureau would improve the draining situation of the entire Zhili Province as well as the interests of Tianjin as a port, because it would relieve the Haihe from the burden of receiving too large a volume of water that was way over its capacity. Somewhat paradoxically, the same article admitted that the plan would affect the navigability of the Haihe and the prosperity of Tianjin, but it urged the authorities at Tianjin to recognize that “the interests of Chihli [Zhili] are as great, if not greater, than the interests of this northern seaport,” and “the harm done by the diverting of the waters of the Pei Ho [Northern Grand Canal] into the other river is very small compared with the benefit obtained elsewhere.” The reporter criticized the Haihe Commission’s plan that it had only one object in view, which was the welfare of Tianjin, and disregarded the enormous harm that it would do to Zhili.[45] Although this article suggested that the government’s plan had considered the benefit of Tianjin, it still saw the interests of Tianjin and the Zhili Province as conflicting.

Another way to legitimize the plan that could ruin Tianjin’s future as a seaport was the pessimistic view of Tianjin that had lasted for decades since the 1890s. Van der Veen also believed that the end of Tianjin as a port was foreseeable because of the fast elevation of the river bed.[46] The Peking Daily News, while acknowledging the importance of Tianjin, considered it a port that would disappear anyway, so the current interests at the port weighed much less than the flood relief of North China. The article argued that the Haihe’s incapability of conveying the water from the five important waterways was a reason why serious dike breaks along the upper courses recurred every year. The remedy would be to enlarge the Haihe’s capacity, but the newspaper did not think it was practical to do so. Even if the capacity could be enlarged, the work would cost an enormous amount of money that no party could afford.[47] Moreover, the newspaper claimed that the Gulf of Zhili would in time cease to exist as “the deposit that the many rivers debouching into it carried along would eventually fill it up.”[48] If the Gulf would disappear in the near future, why bother preserving the seaport of Tianjin?

Whereas the National Conservancy Bureau was most concerned with the flood prevention in North China, the Haihe Conservancy Commission put the commercial interest of the seaport of Tianjin as their priority. But, unlike the National Conservancy Bureau that overlooked the devastating effects of their plan to Tianjin, the Haihe Conservancy Commission insisted that the interests of Tianjin were not contrary to those of the hinterland and that their plan would take care of both the flood prevention in North China and the shipping and commercial interests at the port of Tianjin.[49] The Commission promised that their plan would close the break of the Chaobai River and reverse the river to its old course, as well as replacing the impaired flood relief weirs of the Northern Grand Canal. In his evaluation of Van der Veen’s plan, Pincione tried to demonstrate that Tianjin’s interests were in accordance with

the Zhili Province. He reiterated his point that the National Conservancy Bureau's plan would speed up the sedimentation of the Yongding delta and promote the flooding of the eastern area of Zhili. Tianjin was no exception, but just a part of Zhili that would be equally harmed by the plan of giving the Northern Grand Canal an independent outlet. If that plan was carried out, Tianjin, along with its surrounding area of Zhili would become marshes and subject to floods from the "homeless" Yongding and Northern Grand Canal.[50]

The Haihe Conservancy Commission also responded to both the newspaper and Van der Veen's hypotheses that the Haihe and the Zhili Gulf would soon be filled up. First, no data had shown that the depth of the Gulf of Zhili was decreasing. Second, it is possible that Haihe would become unnavigable soon, but as long as the Northern Grand Canal joined the Haihe, the Canal would serve as a barrier to decrease the water level difference between the Yongding and the Haihe and to reduce the speed of water from the Yongding.[51]

In April 1915, upon hearing the news that Van der Veen's project had commenced, the Haihe Conservancy Commission immediately protested to the Governor General of Zhili, but the Governor General stated that he was not informed of this plan made by the National Conservancy Bureau. After some unfruitful communication with the Chinese government, in the end of 1915, the Haihe Commission decided to try the diplomatic channel. On behalf of the Haihe Conservancy Commission, the Diplomatic Body made representations to the Office of Foreign Affairs of the Beiyang Government

to request a meeting with the Minister of the Interior. In the representations, the Dean of the Diplomatic Body, John Newell Jordan, pointed out that the National Conservancy Bureau's plan "depriving the Hai Ho [Haihe] of the waters of Pei Yun Ho [Northern Grand Canal] and the Yun Liang Ho, is most detrimental to the welfare of the port of Tientsin and was certainly not agreed to by the Hai Ho Conservancy with whom the Chinese Government promised that the Chinese Authorities concerned should cooperate." [52] It took a long time for the Chinese government to respond. In May 1916, the Minister for Foreign Affairs, Lu Zhengxiang, agreed to arrange a meeting between the Minister of the Interior and Pincione, the engineer of the Haihe Conservancy Commission. By the time that the Ministry of the Interior approved Pincione's plan and called off the other project, the summer freshet was around the corner. Due to the time limit, a temporary solution was put forward by Pincione, which was to build a weir at Lisuizhen to partially divert the flow from the Chaobai River that could flood the surrounding villages into the old course, thus into the Northern Grand Canal and the Haihe. The old course of the Northern Grand Canal that had been filled up in Van der Veen's work was partially recovered in November 1916 and the flood relief weir at Lisuizhen was completed in May 1917.[53]

These works temporarily halted the deterioration of the navigating conditions of the Haihe caused by the break of the Chaobai and the National Conservancy Bureau's project. The seaport of Tianjin thus went on with its development, but its future remained indeterminate.

The Great Northern Port

Although the dispute between Haihe Conservancy Commission and the National Conservancy Commission from 1915 to 1917 ended up with

implementing a project in favor of Tianjin's interests, Tianjin's status as a seaport was still not secured. By the end of the 1920s, the navigation

condition of the Haihe was still disappointing. In the late nineteenth century when the Haihe conservancy works had just commenced, the river could allow ships of a draft under 11 feet to pass. The commission tried every possible way to increase the depth of water and the best result they had ever attained was 18 feet 3 inches in 1925. In 1928, the draft of ships that the river could carry dropped to 12 feet.[54]

The same year, the Nationalist Government assumed control of North China. A North China Conservancy Commission was immediately established to reorganize the former Beiyang Government's conservancy institutions, and unify the segmented jurisdictions of river conservancy from the hands of various parties. The engineer

of the North China Conservancy Commission criticized the plans drawn up by the former institutions and the Haihe Conservancy Commission, saying that they were overly influenced by foreign powers: only caring about the navigation situation of the Haihe River and the commercial interests at Tianjin but neglecting the safety of the people in North China.[55]

Another important mission of the North China Conservancy Commission was to carry out the plan of the Great Northern Port drawn up by Sun Yat-sen, the "Father of China's Republic," in 1919. In his famous essay, "International Development of China," Sun Yat-sen put the construction of a Great Northern Port at the center of the first program of this grand plan. This program aimed

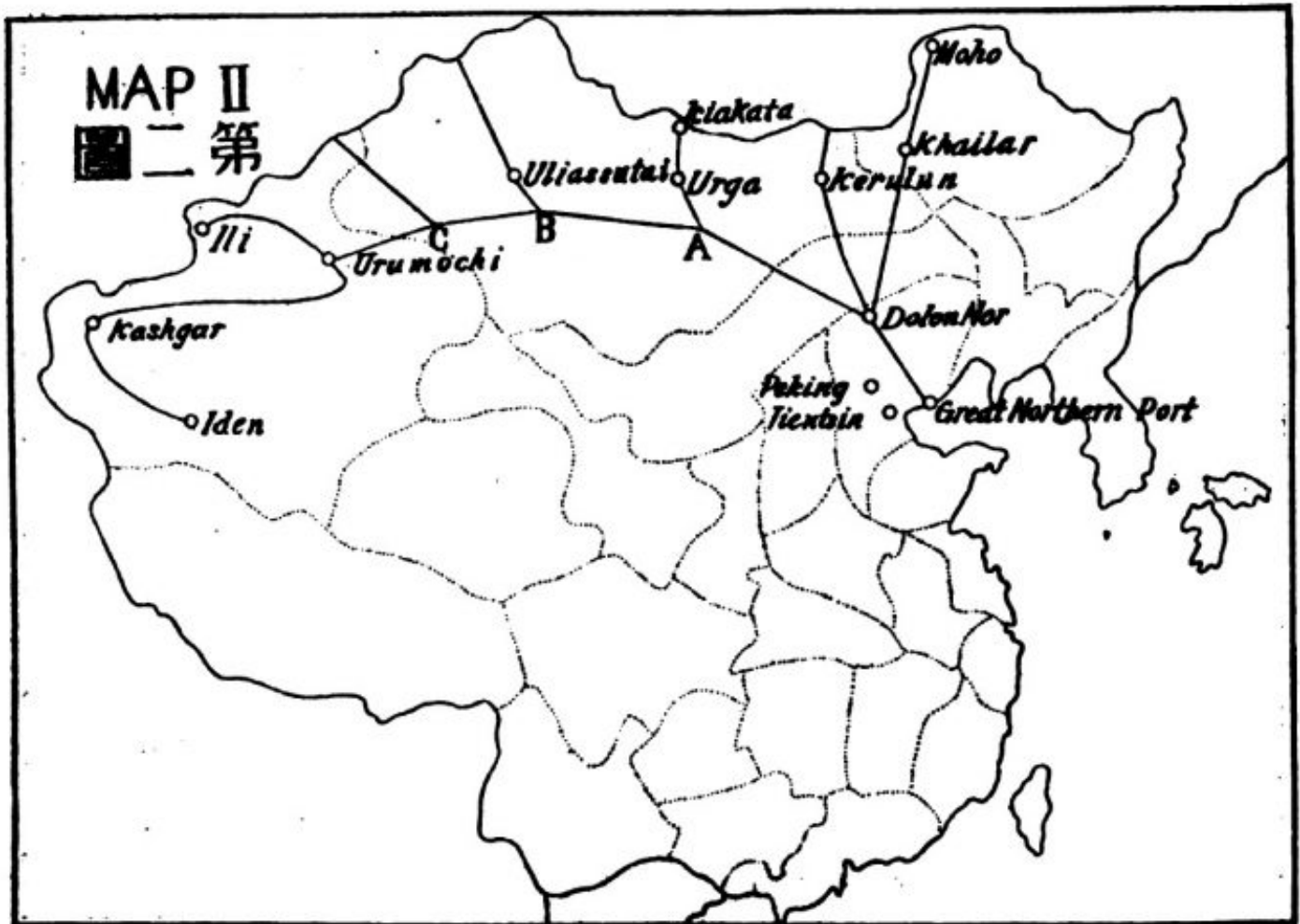


Figure 7: The location of the Great Northern Port in Sun Yat-sen's plan. Source: 'Map II in Sun Yat-sen, *The International Development of China*.' New York and London: G.P. Putnam's Sons, 1922.

to attract foreign capital to North and Central China and accelerate China's industrial development. The program included:

- The construction of a great Northern Port on the Gulf of Pechili [Bei Zhili].
- The building of a system of railways from the Great Northern port to the Northwestern extremity of China.
- The Colonization of Mongolia and Sinkiang [Xinjiang] (Chinese Turkestan).
- The construction of canals to connect the inland waterway systems of North and Central China with the Great Northern Port.
- The development of the Iron and Coal Fields in Shansi [Shanxi] and the construction of an Iron and Steel Works. [56]

In Sun's plan, the Great Northern Port would "serve as a base of operation of this International Development Scheme, as well as a connecting link of transportation and communication between China and the outer world." [57] Tianjin at the time was already the center of trade and transportation in North China, and yet Sun did not choose Tianjin, but rather proposed to build this Great Northern Port midway on the coastline between Tanggu and Qinhuangdao, at the estuary of the Daqing River [58] (see figure 7). He argued that the new site, because of its proximity to the deep water of the Gulf of Zhili, would provide an ice-free port. [59] Tianjin and Qinhuangdao were "too far from the deep water line and too near to fresh water which freezes in winter." [60] With its broad hinterland, proximity to Tianjin, and superior natural conditions, this Great Northern Port, Sun claimed, would be developed "as large as New York in a reasonable limit of time." [61] An engineer-official later revealed another reason why Sun bypassed Tianjin and Tanggu: to avoid the established western powers at the treaty port. [62]

In 1928, the North China Conservancy Commission began the preparation for this ambitious scheme. They made the budget,

arranged the funding, purchased the required materials and facilities, and organized and sent out survey teams. The North China Conservancy Commission divided the construction into three phases and expected to complete all in 50 years. Unfortunately, soon after the Japanese troops invaded Northeast China (the Mukden Incident, September 18, 1931), the project came to a de facto halt in 1932. [63]

Never finished, the Great Northern Port was like a ghost that haunted the seaport of Tianjin. In 1937, the Japanese forces occupied North China and decided to build a new seaport. Two proposals were put forward; one of them was to build the new port at the location of the Great Northern Port. The Japanese eventually decided to adopt the other plan: excavating a new port in Tanggu.

The Tanggu New Port had been partially finished by the Japanese when they were defeated in World War II in 1945. After the Nationalist Government resumed sovereignty, some Chinese engineers still advocated building the Great Northern Port on the grounds that the better natural endowment at the Daqing River estuary would save enormous money and labor in the long run. [64] The attempt to resume the construction of the Great Northern Port was soon interrupted by the civil war (1945-1949) between the Nationalist Party and the Communist Party, but a deeper navigation channel had already been excavated at the Tanggu port. After 1949, the Communist government carried on the project of building a seaport at Tanggu. It eventually accomplished the plan of making Tanggu a full-fledged seaport in 1951. The seaport in Tianjin gradually lost its functionality to Tanggu. Since 1958, the Haihe no longer received steamers from the sea, but the city of Tianjin had been expanded to absorb Tanggu – a plan that had been put forward in the late nineteenth century and later was brought up again and again but was put aside every time.

Conclusion

That Tianjin could transform into a seaport after the decline of the Grand Canal and could remain a seaport until the mid-twentieth century was largely due to the specific socio-political situation and the river conservancy projects. The existing narratives on the development of Tianjin in the late nineteenth and early twentieth centuries often attribute Tianjin's successful transition from a Grand Canal port to the largest North China seaport to its natural geography, as if Tianjin could easily turn to the sea when the Grand Canal declined given its proximity to the sea. Our story shows that it was not an easy and natural choice to build a seaport in Tianjin. Tianjin had two options in the 1880s. One option was to keep Tianjin open to steamer traffic by entirely rechanneling and constantly maintaining the Haihe; the other option was to facilitate the coastal village Tanggu as the terminal for steamers and relocate business there or expand the city significantly. With multiple foreign powers settling and investing on the banks of the Haihe, the first option was chosen. If it were not for the constant engineering works and maintenance on the Haihe and its upper streams, Tianjin would not have been able to develop into a high-capacity seaport and remain one for half a century. However, our story further shows that, although Tianjin's water landscape had been completely transformed to make it accessible to steamers, the effects of these projects did not usually last and whether Tianjin should and could be kept as a seaport was often questioned.

Connected with the sea by an artificial river, Tianjin's status as a seaport was heavily dependent on the continuous conservancy efforts on the Haihe and its tributaries. The episode in 1915 demonstrates how fragile this system of maintaining the seaport of Tianjin was. Any disruptive project such as the 1915 plan to give the Northern Grand Canal a new course could possibly end

Tianjin's lifespan as a seaport. And yet, this delicate system operated for more than forty years. Why? The answer is the heterogeneous political situation of Tianjin. At various times, as many as nine Western powers coexisted in Tianjin starting in 1860. The Qing Dynasty collapsed in 1912 and the leadership of the next regime, the Republic of China, changed hands several times. None of these powers had complete control of Tianjin and were able to convince or coerce the vested interests to give up the port in Tianjin and implement the enormous project of building a new port from scratch. In 1937, as soon as the Japanese troops took over Tianjin and eliminated the other powers, they immediately began expanding and facilitating the port of Tanggu. After taking a prolonged detour for nearly forty years, the trajectory of Tianjin's development came back to the path that had been discarded earlier. Only after examining the episodes in which Tianjin's role as a seaport was not taken for granted but was questioned, can we reconsider Tianjin's trajectory to modernization not as a linear and smooth process but full of twists and turns.

The episodes here in which Tianjin reversed its destiny several times represent the resilience and dynamism that the river generated in urban development. The Haihe was in a web of waters, extending far beyond Tianjin. The web of waters wove a broad region of North China together physically and socially. The Haihe empowered all the parties who had control of any section of the river and its tributaries to project influence by river works on other regions in this web. Thus, the interests of the regions and various powers in control were all interdependent. The Haihe also provided a space for the segmented administrations of Tianjin and its vicinity to negotiate and mediate their conflicting agendas. To successfully implement a river conservancy project, the parties that would be affected had to reach a

point of agreement. Behind the river conservancy projects were often intertwined agendas. Even if the foreigners had treaty-granted privileges in operating their concessions and intervening in the policy making of the Chinese government, when proposing a river conservancy project, they had to deliver not only their own commercial

interests in Tianjin but also the big concerns of the Chinese—the flood relief—in a larger area. The success of the seaport of Tianjin in the early twentieth century was forged by the checks and balances that were created in the conservancy issues among the various powers, Chinese and foreign, central and local.

Footnotes

[1] Statistics for 2015, by cargo volume.

[2] The so-called Zhixiashi in Chinese. the other three are Beijing, Shanghai, and Chongqing.

[3] Scholarship also suggests that Tianjin's transition from a Grand Canal port to a seaport was inevitable and the process had been smooth and out of question. See Lai Xinxia 来新夏, *Tianjin jindaishi 天津近代史* (Tianjin: Nankai daxue chubanshe, 1987); Liu Haiyan 刘海岩, *Kongjian yu shehui: jindai Tianjin chengshi de yanbian 空间与社会：近代天津城市的演变* (Tianjin: Tianjin shehuikexueyuan chubanshe, 2003); and Wang Changsong, "Jindai Haihe hedao zhili yu Tianjin gangkou kongjian zhuan yi de guocheng yanjiu" 近代海河河道治理与天津港口空间转移的过程研究 (PhD diss., Peking University, 2011).

[4] The grain transportation on the Grand Canal was especially important for the empire, for the grain from the southern provinces were a major form of land tax and contributed greatly to the coffers of the government and the court. Collected as a tribute to the court, this grain was called tribute grain.

[5] A complex and efficient salt tax extraction system had been developed since the Ming Dynasty (1368-1644). By tendering a substantial security deposit to assure their salt monopolies, only the hereditary dealers who were enrolled in the salt syndicate register would be bestowed with the right to harvest salt from their own salterns and to transport and sell it in designated districts. While most of the considerable profit of salt monopoly was absorbed by the fortune of salt merchants, the state secured its revenue by collecting the salt tax in advance plus the donations and deposits from the monopoly merchants.

[6] For maps of the Haihe, see https://dcl.umn.edu/search/show_details?search_string=tianjin&per_page=60&&page=1, https://dcl.umn.edu/search/show_details?search_string=tianjin&per_page=60&&page=4.

[7] Guangzhou, Fuzhou, Xiamen, Ningbo, Shanghai were opened in 1842 after the Opium war in the Treaty of Nanjing. After the Second Opium War, Niuzhuang, Dengzhou, Taiwan, Danshui, Dagou, Chaozhou, Qiongzhou, Nanjing, Zhenjiang, Hankou, and Jiujiang became treaty ports.

[8] The United States gave up their concession in 1896 and transferred it to the jurisdiction of the Municipal Council of the British Concession in 1902.

[9] W. M. Baker, "Report on the Trade at the Port of Tien-tsin for the Year 1865," in *Reports on the Trade at the Ports in China Open by Treaty to Foreign Trade, for the Year 1865* (Shanghai: Imperial Maritime Customs' Press, 1866), 30, Google Books.

[10] O. D. Rasmussen, *Tientsin, An Illustrated Outline History* (Tianjin: Tientsin Press, 1925), 44. The author quotes from Alexander Michie's work.

[11] Ibid., 21. "Tientsin Trade Report for the Year 1868," Tianjin Municipal Archives (hereafter TMA) W0001-1-011064.

[12] "Yubang xiangzheng" 鹬蚌相争, Shen Bao 申报, March 8, 1890. Zhongguo jindai baokan 中国近代报刊, <http://www.dhcdb.com.tw/SP/>.

[13] "Dinggu chunxun" 丁沽春汛, Shen Bao, February 16, 1890.

[14] R. S. Yorke, "Tientsin Trade Report, for the Year 1889," in *Returns of Trade and Trade Reports 1889* (Shanghai: Statistical Department of the Inspectorate General of Customs, 1890), 19, Staatsbibliothek zu Berlin.

[15] Alfred E. Hippisley, "Tientsin Trade Report, for the Year 1897," in *Returns of Trade and Trade Reports 1897* (Shanghai: Statistical Department of the Inspectorate General of Customs, 1898), 26, Staatsbibliothek zu Berlin.

[16] Ibid, 29.

[17] Gustav von Detring, "Tientsin Trade Report, for the Year 1885," in *Returns of Trade and Trade Reports 1885* (Shanghai: Statistical Department of the Inspectorate General of Customs, 1886), 19, Staatsbibliothek zu Berlin.

[18] "Jingu yan xin" 津沽雁信, *Shen Bao*, Sep. 14, 1885.

[19] *Decennial Report on the Trade, Navigation, Industries, etc., of the Ports Open to Foreign Commerce in China, and the Condition and Development of the Treaty Port Provinces, 1892-1901*, Second Issue, Vol. I (Shanghai: Statistical Department of the Inspectorate General of Customs, 1906), 554, Google Books.

[20] Further down the river from Tanggu, Dagou was on the other side of the Haihe. Before the railway reached Tanggu, as a military settlement, Dagou was where the cannons were located and was much more well-known than Tanggu. Sometimes these two place names were used interchangeably.

[21] "Outports: Peking," *The North – China Herald*, May 14, 1886, ProQuest Historical Newspapers: Chinese Newspapers Collection.

[22] *Peking and Tientsin Times*, July 24, 1897.

[23] "Tientsin a Seaport," *Peking and Tientsin Times*, April 2, 1897.

[24] "Tientsin: The Steamer Companies and Merchants," *The North – China Herald*, April 24, 1899, ProQuest Historical Newspapers: Chinese Newspapers Collection.

[25] A secret organization named Yihequan (The Righteous and Harmonious Fists) originated in Shandong and led an uprising against foreigners and foreign influence in North China. It was known as the Boxer Uprising. The Qing government hesitated to suppress the uprising until the eight allied powers (Britain, France, Germany, United States, Japan, Russia, Italy, and Austria-Hungary) attacked Beijing in 1900.

[26] W0001-1-007692, TMA, 16.

[27] *Hai-Ho Conservancy Board, 1898-1919: A Resume of Conservancy Operations on the Hai Ho and Taku Bar Compiled by Order of the Board* (Tianjin: Tientsin Press, 1920), 76.

[28] *Hai-Ho Conservancy Board, 1898-1919*, 107.

[29] Data from *Hai-Ho Conservancy Board, 1898-1919*, 22-36.

[30] Rasmussen, 301. 1 Taels equaled approximately £ 0.17 at the time.

[31] An estimate based on the data from Liang Fangzhong 梁方仲, *Zhongguo lidai hukou tiandi tianfu tongji* 中国历代户口田地田赋统计 (Shanghai: Shanghai renmin chubanshe, 1980).

[32] Shuili shuidian kexue yanjiuyuan 水利水电科学研究院, *Qingdai Haihe honglao dang'an shiliao* 清代海河洪涝档案史料 (Beijing: Zhonghuashuju, 1981), 8.

[33] W0003-1-000200, TMA, 88.

[34] W0003-1-000200, TMA, 49.

[35] W0003-1-000200, TMA, 105.

[36] W0003-1-000200, TMA, 86.

[37] W0003-1-000200, TMA, 124.

[38] W0003-1-000200, TMA, 302.

[39] For other examples of ways in which the state or Imperialist powers embedded their agendas in river engineering projects, see David Blackbourn, *The Conquest of Nature: Water, Landscape, and the Making of Modern Germany* (New York: Norton, 2006); David Pietz, *Engineering the State: The Huai River and Reconstruction in Nationalist China, 1927-1937* (New York and London: Routledge, 2002); *The Yellow River: The Problem of Water in Modern China* (Cambridge, MA: Harvard University Press, 2014); and Ma Junya 马俊亚, *Bei xisheng de jubu: Huaibei shehui shengtai bianqian yanjiu* (1680-1949) 被牺牲的局部：淮北社会生态变迁研究 (Beijing: Beijing Daxue chubanshe, 2011).

[40] W0003-1-000200, TMA, 108, dated March 11, 1916.

[41] W0003-1-000200, TMA, 108, dated March 11, 1916.

[42] Shinkoku chutongun shireibu 清国駐屯軍司令部, *Tenshinshi*天津志 [1909], trans. Hou Zhentong 侯振彤 (Tianjinshi difang shizhi bianxiu weiyuanhui zongbianji shi 天津市地方史志编修委员会总编辑室, 1986). The Chinese title in translation is *Ershi shiji chu de Tianjin gaikuang* 二十世纪初的天津概况.

[43] Fan Rusen 樊如森, “Jindai Huabei jingji dili geju de yanbian” 近代华北经济地理格局的演变, *Shixue yuekan* 史学月刊 9(2010):95-96.

[44] Wm. McLeish, *Life in a China Outport* (Tianjin: Tientsin Press, 1917), 25.

[45] “Conservancy in Chihli,” March 23, 1916, *The Peking Daily News*, newspaper clip in W0001-1-007694, TMA, 22.

[46] W0003-1-000200, TMA, 248.

[47] “Conservancy in Chihli,” March 23, 1916, *The Peking Daily News*, newspaper clip in W0001-1-007694, TMA, 22.

[48] “Chihli Conservancy,” April 1, 1916, *The Peking Daily News*, newspaper clip in W0001-1-007694, TMA, 35.

[49] W0003-1-000200, TMA, 248.

[50] W0003-1-000200, TMA, 78.

[51] W0003-1-000200, TMA, 248.

[52] W0003-1-000200, TMA, 141.

[53] W0003-1-000200, TMA, 287.

[54] “Haihe zhiben zhibiao jihua dagang海河治本治标计划大纲,” *Shuili yuekan* 水利月刊5 (1933): 4.

[55] “Hebeisheng zhi zhishui wenti” 河北省之治水问题, *Shen Bao*, August 31, 1928.

[56] Sun Yat-sen, *The International Development of China* (New York and London: G.P. Putnam’s Sons, 1922), 12-13.

[57] Sun, 13.

[58] Ibid, 14.

[59] Ibid.

[60] Ibid, 13.

[61] Ibid, 15.

[62] Li Shutian, “Beifang dagang zhi chubu jihua” 北方大港之初步计划, *Huabei shuili yuekan* 华北水利月刊 2, no.9 (1929), 122-123.

[63] “Beifang dagang gongzuo tingdun 北方大港工作的停顿,” *Shen Bao*, May 28, 1932.

[64] *Shen Bao*, October 7, 1947, and February 2, 1948.

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