Rewriting the Economic Growth History of Korea in the 1970s: Focusing on the Pollution Imports and the Shadow People of Economic Growth

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Introduction

Park Chung-hee, who came to power because of a military coup on May 16, 1961, maintained his dictatorship until his assassination on October 26, 1979. As it is widely known, he implemented economic policies that focused on promoting light industry in the 1960s and heavy and chemical industries in the 1970s, leading to the so-called “Miracle on the Han River” in a Korea that had suffered under colonial rule, division, liberation, and the Korean War. Heavy industrialization in the 1970s has been criticized for distorting the overall industrial structure and implementing a development dictatorship that resulted in the exploitation of lower-class laborers and farmers. However, it also served as an example of economic development for developing countries.1

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1 The following studies are mainly referred to for the conflicting evaluation of the heavy chemical industry policy of the Park Chung-hee regime in the 1970s. Hyung-A Kim, Korea's Development Under Park Chung Hee (London: Routledge, 2003); Kim Bo-hyun, Economic Development under the Park Chung-hee Administration (Seoul: Galmuri, 2006); Park ki-joo, Heavy Chemical Industrialization and Social Change in Korea (Seoul: National Museum of
During this time, some of Park’s supporters even referred to him as the “president of environmental protection,” applauding his implementation of policies aimed at both environmental preservation and national prosperity. Notably, his administration launched reforestation projects, enacted the Pollution Prevention Act in 1963 (years before Japan did), followed by the Environmental Conservation Act in 1977 and the Nature Conservation Charter in 1978. These initiatives laid the groundwork for defining environmental rights in the constitution in 1980. In light of these efforts, some scholars have recently offered noteworthy reinterpretations.

First, David Fedman emphasized the continuity of forest policies during the Japanese colonial period and the Park Chung-hee administration. He evaluated the afforestation project on the Korean Peninsula as a success, attributing it to the securing of vast forest resources from Southeast Asia at low prices during the Park Chung-hee administration. He argues that this achievement was not solely due to outstanding leadership, but rather because of a transnational network in Asia that facilitated the outsourcing of resources. Shin Jae-jun confirmed that the Pollution Prevention Act of 1963 was only an improvised act while introducing aid loans and was nothing more than a nominal measure. Furthermore, several researchers have also published studies linking South Korea’s economic growth to ecological problems during this period. Consequently, it was discovered that in the 1970s, Korea grappled...
pled with environmental issues in tandem with rapid economic growth. However, little attention was given to the heavy and chemical industrialization as well as pollution problems of the Park Chung-hee administration in the 1970s, notably the impact of Japan outsourcing its pollution industry to Korea during that time. Previous studies have indicated that the Japanese government actively promoted pollution exports on a national level since the 1960s, resulting in the formation of a transnational anti-pollution alliance. Furthermore, it was interesting to observe the revival of intra-Asia networks encompassing materials, knowledge, and technology in the 1970s, which originated during the Japanese Empire. This resurgence took the form of "aid" or "investment" and was interpreted in various ways. Unfortunately, the topic of pollution transfer from Japan during Korea's heavy and chemical industrialization in the 1970s did not receive much attention, despite being crucial in understanding the intricate politics of development, environment, and economic growth priorities prevalent in Korea at the time. Specifically, there have been no studies analyzing the changes


10 There is a book sketching the problem of Korean industrialization and its by-product, pollution, centering on the 1980s and 1990s, but historically, it fell short of an in-depth analysis. Norman Eder, Poisoned Prosperity: Development,
in Korean society since pollution imports were accepted. Therefore, this article aims to shift the focus from solely economic growth history and shed light on the environmental issue of "pollution import," consequently rewriting the history of this period.

This study demonstrates that the Korean government introduced various political measures against industrial pollution while developing the heavy chemical industry. Events and discourses related to this issue differed significantly in terms of quantity and quality compared to previous times. Based on Korean and Japanese newspapers, magazines, government reports, international meeting records, and the memoirs of those involved, this article investigates Korea’s heavy and chemical industrialization and pollution in the 1970s and examines how the government, media, opposition parties, and academia expanded their logic of development and environment.

The Development and Pollution of the Heavy Chemical Industry

“We have just entered the phase of heavy chemical industry development. I declare that I will make every effort to foster the heavy chemical industry in the country.” This is how Park Chung-hee an-

11 The media reported only 935 cases of chemical industrialization in the 1960s, whereas 6,000 cases were reported in the 1970s. Total search volume for ‘pollution’ on https://newslibrary.naver.com (final search date: 2023.02.22)

12 A separate thorough analysis is needed on how key concepts such as ‘environment’, ‘development’, and ‘pollution’ were accepted in Korean history. This article focuses on social history analysis and reveals that a thorough approach to the concept is omitted.
nounced Korea's heavy chemical industrialization at the New Year's press conference on January 12, 1973. This marked a policy shift from the previous focus on light industry to the heavy chemical industry. In June 1973, the government announced its specific plan, selecting and supporting steel, nonferrous metals, machinery, shipbuilding, electronics, and chemical industries as the six strategic industries. By 1981, the proportion of heavy industries had grown to 51%, achieving $1,000 per capita income and $10 billion in exports. This initiative was driven by several international factors.

One key factor was the competition with North Korea. In the late 1960s, the Park Chung-hee administration had already faced intense conflict with North Korea due to armed attacks on the Blue House and infiltration attempts in Uljin and Samcheok. Additionally, the Nixon Doctrine announced a reduction of U.S. Forces in Korea. At the same time, the mood of U.S.-China reconciliation was growing, putting the existing anti-communist ideology to the test. Park Chung-hee shifted from ideological competition to "economic competition." In his National Liberation Day address on August 15, 1970, he argued for a competition that would demonstrate which regime, democracy, or communist dictatorship, could provide better living conditions for the people.

Park Chung-hee's theory of "economic competition" was influenced by a negotiation with Japan in March 1970. The Yatsugi Plan proposed transferring Japan's heavy chemical industry pollution to the southern coastal industrial area of the Korean Peninsula, creating an integrated economic zone between Korea and Japan. Japan had experi-

16 “Korean Ambassador to Japan → Korean Foreign Minister,” 2nd General Assembly of the Korea-Japan Cooperation Committee, March 27, 1970, 1903.
enced rapid development in the 1960s and had become the world's second-largest economy by the early 1970s. However, there were also pollution incidents and resulting health issues in various parts of Japan, including Minamata disease in Kumamoto and Niigata, and Yokkaichi asthma. In response, Japan enacted laws in 1970 to regulate and eliminate pollution-related industries, with a focus on heavy chemical industries.\(^{17}\) As an ideologue of the Japanese military under Japanese colonial rule, Yatsugi Kazuo served as a political advisor to Nobusuke Kishi after the Japanese defeat and led the Korea–Japan Cooperation Committee, which was an informal negotiation meeting between Korea and Japan after normalized diplomatic relations in 1965. He planned to continue the growth of Japanese companies by relocating heavy chemical factories that were branded as pollution industries in Japan and faced various opposition and regulations in each region and the central government of Korea in the name of economic cooperation.\(^{18}\)

In response, the Korean government generally accepted the ideas of the Yatsugi plan that “Korean capital should avoid cooperation in the form of subordination to the Japanese capital,” but that Japan is in charge of capital-intensive industries and Korea is in charge of labor-intensive industries.\(^{19}\)

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18 The original text of the relevant part is as follows: “In particular, Japan is already trying to overcome the limitations of development in the future, such as steel, aluminum, oil, petrochemical, shipbuilding, electronic industry, and plastic, and should increase further efforts. I also think that I would like to study whether there is hope and the possibility for the Korean side to cooperate.” (Kazuo Yatsugi, “Korea-Japan long-term economic cooperation opinion,” *Second General Assembly of the Korea-Japan Cooperation Committee*, March 26, 1970, 1904.)

19 “The President’s Meeting Data with Japanese Members of the Korea-Japan Cooperation Committee,” *Second General Assembly of the Korea-Japan Cooperation Committee*, April 18, 1970, 197.
This was confirmed at the Korea–Japan Science and Technology Ministerial Meeting held in Tokyo on August 12, 1970, three days before Park Chung-hee announced his ‘economic competition’ theory.\textsuperscript{20} On August 23, Japan’s Ministry of Economy, Trade, and Industry announced a plan to conduct an overseas location information survey of underdeveloped Southeast Asian countries, such as Korea, Taiwan, Thailand, and Malaysia, to investigate the suitability of transferring the pollution industry “as part of economic cooperation.”\textsuperscript{21}

\textsuperscript{20} ‘原子力、公害などで日韓協力大臣会談合意,” \textit{Yomiuri Shimbun}, August 13, 1970.

\textsuperscript{21} “企業立地難 海外進出を促進,” \textit{Yomiuri Shinbun}, August, 23, 1970. The survey results were published in 1974 and 1975 in the name of the Japan Industrial Location Center.
The Park Chung-hee administration actively sought to attract the heavy chemical industry, which had become a declining industry in Japan, judging that “it is a chance to succeed only when we leave before competing Southeast Asian countries.” President Park Chung-hee visited a cement factory in June 1973 when he announced the heavy chemical industrialization, and said, “A Japanese scholar said that industrial development is impossible if we worry too much about the pollution problem.” In other words, it is better not to pay too much attention to the pollution problem for Korea’s industrial development (see Figure 1). Minister of Science and Technology Kim Ki-hyung reportedly said in a private talk with a Japanese government official, “Why don’t all Japanese pollution companies transfer to Korea?” Working-level officials enacted the Industrial Base Development Promotion Act in December 1973 to strengthen corporate attraction. They formed the heavy chemical industrial complex around the southeast coastal area proposed by Japan, Pohang specialized in steel, Onsan in nonferrous metals, Changwon in machinery, and Ulsan and Yeocheon in petrochemicals (see Figure 2). Within the site, preferential treatment was provided to companies in all aspects, including the purchase, regulation, and management of factory land.

Accordingly, around 1973, Japanese capital flowed rapidly into

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24 富山化学の公害輸出をやめさせる実行委員会 編, 公害の逃げ道を絶て!!, 1974.
25 This law greatly contributed to the rapid construction of industrial complexes, but it was evaluated as a factor in strengthening pollution in the region by suspending the effect of other laws such as the Urban Planning Act, Road Act, River Act, and Water Act (Kim Kwang-im, 50 Years of Environment in Korea (Seoul: Korea Environment Institute, 1996), 37).
Korea. The size of the Japanese investment accounting for $40,000, only 23% of Korea’s total foreign investment of $175 million between 1962 and 1970, soared to approximately $196 million in the first half of 1973 alone, accounting for 98% of the $200 million total.\textsuperscript{27} Various pollution industries such as petrochemical, copper, lead, zinc, and aluminum smelting accounted for the overwhelming amount of this capital.\textsuperscript{28} In the process, Japanese companies’ blatant export of pollution continued. Korea had already been a target area for Japanese companies to avoid pollution since the 1960s. Although not well known, Chisso, a company that caused Minamata disease, was discovered by the labor union in September 1968 when it tried to take approximately 100 tons of untreated wastewater to Busan Port, Korea, a month before the Japanese government officially recognized the cause as methylmercury compound in factory wastewater. The company explained that it was “exporting” the waste liquid as a raw material to establish an acetaldehyde manufacturing plant in Korea, but eventually abandoned this for fear of public debate.\textsuperscript{29} Since 1973, when the Park Chung-hee administration declared heavy chemical industrialization, Japanese companies’ entry into Korea to avoid pollution had become more serious. In February 1974, Toyama Chemical, an assailant who caused the so-called “third Minamata disease” by discharging mercurochrome, a toxic substance, from 1952 to 1974, announced a plan to relocate its factory to Incheon, Korea.\textsuperscript{30}

\begin{itemize}
\item \textsuperscript{27} “Japan’s Capital Entrance to Korea Surge,” \textit{Maeil Business Newspaper}, October 30, 1973.
\item \textsuperscript{28} “Japanese Capital and the Korean Economy,” \textit{Chosun Ilbo}, June 8, 1973.
\item \textsuperscript{29} 新日窒労組, ‘直ちに水俣病で団交申入れ、廃液あわや韓国に,” さいれん 1931, August 31, 1968). Regarding the relationship between Minamata disease and Korea, refer to Yang Ji-hye, “Pollution Disease and Colonization: Writing History after the Minamata Disease Incident and “Colony Joseon”,” \textit{Urban Study} 31 (2022).
\item \textsuperscript{30} “Factory Already Built 70%,” \textit{Chosun Ilbo}, February 15, 1974; The pollution export issue of Toyama Chemical and Japan Chemicals is detailed in Simon Avenell’s “Pollution Export and Victimhood” and the Korea Pollution Research
which had been criticized for causing chromium poisoning disease and the unauthorized marine landfill of chromium ore waste since the 1960s, announced plans to enter Ulsan as a joint venture with Korean capitalists. Among these companies, Toyama Chemical eventually withdrew its relocation plan after strong opposition in Japan and protests from Incheon YWCA, a Korean Christian women’s group. However, Nippon Kakoh Co., Ltd. was able to start operations in 1976 as the Ministry of Health and Social Affairs guaranteed that it would “totally manage it.” In addition to such pollution-causing factories attempting to advance in the name of technology cooperation and technology transfer, there were frequent cases of exporting urban or industrial waste from Japan to Korea in the name of recycling raw materials. In 1974, Korean and Taiwanese importers negotiated with the Tokyo Metropolitan Government to buy domestic waste left in Tokyo Bay, drawing attention. In 1977, a Japanese exporter involved with a leading Liberal Democratic Party lawmaker sent 2,700 tons of industrial and synthetic resin waste from oil refineries or chemical plants to Korean agencies, causing controversy in both countries. These Japanese exporters usually spend approximately 50,000 to 60,000 yen in Japan to treat waste. Instead, they paid approximately 20,000 yen

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Institute’s *My Land is Dying* (Seoul: Ilwolbooks, 1983), 179-185.


32 “Japan’s Toyama Chemical’s Board Meeting to Abandon Its Plan to Advance into South Korea,” *Dong-a Ilbo*, May 1, 1974.


34 “Going to Buy Japanese Waste,” *Dong-a Ilbo*, February 25, 1974. Since then, it has not been possible to confirm whether Japanese household waste was exported to Korea on a large scale.

35 In 1977, numerous articles about the incident were reported in both Korea and Japan. Representatively, the following may be referred to: “Industrial Waste Imported from Japan,” *The Kyunghyang Shinmun*, March 3, 1977; “廃油輸入、韓国飛び火,” *Yomiuri Shinmun*, March 5, 1977.
per ton to Korean agencies for transportation, unloading, and disposal, taking advantage of the low cost of waste treatment in Korea and lack of waste treatment regulations. According to a survey at the time, this waste oil was the lowest level of “bad waste oil” that could not be used as fuel.\(^1\) In 1980, it was discovered that large amounts of arsenic and heavy metal-containing minerals emitted from major Japanese smelters such as Sumitomo Metal Mining and Nihon Mining were exported to Korea as “metal raw materials.”\(^2\) The mineral was initially exported to Taiwan, but after a mass skin disease was noted among local workers in 1953, the export destination was changed to Korea from the end of 1953 and continued for approximately 30 years.\(^3\) Japanese media criticized the incident as blatant pollution export by a Japanese conglomerate to the former colonial regions of Korea and Taiwan.\(^4\)

Amid so many controversies and incidents, Korea’s heavy chemical industrialization was rapidly promoted. Consequently, Korea’s average annual economic growth rate was recorded at 9.2% during the third economic development plan (1972-1976), and the average annual export growth rate exceeded 32.7%. The domestic GDP composition ratio, which was 43.4%, 16.3%, and 40.3% in the agriculture, mining, and service industries in 1963, respectively, advanced to 16.2%, 26.4%, and 57.4% in the agriculture, mining, and service industries in 1980.

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\(^{1}\) “韓国へ廃油大量輸出,” *Asahi Shinmun*, March 1, 1977. In the end, the Korean government arrested and punished these companies, while disposing of all imported waste with the government budget, but in the process, unauthorized incineration and dumping by subcontractors caused problems. (“Industrial Waste Imported from Japan was Incinerated in Houses,” *Chosun Ilbo*, October 14, 1977; “Incineration of Industrial Waste,” *Chosun Ilbo*, December 23, 1977).

\(^{2}\) This incident was also reported in the Korean and Japanese media. Representatively, the following may be referred to: “Fake Imports of Industrial Waste,” *Chosun Ilbo*, March 20, 1980; “日本企業が有害廃棄物輸出,” *Yomiuri Shinmun*, April 16, 1980.

\(^{3}\) “ヒ素鉱さい、台湾へも,” *Asahi Shinmun*, September 8, 1980.

respectively. Pollution increased rapidly with development. In Korea, the impact of pollution was already emerging before the transition to heavy chemical industrialization. In 1968, there were reports that children in the Dongrae Industrial Complex in Busan, where textile factories were concentrated, suffered tonsil hypertrophy due to smoke, and a survey by the Korea Industrial Health Association at the end of 1968 warned of the risk of air and river pollution caused by factory waste.

In 1971, the average amount of dust aerosol in industrial complexes in Seoul, Busan, and Daegu, which were developed as light industrial zones in the 1960s, was 2.5 times higher than in Japanese cities and 3 times higher than environmental standards in New York, USA. There was also a report that coastal fish stocks would become extinct due to a sharp decrease in catches due to factory wastewater.

Since the government’s heavy industry drive was fully implemented in 1973, pollution damage was reported in earnest as a problem of heavy metal pollution.

In Ulsan Bay, where the petrochemical complex was located, cadmium, the cause of Itai-itai disease, was 2.4 times higher than the WHO water quality standard, and the air pollution concentration of the Ulsan complex was 50 times higher than that of Korea’s average.

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41 “Pollution Disease for Children,” Dong-a Ilbo, May 27, 1968.

42 Ministry of Science and Technology, Research on Pollution (Seoul: Ministry of Science and Technology, 1968), 4-5.


45 “The Result of the Water Quality Survey by the Korea Institute of Marine Science and Technology Promotion Exceeds the Standard for Cadmium Contamination Along the Coast,” The Kyunghyang Shinmun, September 25, 1974.
residential area. Geumgang River adjacent to Janghang Smelter, Gwangyang Bay adjacent to Gwangyang Steel Mill, downstream Nakdonggang River, Jinhae Bay where the fourth Fertilizer Factory was located, and Ulsan Bay where Ulsan Petrochemical Corporation was located, all had higher chemical oxygen requirements than the water quality allowed and was unsuitable for fishing ground formation.

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46 Korea Atomic Energy Research Institute, Seoul National University Graduate School of Environmental Studies, *The Conference on National Development and Human Environment in Korea* (January, 1976), 133.

47 Korea Atomic Energy Research Institute, Seoul National University Graduate
The damage from the pollution first appeared in the environment near the industrial complex. Most of the nearby orchards in the Ulsan Industrial Complex, under operation since the 1960s, had been bankrupt since 1970, and coastal seaweed fishing grounds were closed due to contamination with factory waste oil and dirt. In the vicinity of Honam Refinery in Gwangyang, seashell farms damaged by factory wastewater since 1973 filed a lawsuit, and the damage was eventually recognized by the court in 1978. Since 1975, red tide had been repeated annually off Masan and Changwon, causing great damage to the nearby aquaculture industry. As of 1978, more than 91.6% of rice farmers in major industrial complexes such as Ulsan and Yeocheon abandoned farming.

The damage did not stop at the loss of farmers and fishermen’s property rights. In 1975, deformed fish appeared in the Taehwagang


48 The discussion on pollution in the 1970s had a limitation in reporting on “property rights damage” suffered by primary industry workers such as farmers and fishermen, rather than describing the general impact on the ecosystem. In this article, the context of the time is respected and described.

49 “‘Pollution Zone’ to be Swept by Lawsuits,” *Chosun Ilbo*, June 30, 1971.

50 “14 Seashell Farms Claim 500 Million Won from Honam Oil Refinery,” *The Kyunghyang Shinmun*, May 15, 1973. The Korean government directly encouraged fishermen to cultivate the seashell farming industry to boost exports to Japan after the Korea–Japan talks in the 1960s. The conflict between Honam Oil Refinery and aquaculture fishermen is an example of the contradiction of the compressed economic growth policy during the Park Chung-hee administration. Won Joo-young, “Development and Environment in the Age of Heavy Chemical Industrialization: Focusing on the Lawsuit of Honam Oil Refinery vs. Seashell Farms” can be referred to.


River in Ulsan. Their spines were bent to one side, protruded to both sides, or the tail and flesh were tilted to one side. Fish with the same deformities were found in various parts of the country, including the Incheon Industrial Complex, Busan Sasang Industrial Complex, Janghang Smelting Plant, Gongju Leather Factory, and Yeongdeungpo Industrial Complex in Seoul. Since they were similar in shape to those found in Minamata, Japan in 1952-3, these fish were suspected of contamination of heavy metals due to factory wastewater, which the government denied.

The damage also affected the human body. In 1977, workers and nearby residents in the Ulsan Industrial Complex suffered from severe respiratory distress, headaches, coughing, and vomiting. In 1978, 234 residents in major industrial complexes such as Ulsan, Gumi, Yeosu, and Yeocheon suffered from skin diseases, eye diseases, bronchitis, and the consequences of fluoride leaks. In 1979, 200 households in the Ulsan Industrial Complex complained of skin and eye diseases, and 18% of the residents who underwent collective health checkups at the Busan Sasang Industrial Complex had kidney problems. The level of lead pollution in the air was 70 times higher than that of comfort zones.

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54 “The Deformed Fish Caught in the Taehwa River are not Contaminated with Heavy Metals,” *The Kyunghyang Shinmun*, September 25, 1975.


Development vs. Environmental Conservation:  
The Emergence of Discourses Over Development and Pollution

The public debate was divided between the vision of economic development through heavy chemical industrialization and the threat of gray pollution. There was the theory that growth comes first and the alternative discourse against it. The Park Chung-hee administration chose the former. Following President Park Chung-hee’s remarks that “It is better not to care about pollution for industrial development,” key figures in the Cabinet made remarks to the same effect. When an opposition lawmaker asked about pollution control measures at a parliamentary inquiry in September 1973, Prime Minister Kim Jong-pil said, “I think the vision of the Korean economic order cannot be without democracy, freedom or money. ... We also need to acquire two to three times the economic power of North Korea quickly to advance unification and become a liberal democracy,” stressing the need for good growth using the logic of security.59 In November 1973, Minister of Commerce and Industry Lee Nak-sun also made impressive remarks at the National Assembly. First, diseases occur, followed by the resulting medicine after death. Pollution also comes first, and pollution prevention facilities will also be established after death. Second, facilities that prevent pollution are currently expensive. There will be a time when prices fall further; thus, it has to be endured in the meantime. Finally, Japan has not completely abolished heavy industry. The Japanese are still suffering from pollution too. The gist was that “we should take into account that Japan has tolerated that much.”60 The re-

60 National Assembly Secretariat, “Minutes of the 88th National Assembly Commerce and Industry Committee Meeting No. 10,” National Assembly Secretariat, November 1, 1973, 10.
marks highlighted that Japan, which is in the ranks of advanced countries and has been highly controversial due to its focus on growth, has endured pollution damage by approaching the pollution issue as a cost issue, not as a safety or health issue.

Tae Wan-sun, minister of the Economic Planning Institute, gave a keynote speech at an international conference titled “Korea’s Future,” co-hosted by Korea University’s Asia Research Institute and the Hudson Institute, saying, “The side effects of growth will be overcome by achieving heavy chemical industrialization.”61 It was an optimism that once growth was achieved, problems could be solved through advances in technology or economic expansion.

The discussion of the theory of growth first, which was extended with the declaration of heavy chemical industrialization in 1973, was repeated by lawmakers, economists, and critics who were in line with the government. At a 1974 debate, Oh Joon-seok, a ruling party lawmaker and chairman of the National Assembly’s Health and Social Affairs Subcommittee, said that regulations would severely hit Korean industry, adding, “First of all, the priority is to make sure that we can live well and then become a welfare society,” and pointed out that it is premature to discuss pollution.62 Kang Kyung-sik, director of the Economic Planning Bureau of the Economic Planning Agency, said at an academic conference held in 1975, “We have a lot of important tasks facing us in addition to environmental issues. ... First of all, rather than improving the quality of life, we cannot help but focus on economic management centered on quantitative growth.63 In 1974, an eco-

62 “Academic Seminar on Pollution Problems,” Chung Ang University College of Medicine, April 25, 1972, 103.
nomic commentator pointed out that Korea’s pollution is not at a level of concern, but rather that there has been too much discussion on pollution, stressing that economic development should be prioritized because it can be solved by separating residential areas from factories. They all considered it ‘too early’ for pollution discussions and as a secondary issue in ‘priority’. Song Byung-rak, a researcher at the Korea Development Institute in 1974, introduced that Western academia have adopted alternative discussions with sustainability at the core by replacing the existing Gross National Product (GNP) with Gross National Pollution (GNP) and the Measure of Economic Welfare (MEW) with Net Economic Welfare (NEW). In the discussions that followed the announcement, he added that these discussions are the arguments of advanced countries and that it may be economically reasonable to leave pollution intact in underdeveloped countries. The discussion on sustainability is that “the economic level is not only for one’s generation but also for one’s descendants... it was an inequality theory that all underdeveloped countries are aware of this problem and want to stop growing.”

Nevertheless, the logic that justified the theory of growth was that it was ‘anti-communist’. When opposition lawmaker Park Yong-man pointed out at the National Assembly’s Construction Committee in May 1974 that the number of patients caused by pollution in Masan’s free export area was increasing, Park Chung-hee criticized him in

68 “Every Month, 1,500 Employees in Masan’s Free Export Area Suffer from Pollution Disease,” Dong-a Ilbo, May 8, 1974.
public the following day as a “false fact” and “consequently benefiting the communists.”

He noted that Park Yong-man’s remarks were true after checking the facts with related ministries and that such irresponsible remarks came from the “relaxation of mental armament against anti-communist ideology.” He also ensured that “the gravity of the situation facing our country now lies in the communists’ attempt to communize the Korean Peninsula by all means.”

In 1974, when heavy industrial drives just began to move in the right direction, it seemed that discussions about industrial pollution or pollution disease in Korean society were so controversial as to be considered ‘treason that benefits North Korea’.

Under this political structure, alternative discussions responding to the theory of growth first were cautiously but continuously raised. Characteristically, anti-dictatorship democratization movement forces in Korea, namely, the Resistance and Conscientious Intellectual Group or student activists, were rarely involved in discussing pollution. Thailand had a similar experience to Korea in the 1970s, namely, the Mitsubishi Group’s pollution exports, and college students led the direct solidarity movement by interacting with Japan’s anti-pollution movement group. However, in Korea, not only was the movement’s capacity concentrated on political democratization, but even intellectuals who fiercely criticized the government shared its vision for economic growth.

72 At the time of Toyama Chemical’s pollution export, members of the YWCA in Incheon launched a petition campaign against the administrative office, but this was a one-time incident.
73 Lee Sang-rok, “How Democracy has been Eroded by Developmentalism: Korean Intellectual Obsession with ‘Development’ in the 1960s,” Critical Review of History 134 (2021): 193-194. However, unlike most of these intellectuals, the
Alternative discussions on pollution occurred in the triangular structure of the media, opposition, and academia. In the 1970s, the media functioned as a major force against the government in Korean society, with journalists from 14 media companies announcing the Declaration on the Protection of Press Freedom in 1971.\textsuperscript{74} Journalists at the time had a generational commonality that they were fluent in Japanese because they were raised in Japanese colonies. Therefore, they were fully aware of Japan’s pollution situation, the seriousness of the pollution disease problem, and rapid progress in pollution countermeasures in the 1960s and 1970s through not only their visits to Japan since the normalization of diplomatic relations between Korea and Japan in 1965, but also literature data such as Japanese daily newspapers, pollution principles, and pollution lectures.\textsuperscript{75} In response, each media company consistently translated and reported the current status of civic movements in Japan against pollution exports to Korea, relaying their claim that “it is unfair to pursue prosperity at the expense of Koreans.”\textsuperscript{76}

The logic of criticizing the development of heavy chemical industrialization by Japanese capital and the problem of pollution export in this process often emerged to stimulate national sentiment. When the following study shows that the beginning of alternative imagination for pollution problems or ecological crisis discourse emerged at an abstract level, centering on progressive Christian groups. Kim Sang-hyun, “Social and Technological Imagination of Resistance Forces During the Park Chung-hee Administration,” \textit{Critical Review of History} 120 (2017): 335-336.

\textsuperscript{74} Hong Seok-ryul, Park Tae-gyun, Jeong Chang-hyeon, \textit{Korean Modern History 2} (Seoul: Purunyoksa, 2015), 189.

\textsuperscript{75} Chosun Ilbo reporter Park No-kyung published the most active anti-pollution article at the time, and was shocked to learn about Minamata disease during his visit to Japan in 1965. Since then, he has received Japanese pollution-related books from Korean scientists and Japanese reporters. (Ilsahwae, \textit{Back of Those Years: Korean Environmental History} (Seoul: Hongmunkwan, 2011), 46.

\textsuperscript{76} Many articles were published covering the situation of related rallies in Japan such as “Let’s Correct our Attitude Toward Korea,” \textit{Dong-a Ilbo}, April 29, 1974; “Chemical Pollution’ Scandal in Japan,” \textit{Dong-a Ilbo}, August 20, 1975.
Yatsugi plan was announced to the Korea–Japan Cooperation Committee in 1970, each media company warned that “Japan’s investment in Korea is an investment in pollution.” They stressed that the Korean economy could return to the Japanese colonial state before liberation. In 1974, there was also criticism that Japan transferred the pollution industry to Korea under the guise of economic cooperation, and it was an “economic invasion” and a reminder of the past “nightmare of Greater East Asia Co-Prosperity Sphere.” They also expressed that Koreans should oppose Japan’s pollution exports, showing “national pride first.”

It also continued to report various scientific research results on pollution conditions and disease issues under titles such as “Pollution, Is This Okay?” and “Pollution, Rapidly Increasing.” Meanwhile, they published articles to the effect that the Korean government’s legislation and related budgets are extremely poor, whether the Korean government can properly implement pollution regulations for Japanese companies in Korea, and that importing pollution industries will cause enormous economic damage to Japan. However, what was empha-

81 Kim Dong-ho and Jeon Taek-won, “Japan’s Pollution and the Perspective of our Land with Beautiful Scenery,” The Monthly JoongAng 66 (September 1973): 118-129.
83 The following may be referred to: “Now Time to Focus on Environmental Policy,” Chosun Ilbo, June 5, 1974; “Minutes of the 100th National Assembly Commerce and Industry Committee Meeting No. 10,” National Assembly
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sized more than anything else was that pollution was a matter of life that developed slowly and led to chronic and serious health damage.84 Britain’s smog and Japan’s Minamata disease were experiences that must be prevented in Korea, a latecomer.85

The opposition New Democratic Party also noted this point. In the 1971 presidential election, New Democratic Party candidate Kim Dae Jung strongly criticized, saying, “It is irresponsible that there is no mention of the pollution issue.” Although he was defeated by the government’s illegal election, he caused an opposition sensation in the election.86 In 1973, the New Democratic Party formed a pollution control committee separately from the government when the government’s heavy chemical industrialization policy declaration and the influx of the Japanese pollution industry began.87 In 1977, the government proposed a bill on pollution prevention and environmental protection.88 In 1978, a pollution investigation team was dispatched to each industrial complex to announce the results89 and criticized the government, saying that the government’s blind pursuit of rapid growth caused a fear of pollution diseases in 1979.90

Nevertheless, it was a group of scientific and legal scholars who continued to emphasize the alternative logic in response to the govern-

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84 “Now Time to Focus on Environmental Policy,” Chosun Ilbo, June 5, 1974.
86 Hong Seok-ryul, Park Tae-gyun, Jeong Chang-hyeon, Korean Modern History 2 (Seoul: Purunyoksa, 2015), 158.
ment’s theory of growth first in the 1970s. Many of the group’s major leaders participated in the “Conference on National Development and Human Environment in Korea,” co-hosted by the Korea Atomic Energy Research Institute and Seoul National University in December 1975, and ran a social group called the “Seoul Eco Club” since the event.\(^{91}\) As can be seen from the Appendix Table, which summarizes their histories, these scholars had something in common with the technocrats who led the Park Chung-hee administration.\(^{92}\) The technocrats who led the Park Chung-hee administration were the scientific, technological, and economic elites who directed state-led developmentalism. First, they were born in the 1920s and 1930s and were a relatively new generation with no problem with their pro-Japanese career under Japanese colonial rule. Second, immediately following the Japanese colonial rule or liberation, they stood out in the domestic academic hierarchy, which peaked at Seoul National University, and further retrained themselves in the West through scholarships and study programs for foreign aid such as the Minnesota Project and the Fulbright Scholarship Project.

Third, along with their experiences at the university, they served as public officials at various government agencies, researchers at the National Research Institute, members of a government-affiliated committee, and

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\(^{91}\) This group is detailed in Ilsahwae, *Back of Those Years: Korean Environmental History* (Seoul: Hongmunkwan, 2011) and Park Chang-geun, *Korea’s Early Visionaries of Environmental Protection* (Seoul: Soul Letter, 2013). However, given that all of these works focus on an “interview” or “memoirs” led by journalist Park Chang-geun, more in-depth and critical research on their studies and activities are needed in the future.

worked as semi-official scholars. Fourth, academic expertise formed the core of their identity, and they simultaneously took a ‘de-political’ attitude, emphasizing ability, productivity, and efficiency. In short, like other elites who led the Park Chung-hee administration, they were mainly ‘functional experts’ who were in charge of investigation, advice, and education ordered by the government based on their scientific expertise. These scholars were allowed to conduct activities on heavy chemical industrialization and pollution problems in the 1970s. They worked in the government’s hygiene-related department and investigated cases in which industrial complexes such as those in Seoul were built during the Japanese colonial period and contamination became visible early after liberation (Kwon Sook-pyo, Yoon Myung-jo, Kim Jeong-hyun, No Jae-sik). They had been interested in pollution issues since the 1970s due to their experiences studying Japanese pollution diseases such as Minamata disease (Cha Chul-hwan) and their experience in international research such as the 1972 Human Environment Declaration (No Yung-hee).

They established the Seoul National University Graduate School of Environment, Yonsei University Pollution Research Institute, and Korea University Environmental Medicine Research Institute in the late 1960s and early 1970s and led the operation. They published pollu-

93 The above four characteristics were based on Han Kyung-hee’s summary of the “Park Chung-hee Ruling Elite Network.,” Formation and Development of Korean Engineers (Seoul: Dulyoukbook, 2021), 299, 305-308.
95 Ilsahwae, Back of Those Years: Korean Environmental History (Seoul: Hongmunkwan, 2011), 60.
96 Ilsahwae, Back of Those Years: Korean Environmental History (Seoul: Hongmunkwan, 2011), 15.
97 Park Chang-geun, Korea’s Early Visionaries of Environmental Protection (Seoul: Soul Letter, 2013), 142.
tion-related introductions such as “Pollution and Countermeasures” (Kwon Sook-pyo, Seoul: Joonggyeong, 1973) and “Pollution and Disease” (Cha Chul-hwan, Seoul: Newest Medical Journal, 1974), prepared investigation reports on pollution in each region ordered by the government, and participated in many academic events related to ‘environmental pollution’ by the media and universities. They introduced new Western concepts to replace GNP-oriented economic growth indicators, warned that Korea’s pollution will enter a serious level in the future, urged people to be alert to take measures, move away from the traditional “volume-oriented thinking,” and stressed that the conservation of living conditions and resources should be considered to increase the total profit. Furthermore, they announced joint resolutions and government proposals at major events.

98 Starting with the 1968 Research on Pollution ordered by the Ministry of Science and Technology (Seoul: Ministry of Science and Technology, 1968), these scholars published many reports on pollution status by region, period, and event. More in-depth research is needed in the future on the merits and demerits of these achievements.


103 Separate attention is required for the various academic and compilation activities developed by each of them. Kwon Sook-pyo had already conducted numerous contribution and interview activities since the 1960s, and he translated and published Japanese novels on pesticide pollution in 1978. For his publication of pollution novels, see the following research: Lee Yeon-seon and
Three examples can be seen. First, the case of the Pollution Problem Academic Seminar held at Chung Ang University College of Medicine in April 1972. Participants decided on three conclusions through a comprehensive discussion: ① since pollution in developed countries such as Japan is severe, related factories should not be allowed to be established, and these facilities should not be attracted or constructed in Korea; ② the policy should be implemented importantly at a level that is equivalent to other health issues such as infectious diseases; and ③ the most urgent task is the active development of related basic surveys. Second, the case of the Project Evaluation Faculty for the Second Year (1973) of the Third Five-Year Economic Development Plan organized by the Prime Minister’s Planning and Coordination Office in June 1974. They suggested to the government that “the policy direction should be changed to putting stable growth before economic growth” and urged pollution prevention measures, noting that substances emitted from various industrial facilities are likely to pollute the environment with the development of the heavy chemical industry. Finally, the case of the Conference on National Development and Human Environment in Korea, co-hosted by the Korea Atomic Energy Research Institute, a government-affiliated research institute, and Seoul National University Graduate School of Environmental Studies, that was held from December 11 to 12, 1975. The participants resolved on five points as follows. ① Economic growth and environmental conservation are the two wheels of a cart to build a wealthy country. Development plans and environmental conservation policies are requested to be implemented as a comprehensive plan. ② It is neces-


104 “Academic Seminar on Pollution Problems,” Chung Ang University College of Medicine, April 25, 1972, 107-110.

sary to strengthen and implement national environmental policies in preparation for environmental degradation caused by industrial development. ③ A central institution should be established to unify environmental regulatory administration. ④ It is necessary to improve and strengthen environmental laws. ⑤ A research institute dedicated to environmental issues should be established.¹⁰⁶ Thus, these scholars emphasized that industrial pollution should be considered equal to economic development, and demanded surveys, measurements, education, and proposals centered on them as experts, along with systems such as regulatory laws.

**Shadow People of Economic Growth**

When it declared heavy chemical industrialization in 1973, the Park Chung-hee administration had a concrete vision of economic development and stabilization of governance. Park Chung-hee and his aides shared the confidence that all problems can be solved if the economy grows. Nevertheless, as the economic indicators increased, pollution damage in major heavy chemical industry complexes became visible beyond the mid-1970s. The media constantly pointed out Japan’s pollution exports and the government’s neglect of regulations, opposition parties organized countermeasures committees and pressured the government, and scholars presented their alternative logic to pollution through various sit-downs, interviews, and academic conferences. In response, Park Chung-hee mentioned pollution in his annual policy speech since 1976,¹⁰⁷ while announcing various related measures since

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¹⁰⁷ “Key points of President Park’s speech,” *Chosun Ilbo*, October 5, 1976; “State of the Union Conference,” *Chosun Ilbo*, January 19, 1978; “President Park’s
1977, trying to quell opposition toward the government. Accordingly, the Environmental Conservation Committee was established in 1977, and in October 1977, the “Nature Conservation Society” was declared and a national rally was held. In October 1978, Park Chung-hee declared the Charter of Conservation, and in 1979 ordered the establishment of a comprehensive pollution control and environmental agency. Park Chung-hee’s remarkable interest in pollution and the environment in the late 1970s played an important role in creating his image as the so-called President of Environmental Protection. However, if you examine the context of each point in time, the establishment of the Environmental Conservation Committee was a time of controversy over the Korean government’s regulatory vacuum due to the media’s coverage of the mass import of Japanese industrial waste. This was shortly after the opposition party proposed legislation on pollution and the environment and organized the conservation society. The Nature Conservation Charter was announced the month after the opposition party organized a pollution investigation team to conduct on-site investigations of each industrial complex and highlight the seriousness of pollution. Right after skin and eye diseases were reported at industrial complexes in Ulsan and Busan, and hexavalent chromium was detected in drinking water in Ulsan, Park Chung-hee


113 Since it is mentioned in each of the above newspaper articles, the source quotation is omitted.
ordered comprehensive pollution measures and the establishment of the Environment Agency. All measures were post-measures, and even they were nothing more than control mobilization organization or organization of events disguised as environmental measures, such as the expansion of expert committees, campaigns, and declaration announcements.

During the Park Chung-hee administration, there was a significant increase in pollution in the industrial complex due to poorly disguised environmental measures. In addition to the case of Onsan, in Ulsan, where pollution damage was frequent in the late 1970s, discussions on the migration of 37,000 residents began in 1981, and large-scale relocation was promoted in three stages from 1986. See the following: Gwak Kyung-sang, “A Study on the Industrialization and Urban Planning of Ulsan (1945-the 1970s)” (PhD diss., Yonsei University, 2020), 178.
Industrial Complex, which focused on nonferrous metal smelting, a highly polluting industry. The site was chosen solely based on the assumption that smoke and wastewater would disperse easily over the sea, without considering any fundamental pollution prevention technology.\textsuperscript{115} Despite assurances of thorough pollution response, it became evident in the late 1970s that pollution was taking a toll on the nearby farmland, fishing grounds, and human health.

In 1985, an investigation by the Korea Pollution Research Institute, a group formed by Seoul National University students, unveiled the existence of Korea's first heavy metal pollution disease, similar to Itai-itai disease caused by cadmium.\textsuperscript{116} However, the Chun Doo-hwan administration refused to acknowledge the issue, insisting that the unidentified disease was not pollution-related. They based their claim on health surveys conducted in 1981 and 1984, which they claimed showed normal cadmium levels. To further investigate the situation, the government formed a faculty group in March 1985.\textsuperscript{117} Interestingly, right after this investigation, the government hastily announced the relocation of 2,601 households near the industrial complex, despite normal levels of heavy metal content found in the residents' blood and urine.\textsuperscript{118}

In June 1985, it was discovered that the zinc concentration in the rivers of Onsan was 23 times higher than the standard, and the copper content in the atmosphere was significantly elevated compared to the Guro Industrial Complex in Seoul. Additionally, numerous residents reported serious health issues, surpassing those found in other pollution areas. The Chun Doo-hwan administration intentionally downplayed the


\textsuperscript{118} “Relocation Plan for Onsan Residents,” \textit{Chosun Ilbo}, April 24, 1985.
severity of these findings.\textsuperscript{119}

Following the relocation of residents, the government actively encouraged the establishment of new factories in the abandoned areas, further worsening the environmental conditions in Onsan. Twenty years later, interviews with migrants revealed that residents who were originally involved in primary industries lost their jobs and either relocated elsewhere or worked as daily laborers in the industrial complex, leading to financial distress.\textsuperscript{120} Despite their ongoing health damage caused by pollution, these individuals received no compensation during the relocation or subsequent investigations. Crucial samples related to the cause of the disease were not preserved and disappeared. Residents suffering from pollution-related illnesses were also conveniently moved out of sight, concealing the negative effects of the industrial park.

Overall, the government's negligence in addressing pollution issues and its deliberate attempts to minimize the severity of the situation in the Onsan Industrial Complex resulted in significant damage to the environment, public health, and the livelihoods of the affected residents.

\textbf{Conclusion}

The 1970s was a period marked by interconnected development and pollution. Rapid economic growth was accompanied by a worsening environmental pollution crisis. The key features of this time can be summarized as follows:

Firstly, Japan played a significant role in influencing these matters. It was the primary source of pollution exported to Korea during the 1970s, thereby directly impacting pollution-related diseases, knowledge,

\begin{footnotes}
\footnote{\textsuperscript{119} "It’s Worse than the ‘Announcement’ of Onsan Pollution," \textit{Chosun Ilbo}, June 12, 1985.}

\footnote{\textsuperscript{120} Han Sang-jin, “The Effects of Industrial Complex Creation and Environmental Contaminated Area Migration Project on Residents' Lives,” Hwan'gyŏngsahoe-hakyŏn-gu 6, 2004: 73-105.}
\end{footnotes}
and alternative perspectives.

Secondly, discussions surrounding industrial pollution in the 1970s were marked by an antagonistic relationship between four groups: the government, media, opposition party, and scholars. Among these, the government held the most influential position. It deepened pollution by neglecting regulations, encouraged the public to prioritize development over addressing pollution concerns, and even linked pollution issues to anti-communism. However, as pollution cases from Japan increased in the mid-1970s and opposition parties took a stand against pollution, the government attempted to address the controversy by implementing ineffective environmental campaigns and declarations. The media played a mediating role in reporting pollution-related matters but consistently emphasized that economic growth and pollution were issues that couldn't be simply categorized into superiority or inferiority, while also invoking national sentiments stemming from Korea's history of colonization.

Thirdly, a group of experts, including bureaucrats, researchers, and policymakers, played various roles in leading the pollution discourse in Korean society during the 1970s. These individuals attained top positions in education, which had been extremely limited in the pre- and post-liberation era. Through foreign aid, they were able to study in the Anglo-American region. Recognizing the scarcity they experienced throughout colonial rule, division, liberation, and war, these elites introduced alternative discussions from advanced countries, voiced their academic beliefs and concerns about pollution, and sometimes expressed critical opinions that could challenge authoritarian regimes through joint resolutions. However, their investigations and analyses were often manipulated or suppressed by the government, as seen in the case of the Onsan disease. Victims claimed that most factory investigations were influenced by university research institutes or professors who favored the factories, leaving them with no avenue for redress. Some of these experts even went on to become advisors for the companies they had investigated, raising doubts about their aca-
demic integrity due to discrepancies in pollution standards and interpretations among various research institutions. Consequently, when a new generation emerged during the democratization movement in the 1980s, advocating for a grassroots environmental movement, these experts were marginalized and excluded from the environmental movement's lineage.

Over 50 years have passed since 1970, but Korean society continues to overlook the creation of marginalized areas and people because of development. In 1985, the people of Onsan stated, "We already know and feel it." A similar sentiment was echoed in the village of Jangjeom in 2020, where one-third of the residents developed cancer due to the leakage of carcinogens from fertilizer factories. They questioned why this issue had been neglected for so long, with their own bodies serving as evidence of the problem. In an era of scientific advancements and cutting-edge technology, it is essential to focus on the impacted individuals rather than just the statistics. This is why we should reflect on the voices of those who have been rendered shadows in the wake of development.

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During the period of rapid economic growth since the 1970s, Korea imported many polluting industrial facilities from Japan, resulting in the generation of huge amounts of hazardous waste. While the problems of environmental degradation such as these were an integral part of Korea’s development process, they have received only scant attention in the official history of the country’s economic development, often being dismissed as peripheral issues. This paper aims to go beyond this tendency by rewriting the history of economic growth that underlay the disputes caused by the importation of polluting industries from Japan in the 1970s. Its features can be summarized as follows.

First, Japan was the most damaging pollution exporter to Korea in the 1970s, and it was also the direct channel to import the knowledge of pollution, and alternative logic against the pollution issues.

Second, discussions over industrial pollution in the 1970s occurred in the antagonistic relationship between four groups: the government, media, opposition party, and scholars.

Third, a group of experts played various roles, including bureaucrats, researchers, and policy makers, leading the discussion of pollution in Korean society in the 1970s.

It has been well over 50 years since 1970. Nevertheless, Korean society still does not hesitate to create areas and people that become
shadows in the wake of development. This explains why we should focus on the “sick body” rather than the “numbers” in this age of science and technology.

**Keywords:** economic growth history; eco-economic history; Heavy and chemical industrialization; pollution imports; Onsan disease
1970년대 한국의 경제성장사 다시 쓰기: 공해수입과 경제성장의 그림자가 된 사람들

양지혜(동북아역사재단 연구위원)


셋째, 학자들은 개별, 연구원, 정책 연구자 등 다양한 역할을 동시에 수행하면서, 1970년대 한국 사회의 오염산업에 논의를 주도했다. 다만, 이들의 이러한 다중적 정체성은 1980년대 사회운동의 성장 이후 이들이 ‘환경운동사’의 공식 서사에서 축출되는 배경이 되었다.

1970년 이후 50년이 흘러가있었지만, 한국 사회는 여전히 발전이라는 이름 하에 그림자가 되는 지역과 사람을 만들내는 데 주저하지 않는다. 이는 과학과 첨단기술의 시대인 현재, 우리가 왜 ‘숫자’가 아닌 ‘아픈 몸’을 바라봐야 하는지를 말해준다.

주제어: 경제성장사; 생태경제사; 중화학공업화; 공해수입; 온산병
### Korea’s Major Pollution Researchers in the 1970s
(Key Members of the Seoul Eco Club, Founded in 1975)

<table>
<thead>
<tr>
<th>Name</th>
<th>Birth</th>
<th>Academic and educational background</th>
<th>Major posts during the Park Chung-hee administration</th>
</tr>
</thead>
</table>
| Kwon Sookpyo    | 1920  | 1945 Graduated from the Department of Pharmacy at Tokyo National University  
1946–56 Director of the Department of Sanitary Chemistry at the National Institute of Chemistry  
1955–57 Researcher at the Institute of Hygiene Engineering, Massachusetts State University (dispatched)  
1956–60 Director of Affairs in the drug department at the Ministry of Health and Social  
1970 Doctor of Pharmacy at Seoul National University                                                                 | Professor of Medicine at Yonsei University  
(Director of Environmental Pollution Research Institute)                                                               |
| No Yunghee      | 1927  | 1952 Graduated from Seoul National University in Law  
1955 Master of Law at Seoul National University  
1958 Master of Laws at the University of Minnesota  
1973 Doctor of Law at Seoul National University                                                                 | Professor of Urban Planning at Seoul National University  
(Director of Graduate School of Environmental Studies)  
Director of the Institute for National Land Development                                                                   |
| Gu Yeonchang    | 1928  | (Date unknown) Graduated from Seoul National University in Law  
(Date unknown) Master of Civil Law at Seoul National University  
(Date unknown) Master of Law at the University of Illinois  
(Date unknown) Doctor of Law at the University of Wisconsin                                                                 | Professor of Law at Kyung Hee University  
Member of Advisory Committee on Environmental Conservation at the Environment Agency                                        |
| Cha Chulhwan    | 1928  | 1953 Graduated from Seoul National University in Medicine  
1959 Master of Medicine at the University of Minnesota  
1963 Doctor of Medicine at Seoul National University                                                                            | Professor of Preventive Medicine at Korea  
University College of Medicine  
(Director of Environmental Medicine Research Institute)                                                                       |
<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Birth</th>
<th>Education and Career Highlights</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Jeong-hyun</td>
<td>1929</td>
<td>1955 Graduated from Korea University in Law&lt;br&gt;1950 Master of Public Administration at New York University&lt;br&gt;1962 Doctor of Public Administration at New York University</td>
<td>Member of the Central Pollution Prevention Review Committee&lt;br&gt;Professor of public administration at Yonsei University&lt;br&gt;Member of the Central City Planning Committee</td>
</tr>
<tr>
<td>Kim Jeong-hyun</td>
<td>1929</td>
<td>1950 Graduated from Seoul National University in Pharmacy&lt;br&gt;1958 Master’s Degree from Tokyo University&lt;br&gt;1986 Doctor of Pollution Management at Tohoku University</td>
<td>Director of the Pollution Division at the Ministry of Health and Society</td>
</tr>
<tr>
<td>Son Dong-heon</td>
<td>1930</td>
<td>1957 Graduated from Chung Ang University in Pharmacy&lt;br&gt;1959 Master of Pharmacy at Chung Ang University&lt;br&gt;1959–60 Researcher at the Warner-Lambert Institute in the United States&lt;br&gt;1970 Doctor of Pharmacy at Chung Ang University</td>
<td>Professor of Pharmacy at Chung Ang University&lt;br&gt;Member of the Water Pollution Committee of the Ministry of Health and Society</td>
</tr>
<tr>
<td>No Jae-sik</td>
<td>1930</td>
<td>1953 Graduated from Seoul National University in Physics&lt;br&gt;1959–60 Master of Meteorology at Imperial School of Science and Technology, University of London&lt;br&gt;1967 Doctor of Physics at Seoul National University</td>
<td>Director of Environmental Management Research at the Korea Atomic Energy Research Institute</td>
</tr>
<tr>
<td>Yoon Myung-jo</td>
<td>1934</td>
<td>1957 Graduated from the Department of Biology at Yonsei University&lt;br&gt;1971 Master of Medicine at Catholic University</td>
<td>Professor of Medicine at Yonsei University&lt;br&gt;Member of the Committee for Establishing the Third Economic Development Plan&lt;br&gt;Environmental Conservation Plan</td>
</tr>
</tbody>
</table>

*Source: An episode of Ilsahwae, “Back of Those Years: Korean Environmental History” (Seoul: Hongmunkwan, 2011); Chosun Ilbo Person Information Archive (https://cdb.chosun.com: Final access: February 15, 2023)