

The Shaping of Environmental Health Policy in South Korea in the Early 2000s and the Impact of the Abandoned Mine Investigation in Goseong*

Jinyoung PARK[†]

Introduction

On May 30, 2005, Director of Citizens' Institute for Environmental Studies (CIES, 시민환경연구소) Jang Jae-yeon (장재연) delivered a presentation titled "From PPM to Health (PPM에서 건강으로)" at a public hearing convened by the Environmental Health Policy Research Group (환경보건정책연구단) to discuss the 10-Year Comprehensive Plan for Environmental Health Policy (Comprehensive Plan, 환경보건정책 10개년 종합계획). The presentation was part of a series of discussions on the transformation of environmental policy through the lens of public health. He observed that environmental policy in Korea has been constrained to the control of pollutant emissions and the management of media, and that it is acceptable if it is below the PPM standard. He emphasized the necessity to transition to a receptor-centered environmental management system that prioritizes people and ecosystems.¹

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[†] Jeonbuk National University The Korean Research Institute of Science, Technology and Civilization, yourmusique@gmail.com

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¹ Jae-yeon Jang, "From PPM to Health PPM에서 건강으로," *Public Hearing for the 10-Year Comprehensive Plan for Environmental Health Policy: Transformation of Environmental Policy*,

The title of this presentation encapsulates the essence of the call for change in environmental policy that emerged from the late 1990s to the early 2000s. As many previous studies in environmental history have shown, health effects such as pollution damage around industrial complexes, *Onsan* illness (Onsanbyeong, 온산병), and pneumoconiosis (진폐증) have been investigated and addressed since the 1960s. However, it was only in the early 2000s that the term “environmental health (환경보건)” emerged as a conceptual framework for understanding the interconnections between environmental factors and human health. As Peter Thorsheim notes, the social context of a given era influences the manner in which a society defines and addresses its environmental problems.² This paper will examine the relationship between the emergence of environmental health policies in South Korea in the early 2000s and the health problems caused by heavy metals from abandoned mines. The issue of health concerns related to heavy metals persisted in South Korea throughout the 1990s and 2000s, particularly in the context of pollution damage from industrial complexes and the contamination of areas surrounding abandoned mines.

Heavy metals, such as mercury, cadmium, and lead, are significant contributors to environmental degradation and human health concerns. These metals are often the result of industrialization and development activities, which can lead to the contamination of soil, water, and air. In particular, environmental problems caused by mines that were developed to extract resources for industry and abandoned mines that are no longer in operation have the potential to cause damage to water, air, soil, crops, and people. Heavy metals represent a classic example of an environmental health hazard, as contamination of ecosystems can lead to human health problems.

What are the implications of framing the specific environmental harm of heavy metal pollution as “environmental health”? As Mitman, Murphy, Sellers, and others have demonstrated, the history of environmental pollution is inextricably linked to the history of public health harm. The history of environmental health is also the history of science. Furthermore, it encompasses the history of the production of specialized knowledge about health.³ A series of studies has demonstrated the diversity of knowledge produced across scales, uncertainties, materiality, and bodies.⁴ The

Through the Eyes of Public Health 환경보건정책 10개년 종합계획을 위한 공청회: 환경정책의 전환, 국민건강의 눈으로, 2005. 5. 30.

² Peter Thorsheim, *Inventing Pollution: Coal, Smoke, and Culture in Britain since 1800* (Athens: Ohio University Press, 2006).

³ Gregg Mitman, Michelle Murphy, and Christopher Sellers, “Introduction: A Cloud over History,” *Osiris* 19 (2004), 1-17.

⁴ You can also refer to other studies in the 2004 issue of *Osiris*. Michelle Murphy, “Uncertain Exposures and the Privilege of Imperception: Activist Scientists and Race at the U.S. Environmental Protection Agency,” *Osiris* 19 (2004), 266-282; Giovanna Di Chiro, “‘Living Is for Everyone’: Border Crossings for Community, Environment, and Health,” *Osiris* 19 (2004), 112-129; Kim Fortun, “From Bhopal to the Informing of Environmentalism: Risk Communication in Historical Perspective,” *Osiris* 19 (2004), 283-296.

environmental health movement in the United States also emerged in response to the Love Canal incident of 1978, which highlighted the centrality of human health concerns within the broader environmental context.⁵ Furthermore, environmental problems caused by heavy metals are also closely linked to the development and decline of regions.⁶ Mining was frequently the primary economic activity in a given locality, and as a consequence, the local population was exposed to elevated levels of heavy metals for an extended period.

Onsanbyeong serves as a salient illustration of the adverse health consequences associated with heavy metal contamination in South Korea. In their study, Jeong Yukyong and Yang Jihye analyze the methodology employed by the Korea Research Institute for Pollution Problems (공해문제연구소) in investigating the outbreak of Onsanbyeong.⁷ Onsanbyeong represents a prototypical instance of environmental contamination resulting from the rapid industrialization of South Korea in the 1970s, particularly the expansion of the chemical industry. In 1985, an investigation by the Korea Research Institute for Pollution Problems revealed the presence of heavy metal effects analogous to those observed in cadmium poisoning. The government attempted to minimize the significance of the issue, asserting that there was no discernible correlation between the ailment and environmental contamination. The investigation and the anti-pollution movement in Onsanbyeong resulted in the relocation of nearby residents. However, the decision to relocate caused significant economic hardship for the residents, who lost their jobs or became day laborers.⁸

In addition to Onsanbyeong, various studies within environmental history have explored a wide range of environmental issues, movements, responses, and regulatory changes in Korea from the 1930s to the early 2000s. Notably, many of these studies have employed the concepts of slow violence and slow disaster to shed light

⁵ Kate Davies, *The Rise of the U.S. Environmental Health Movement* (Lanham, MD: Rowman & Littlefield Publishers, 2013).

⁶ Bradley D. Snow, *Living with Lead: An Environmental History of Idaho's Coeur D'Alenes, 1885-2011* (Pittsburgh: University of Pittsburgh Press, 2017).

⁷ Yukyong Jeong, "The Process of Antipollution Movements and Relation with Japanese Antipollution Movements in Korea in the 1980's: Focusing on Activities of Korea Research Institute for Pollution Problems over Onsan Disease 1980년대 한국 반공해운동의 전개와 일본 반공해운동과의 관계: 온산병을 둘러싼 한국 공해문제연구소의 활동을 중심으로," *The Korean Journal of Japanology* 일본학보 96 (2013), 289-301; Jihye Yang, "Rewriting the Economic Growth History of Korea in the 1970s: Focusing on the Pollution Imports and the Shadow People of Economic Growth," *International Journal of Korean History* 28:2 (2023), 53-100.

⁸ For further information on the demand for relocation in the Onsan Industrial Complex, refer to the following. Sangjin Hahn, "The Effects of the Industrial Complex Formation on Residents Lives: Focusing on the Health, Economy and Community Relations of People near Onsan Industrial Complex 공단조성과 환경오염지역 이주사업이 주민생활에 미치는 영향: 온산공단 주변 주민의 신체적, 경제적, 공동체적 상태를 중심으로," *ECO 환경사회학연구* 6 (2004), 73-101.

on previously unrecognized environmental issues in Korea.⁹ Ko Tae-Woo's research focuses on the anti-pollution movement in the 1970s, with a particular emphasis on the local people's right-to-live movements and lawsuits for damages that emerged in response to the onset of severe pollution-related illnesses. The anti-pollution movement of the 1960s and 1970s called for enhancements in pollution prevention systems and alterations in environmental policies. This resulted in the enactment of the Pollution Prevention Act (공해방지법) of 1971 and the Environmental Conservation Act (환경보전법) of 1977.¹⁰ Shin Jae Joon and Kang Sooyeon trace the diversification of the environmental movement from the 1970s to the 1980s.¹¹ During this period, anti-pollution awareness broadened to encompass environmental issues, a framework for environmental rights was established, and the movement expanded to include not only activists and experts who had spearheaded the anti-pollution movement but also housewives and other members of the general public. These studies uncover a largely overlooked history of pollution and environmental damage in Korea since the 1930s, while also clarifying the movements and responses that emerged in reaction to these issues. The research conducted environmental sociology has primarily focused on the period following 1990, examining the political opportunity structures, social movements, and resource mobilization that have emerged in this context.¹²

⁹ Tae-Woo Ko, "Pollution Problems and Disaster Awareness in 1970s South Korea 1970년대 한국의 공해(公害) 상황과 재난 인식," *Concept and Communication* 개념과 소통 28 (2021), 7-52; Ji-hye Yang, "Mining and Environmental Pollution as 'Slow Violence' after the Colonial Period in Korea 근현대 한국의 광업 개발과 '공해 (公害)'라는 느린 폭력," *Critical Review of History* 역사비평 134 (2021), 383-412.

¹⁰ Tae-Woo Ko, "People's History of Pollution: Pollution Disasters and Anti-Pollution Movements of South Korea in the 1970s 공해의 민중사: 1970년대 한국의 공해재난과 반(反)공해운동," *HAKLIM* 學林 53 (2024), 191-237.

¹¹ Jae Joon Shin, "Routinization of Pollution(公害) and Emergence of Environmental Rights Awareness around 1970 1970년 전후 공해(公害)의 일상화와 환경권 인식의 씨앗," *Critical Studies on Modern Korean History* 역사문제연구 25:1 (2021), 523-555; Sooyeon Kang, "'Housewife', the 'New' Subject of the Korean Environmental Movement: The Citizens' Movement Society against Pollution (1986~1988) 한국 환경운동의 '새로운' 주체, '주부': 공해반대시민운동협의회(1986~1988)의 활동을 중심으로," *Journal of Ecological and Environmental History* 생태환경과 역사 9 (2022), 211-250.

¹² Dowan Ku and Deok Hwa Hong, "The Growth and Diversification of the Korean Environmental Movement : Focusing on Institutionalization 한국 환경운동의 성장과 분화: 제도화 논의를 중심으로," *ECO 환경사회학연구* 17:1 (2013), 79-120; Deok Hwa Hong and Dowan Ku, "Environmental Movement after Democratization in Korea: A Protest Event Analysis 민주화 이후 한국 환경운동의 제도화와 안정: 저항사건분석(protest event analysis)을 중심으로," *ECO 환경사회학연구* 18:1 (2014), 151-186; Do-Kyun Kim and Pyeong-ju Lee, "The Formation and Challenge of Local Environmental Movement: Focus on Seosan-Tae'an Federation for Environmental Movement 지역환경운동의 형성과 도전: 서산태안환경운동연합을 중심으로," *ECO 환경사회학연구* 17:1 (2013), 121-161.

In the field of the history of science, an examination of environmental issues is conducted with a focus on the scientization of environmental policy and regulation. In his examination of the history of environmental policy and regulatory institutions in the 1970s, Jeon June places particular emphasis on the establishment of the National Environmental Research Institute (국립환경연구소). He defines a series of processes through which environmental policy becomes institutionalized as the scientization of environmental policy. In this process, the measurement of environmental conditions became the main activity, and the establishment of Korean environmental regulatory standards was not easy.¹³ Won Chuyoung investigates the regulation of air pollution through the government's crackdown on polluting vehicles in the 1960s and 70s, highlighting that the failure to address the country's environmental problems during this period was not due to inaction, but rather because the burden of improvement was shifted onto individuals.¹⁴

As observed thus far, a significant portion of research within the field of Korean environmental history focuses on the 1960s and 1970s, a period marked by the emergence of pollution issues and the implementation of various institutional measures. However, this paper focuses on the early 2000s, a period that has not yet been the subject of extensive historical analysis.¹⁵ This paper examines the early 2000s in Korea by building on the discussions of various practices, institutionalization, and scientization processes related to environmental issues, as highlighted in previous studies. Through this analysis, the paper seeks to contribute to the fields of history of science, environmental history, environmental movements, and environmental policy. By examining the changes in air pollution measurement and air quality improvement policies in the 1990s-2000s, Won identified that the relationship between air pollution and diesel vehicles became evident through the measurement of air pollution concentrations by environmental organizations from the mid-1990s onwards. Additionally, he observed that the solidarity among environmental organizations, as

¹³ June Jeon, "Scientization of the Environment and New Environmental Policy: A Creation of the National Environmental Research Center and the Scientific Institutionalization of Korean Environmental Policy 환경의 과학화와 새로운 환경정책: 국립환경연구소의 설립과 환경정책의 과학적 제도화," *ECO 환경사회학연구* 27:1 (2023), 135-173.

¹⁴ Chuyoung Won, "Regulating Air Pollution in the Diesel Car Era: The Automobile Pollution Control and Individualized Responsibility in South Korea during the 1960s and 1970s 디젤 자동차 시대의 대기오염 관리: 1960-70년대 한국 정부의 공해차량 단속과 책임의 개인화," *ECO 환경사회학연구* 24:1 (2020), 303-331.

¹⁵ In *The Korean Journal for the History of Science*, one study addressing the 2000s examines the political culture of scientific advice during the mad cow disease controversy. Dae-cheong Ha, "'Science in 2007' vs. 'Politics in 2008'?: The Controversy over Mad Cow Disease and Political Culture of Scientific Advice in Korea '2007년 과학' 대 '2008년 정치'?: 광우병 논쟁과 과학 자문의 정치 문화," *The Korean Journal for the History of Science 한국과학사학회지* 37:3 (2015), 555-592.

well as their cooperation with the government, strengthened during this period.¹⁶ This paper will examine a similar period, the early 2000s, and demonstrate that collaboration between civil society and the government took the form of joint investigations into the health impacts of environmental issues. As American historian Timothy George has argued, the process of recognizing and investigating environmental damage is inextricably linked to the political and social context of the time. The Minamata disease outbreak in Japan, which is the most widely recognized disease caused by heavy metals, was a pollution disaster in Kumamoto Prefecture, Japan, that occurred in the 1950s and 1960s. As George has argued, the long struggle of Japanese Minamata disease victims for recognition of their damages is not merely a movement for scientific causation and damage compensation. Rather, it is a movement for the deepening of democracy, which represents a step forward in the maturation of postwar Japanese democracy.¹⁷

This paper will examine the case of the abandoned mine in Byeongsan Village (병산마을), Goseong-gun, Gyeongsangnam-do, which serves as an illustrative example of a health impact study. The investigation, which was initiated by an local environmental organization that suspected a potential link between the health effects of the mine and Itai-Itai disease (이타이이타이병, イタイイタイ病, *Itai-Itai byō*, “it hurts-it hurts disease”). This investigation led to the shaping of the environmental health policy and the formulation of a comprehensive abandoned mine management policy in South Korea. According to Yang, the number of media reports using the keyword “abandoned mines (폐광산)” has increased from 26 to 167 per year on average since the case was reported. This case study of Byeongsan Village thus represents a significant example of the challenges posed by mining-related pollution in South Korea.¹⁸

As Yang notes, the Byeongsan Village case received considerable media attention and subsequently exerted a significant influence on the formulation of South Korea’s environmental health policy. With regard to the Byeongsan Village health investigation, Kwon Hojang, who participated as the principal investigator, has published

¹⁶ Chuyoung Won, “The Nitro Dioxide Passive Sampler and the Transition of Atmospheric Environment Policy in the 1990s and 2000s 전진국 수준의 대기환경 만들기: 1990-2000년대 이산화질소 확산측정기를 통한 대기오염 측정과 대기질 개선정책의 변화,” *ECO 환경사회학연구* 26:2 (2022), 87-127.

¹⁷ Timothy S. George, *Minamata: Pollution and the Struggle for Democracy in Postwar Japan* (Cambridge, MA: Harvard University Asia Center, 2001); Young Hee Lee, “Searching for a Social Solution for the Humidifier Disinfectant Disaster in Korea 가습기살균제 참사에 대한 사회적 해법의 모색,” *Journal of Environmental Health Sciences 한국환경보건학회지* 45:4 (2019), 295-309.

¹⁸ Yang, “Mining and Environmental Pollution” (note 9).

a paper detailing the process and results of the investigation.¹⁹ Building on this foundation, this paper expands on Yang's work by placing the abandoned mine health investigation within the broader context of environmental policy changes in the early 2000s. Furthermore, this paper examines the ways in which Yang's concept of "the slow violence of pollution (공해라는 느린 폭력)" became visible in the early 2000s.²⁰ In their study, Kang Yeonsil, Kim Jiwon and Park Jinyoung examine the emergence of the environmental health agenda in South Korea's environmental policy. They reveal that a critical issue in the institutionalization of environmental health policy through the Environmental Health Act (환경보건법) was the creation and definition of a list of environmental diseases (환경성 질환).²¹

The investigation of Byeongsan Village, which is the focal case of this paper, was the subject of Kwon's earlier work, where he provided a detailed account of the investigation team's composition and process. Building on Kwon's research, this paper expands the scope by incorporating a broader range of sources and extending the timeline to include both the period before and after the investigation. This approach offers a more nuanced understanding of the motivations behind the involvement of key actors in the investigation, their subsequent contributions, and the investigation's broader significance for Korean environmental policy.

This paper will clarify the key actions of the principal actors who advocated for changes in environmental policy. It will demonstrate that the efforts of the environmental health experts associated with the CIES played a significant role in the formulation of environmental health policy. A substantial body of literature has examined the collaborative efforts of various stakeholders in environmental and health research, as well as the competitive dynamics among researchers in these fields.²² In examining the case of Wonjin Rayon Disease, a mass occupational disease outbreak in a chemical fiber factory in the late 1980s and early 1990s, Hwang Kyoryen illus-

¹⁹ Ho-Jang Kwon, "Lessons of Goseong Abandoned Metal Mine Accident 고성 폐금속 광산 오염 사건의 교훈," *Journal of Environmental Health Sciences* 한국환경보건학회지 37:5 (2011), 335-341.

²⁰ Yang, "Mining and Environmental Pollution," (note 9), 398.

²¹ Yeonsil Kang, Jiwon Kim and Jinyoung Park, "Social Construction of Environmental Health Disasters: Cases of Asbestos and Humidifier Disinfectant 환경보건재난의 사회적 구성 : 석면과 가습기살균제 피해를 중심으로," *ECO 환경사회학연구* 25:2 (2021), 125-172.

²² Jung Lee, "Atopic Dermatitis and the Making of an Environmental Disease in Contemporary South Korea 아토피 질환의 '한국적' 탄생과 부상: 대중적 지식활동의 역할을 중심으로," *Journal of Science & Technology Studies* 과학기술학연구 10:1 (2010), 107-152; 환경 위험과 생물학적 시민권: 한국의 석면 피해자 보상운동을 중심으로, *Civil Society and NGO 시민사회와 NGO* 13:1 (2015), 125-162; Yeonsil Kang, "Politics of Knowledge of Asbestos Activism in South Korea : Settled Dust Analysis and the Controversies over Asbestos Pollution Measurement 한국석면운동의 지식 정치: 먼지 분석법과 석면오염 측정 논란을 중심으로," *Journal of Science & Technology Studies* 과학기술학연구 18:1 (2018), 129-175.

trates that experts with disparate identities engaged in a competitive discourse regarding the criteria for recognizing occupational diseases.²³ This paper will demonstrate that the contributions of key actors, who were both experts and activists, successfully anchored the environmental health agenda and influenced changes in environmental policy in South Korea, as they navigated and operated across civil society, academia, and policy spheres.

If the voices and roles of local people were instrumental in exposing the harms at the outset of the anti-pollution movement, the question of how to expose the harms through science has become a significant issue in environmental issues raised since the 2000s. Since the 1990s, environmental movements and experts involved in the movement have recognized the importance of producing knowledge from the perspective of local people in order to solve pollution problems. In accordance with this objective, the Korean Federation for Environmental Movement (KFEM, 환경운동연합) established a specialized research institute designated as the CIES. However, it was not straightforward for the institutes to combine and produce knowledge on each local environmental issue. Even now, despite the issue being raised, it is rarely practiced due to lack of resources. Rather, numerous local environmental issues that have been raised in Korea in recent years have followed a similar trajectory. In these instances, the government has taken the initiative to organize an investigation committee or research team in response to a local resident's concern. Subsequently, a joint public-private task force (민관합동공동대책위원회) is formed, with relevant experts participating in the investigation and publishing the results. What are the reasons for this top-down, government-oriented investigation of health damage caused by environmental issues?

This paper explores the significance and impact of the Byeongsan Village investigation on the emergence and development of the environmental health sector in South Korea's environmental policy in the early 2000s. The investigation significantly advanced the formulation of policies addressing health issues caused by environmental problems, a concern raised by experts and civil society since the 1980s. By closely analyzing the Byeongsan Village case, which served as a watershed moment in shifting societal attention to mineral pollution and solidifying the institutionalization of environmental health policy, this paper examines the broader implications of the shift towards a health-centered environmental policy.

The following outlines the structure of this paper. Section 2 examines the rising need for environmental health policy and the efforts made by environmental organizations and experts to bring attention to the environmental health agenda. In Section 3, the background of the Itai-Itai disease issue in Byeongsan Village is explored.

²³ Kyoryen Hwang, "'Wonjin Rayon Disease' and Two Scientific Lives '원진레이온 직업병'과 두 가지 과학적 삶: 이황화탄소 중독증의 인식 가능성과 판정을 둘러싼 논쟁을 중심으로," *Journal of Science & Technology Studies* 과학기술학연구 21:1 (2021), 128-162.

Section 4 analyzes the process of the joint health impact investigation. Finally, Section 5 assesses the impact of this investigation on the subsequent institutionalization of environmental health policy. To this end, this paper utilizes the 2004 “Goseong Itai-Itai Disease Related Documents (고성이타이관계철),” produced by the Soil and Groundwater Division (토양지하수과) of the Water Environmental Policy Bureau (물환경정책국) of the Ministry of Environment (MOE, 환경부), which is housed in the National Archives of Korea (국가기록원), alongside materials gathered from the Eco Archive (환경 아카이브 풀음) managed by the Korea Safety Health Environment Foundation (재단법인 숲과나눔), as well as various reports, newspapers, and interviews.

“When the Environment is Sick, the Body is also Sick”: The Rise of Environmental Health Agenda in the Early 2000s

Prior to the 1990s, environmental policy was largely focused on the control of visible pollutants. In 1963, the Pollution Prevention Act was enacted with the stated purpose of improving public health by preventing health and sanitary hazards.²⁴ However, it is clear that this act was purely symbolic. It is commonly accepted that South Korea’s inaugural comprehensive environmental policy was enacted in 1971, when the Pollution Prevention Act was revised and the Environmental Conservation Act was enacted in 1977. With the enactment of the Environmental Conservation Act, governmental bodies such as the Ministry of Health and Social Affairs’ Sanitary Section (보건사회부 위생계) and the Korea Environment Agency (환경청) have implemented policies to preserve the natural environment (자연환경), including air, water, and soil. A variety of standards were established, including those pertaining to air quality, water quality, and emission limits.²⁵ Pollutants were managed in accordance with these standards. The principal objective of the environmental policy was to ensure the effective management of the natural and living environment in light of the environmental pollution caused by development.²⁶

The health effects of pollution and environmental damage were not the responsibility of both the MOE and the Ministry of Health and Social Affairs. In the wake of the Onsanbyeong outbreak, the MOE asserted that the precise etiology remained

²⁴ Pollution Prevention Act 공해방지법, Effective January 1, 1964, Act No. 1436, Enacted November 5, 1963.

²⁵ Tae Hoon Moon, “Evolution of Environmental Policy in Korea and It’s Future Task, 1963-2007 한국 환경정책의 변화와 과제, 1963-2007,” *The Korea Association for Policy Studies* 한국정책학회보 17:3 (2008), 131-162.

²⁶ Kwang-im Kim, *50 Years of the Environment in Korea* 한국의 환경 50년사 (Seoul: Korea Environmental Technology Research Institute, 1996).

elusive, but that preliminary investigations indicated that the disease was not environmentally induced. The MOE further stated that, at this juncture, it was not in a position to assume full responsibility. The Ministry of Health and Social Affairs posited that “epidemiological investigations should be conducted for infectious diseases, especially bacterial infectious diseases. However, it is highly probable that the Onsan residents’ disease is not an infectious disease caused by bacteria. Therefore, it is not within the purview of the Ministry of Health and Social Affairs to intervene.”²⁷ Although harm had occurred and residents were voicing their suffering, there was a noticeable reluctance among government departments to assume responsibility.

In the 2000s, the issue of environmental pollution and its impact on human health remained unaddressed, with no ministry responsible for its oversight. The situation with regard to pollution appeared to improve as a result of the enactment of laws and the setting of air standards by the MOE. However, there were still instances of health problems caused by environmental issues. In the early 2000s, as environmental health problems persisted, the environmental movement organizations and related expert groups began to advocate for the establishment of a division responsible for addressing the health consequences of environmental pollution. However, the relevant government ministries, the Ministry of Health and Welfare (MOHW) and the MOE, seemed to shift responsibility for environmental health problems between each other, with each ministry attributing the issue to the other’s domain. The MOHW designated it as an environmental issue, whereas the MOE classified it as a health concern and asserted that it was not within their purview.²⁸ A group of experts, activists, and other stakeholders, led by the Environmental Health Committee (EHC, 환경보건위원회), a subcommittee of the CIES, argued for the urgent need to designate a government ministry to address the health issues resulting from environmental contamination.

The environmental movement, which experienced a period of stabilization and rapid growth in the 1990s, shifted its focus to development projects in the late 1990s. These included dam construction and the Saemangeum (새만금) reclamation projects. Additionally, environmental issues that directly impacted daily life, such as drinking water, air pollution, waste, food, and hazardous chemicals, which had been a central concern of the environmental movement, were addressed. Since the late 1990s, a number of issues have emerged as key concerns for the environmental movement,

²⁷ Soon-sik Park, “Environmental Agency, Is the Mysterious Disease in Onsan Industrial Complex a Pollution-related Illness or Not? 환경청 온산 공단 괴질 공해병이나 아니냐,” *Kyunghyang Shinmun*, 1985. 3. 19; Dong-ho Shin, “[25 Years of Environmental Movement Chronicles] Onsanbyeong Incident (5): A Mystery Permanently Sealed as an Unsolved Case [秘錄환경운동25년] 온산병 사태(5) 영구미제로 봉인된 미스터리극,” *Weekly Kyunghyang* 2006. 4. 18.

²⁸ KFEM CIES and *Joongang Daily*, *Symposium and Publication Celebration Environmental Health Policy in Korea Symposium Proceedings* 심포지엄 및 출판기념회 한국에서의 환경보건정책 자료집, 2004. 6. 3., 107.

including those related to environmental hormones, genetically modified foods, imported foods, mad cow disease, food safety accidents, and asbestos.²⁹ The emergence of health problems caused by environmental hormones in the late 1990s, in particular, has led to calls for the MOE to strengthen its capacity to manage hazardous chemicals.

In particular, as the problems of sick building syndrome and atopy emerged in the early 2000s, the MOE strengthened its policy of managing hazardous chemicals and sought to create a division dedicated to environmental health policy. Furthermore, during the 2000s, it became imperative to guarantee a prosperous and fulfilling existence for the populace. As people's expectations for a comfortable environment have increased, efforts to improve the quality of the environment have become necessary. The growing attention to health in all aspects of life, coupled with the emergence of wellness, or Lifestyles of Health and Sustainability (LOHAS) as a way of life, has led to an increased need for chemical management.³⁰ Concurrently, the environmental movement and experts centered on the KFEM's CIES continued to demand the creation of a unit dedicated to health problems caused by environmental pollution.³¹

On March 25, 2004, the MOE announced a reorganization of its headquarters. The Chemicals Division (화학물질과) underwent expansion and reorganization, resulting in the formation of three divisions with the objective of enhancing the management of chemicals. The three divisions are the Environmental Health Policy Division (환경보건정책과), the Chemical Safety Division (화학물질안전과), and the Hazardous Substances Division (유해물질과).³² According to the MOE, the reorganization was undertaken with the objective of enhancing environmental policy consultation and coordination with relevant ministries, local governments, and civil society organizations.³³

On February 21, 2003, prior to the inauguration of the Roh Moo-hyun government, the CIES convened a policy debate on the 10th anniversary of its founding, entitled "The New Government's Environmental Policy, Where Will It Go? (새정부 환경정책,

²⁹ Ku and Hong, "The Growth and Diversification" (note 12).

³⁰ MOE, *Environmental White Paper 2004* 환경백서 2004 (Gwacheon: Ministry of Environment, 2004); MOE, *Environmental White Paper 2005* 환경백서 2005 (Gwacheon: Ministry of Environment, 2005).

³¹ Jae-Kak Han and Young-Bae Chang, "A New Form of Public Participation in Science and Technology: Two Cases of Doing 'Undone Science' in Korea 과학기술 시민참여의 새로운 유형: 수행되지 않은 과학 하기 한국의 두 가지 사례 - 아토피와 근골격계 질환," *Journal of Science & Technology Studies* 과학기술학연구 9:1 (2009), 1-31.

³² Enforcement Rules of the Organization of the Ministry of Environment and Its Affiliated Agencies 환경부와그소속기관직제시행규칙, Enforced on March 25, 2004, Ministry of Environment Ordinance No. 154, March 25, 2004, Partially Amended.

³³ Doo-young Lee, "Ministry of Environment to Strengthen Consultation and Coordination with Civil Society Organizations-Organizational Transformation 환경부, 시민단체 등과 협의.조정 강화-조직 혁신," *Newsis*, 2004. 3. 23.

어디로 갈 것인가?)” The CIES was established with the objective of “strengthening the professionalism and problem-solving capabilities of the environmental movement and supporting the environmental movement with objective and reliable research.”³⁴ The CIES was established under the banner of “professionalizing and scientizing the environmental movement” with the objective of standing in the shoes of the affected people and using data production and science to reflect their voices and solve their problems.³⁵

Jang Jae-yeon, who was appointed director of the CIES in 2001, was a professor of preventive medicine at the College of Medicine, Ajou University, and an expert and activist who initiated his environmental activism with the anti-pollution movement from 1980s. During his tenure as a researcher and assistant at the Institute for Environmental Research in Yonsei University (IERY, 연세대학교 환경공해연구소) in the 1980s, Jang collaborated with Director Kwon Sook-pyo (권숙표) on the analysis of Onsanbyeong samples and the measurement of air pollutants.³⁶

Before the inauguration of a government that had promised “participation” and “reform,” and following several conflicts within the environmental movement and policy sectors over various development issues, the MOE and the Korea Environment Institute (한국환경정책·평가연구원) proposed the possibility of international cooperation, alongside policies aimed at addressing environmental issues such as air, water, and waste. In his presentation, Jang advocated for the inclusion of environmental rights in the Constitution, a reorientation of the perception of development organizations, and environmental policies that prioritize environmental justice.

In addition, he advocated for the implementation of an “environmental policy that protects people’s health and lives,” which he subsequently expanded into a proposal for the MOE to establish and implement an “environmental health” policy dedicated to addressing the health consequences of environmental issues. Furthermore, the MOE should implement measures to mitigate the adverse health effects of environmental pollution. In accordance with the stipulations of the Government Organization Act (정부조직법) at the time, the MOE was entrusted with the responsibility of “managing affairs related to the preservation of the natural and living environment

³⁴ KFEM CIES, *The 6th Citizen Environment Forum “The New Government’s Environmental Policy, Where Will It Go?” Policy Debate to Commemorate the 10th Anniversary of CIES Conference Proceedings* 제6회 시민환경포럼 시민환경연구소 창립 10주년 기념 정책토론회, 새정부 환경정책, 어디로 갈 것인가? 자료집, 2003. 2. 21. 59.

³⁵ Director of CIES Jae-Yeon Jang and members of the Environmental Health Committee, “Releasing a Revised Edition 개정판을 내며,” *Environmental Health White Paper: When the Environment is Sick, the Body is also Sick* 환경보건백서: 환경이 아프면 몸도 아프다!, (2005). 12.

³⁶ Dong-ho Shin, “[25 Years of Environmental Movement Chronicles] Onsanbyeong Incident (4): Cho Young-rae Activates Secret Countermeasure Committee. [祕錄 환경운동25년] 온산병 사태(4) 조영래, 비밀 대책위 가동하다,” *Weekly Kyunghyang* 2006. 4. 11.

and the prevention of environmental pollution.”³⁷ He asserts that the ministry’s regulations indicated that if a factory was adhering to management standards, there was no necessity for the ministry to intervene, even if it was affecting health. At the time, even in the event of adverse health effects resulting from environmental pollution, the MOE was readily inclined to assert that the responsibility lay with the MOHW.³⁸ In his view, the health effects were a result of the MOE’s failure to prevent pollution. Since the MOE regarded its primary responsibility as prevention, it did not consider itself accountable for health problems that had already occurred. Given that, in cases of industrial accidents or incidents, the responsible organization can be held liable for failing to take adequate preventive measures, the MOE’s stance could be seen as an abdication of its obligations.³⁹

However, strictly speaking, contrary to the MOE’s claim, health damage caused by environmental issues did not fall under the jurisdiction of the MOHW either.⁴⁰ He stated that there is no unit within the MOE that is responsible for addressing the health consequences of environmental pollution. He observed that it is illogical to suggest that the ministry is fulfilling its mission of managing environmental standards or emission facilities when health problems caused by environmental pollution occur. He further argued that the ministry’s mandate should be revised to “responsible for protecting people’s health and maintaining the safety of the natural and living environment.”⁴¹

Director Jang, who had been involved in numerous environmental movements opposing the government’s stance on pollution, particularly in the 1980s, began to consider the trajectory of the movement and the role of the government in the late 1990s. This was prompted by his participation in investigations of various pollution-related

³⁷ Government Organization Act 정부조직법, Effective January 19, 2002, Act No. 6622, Amended by Other Laws January 19, 2002. The 2018 revision introduced a new section on water resource management. This section states that the MOE is responsible for managing matters related to the natural environment, the preservation of the living environment, the prevention of environmental pollution, the conservation, utilization, and development of water resources, and rivers. Government Organization Act 정부조직법, Effective May 27, 2024, Act No. 20145, Partially Amended January 26, 2024.

³⁸ KFEM CIES, *op. cit.*, (note 34), 41.

³⁹ Even after the establishment of environmental health policies, controversies over the scope and responsibilities of the MOE have continued to recur. For example, debates have arisen between the Ministry of Labor, the MOHW, and the MOE regarding the responsibilities and scope of work of the MOE in relation to asbestos and humidifier disinfectant damage. The controversy arises from the intricate nature of the damage caused by environmental issues. For further information, please see the following article. Kang, Kim and Park, *op. cit.*, (note 21)

⁴⁰ The Minister of Health and Welfare is responsible for matters pertaining to health, sanitation, epidemic prevention, protocols, contracts, livelihood protection, independent living support, women’s welfare, children, the elderly, the disabled, and social security. Government Organization Act 정부조직법, Effective January 19, 2002, Act No. 6622, Amended by Other Laws, January 19, 2002.

⁴¹ KFEM CIES, *op. cit.*, 42.

damage cases and the accumulation of experience in the movement. Following his experience of organizing residents to fight for various issues, Jang's perspective broadened as he engaged with the government and gathered experts to discuss these matters in forums and committees. This led him to conclude that the government's role in addressing health damage caused by environmental problems was significant.⁴² Consequently, since assuming the role of director at CIES, he has extended invitations to both the MOE and the MOHW to participate in forums and public hearings, with the objective of advocating for the establishment of a government department tasked with addressing the health consequences of environmental pollution.

In 2003, the EHC was established within CIES.⁴³ The committee was comprised of over thirty scholars, lawyers, KFEM members, and activists from various disciplines, including environmental health, preventive medicine, occupational medicine, environmental epidemiology, and environmental sociology. The scholars, activists, and other participants in the committee shared a sense of concern that the health effects of environmental pollution had been neglected in environmental and health policies. They therefore decided to change the government's environmental policy by intensively researching this issue and raising public opinion.⁴⁴ To disseminate information regarding the adverse effects of environmental pollution on human health and the necessity for policy reform, the committee collaborated with the *JoongAng Daily* (중앙일보) to organize a series of public awareness campaigns under the banner "When the Environment is Sick, the Body is also Sick (환경이 아프면 몸도 아프다)." ⁴⁵ (Figure 1)

From March 10 to May 28, 2004, a total of 11 series were published, covering air pollution, sick building syndrome, tap water and groundwater, fast food, children's health, hazardous chemicals, extreme weather, and electromagnetic waves. The series was collected into a book and published as the *Citizen's Edition of Environmental Health White Paper* (시민판 환경보건백서). At a symposium to celebrate the publication, the EHC said, "We hope to see the MOE and the MOHW, which have often

⁴² Interview with Jang Jae-yeon (current chairman of Korea Safety Health Environment Foundation 숲과나눔), 2024. 5. 28.

⁴³ Prior to the establishment and activities of the EHC, the CIES Air Subcommittee (대기분과위원회) was formed in 2001. Many of the experts involved in the Air Subcommittee also participated in the EHC. However, the activities and role of the Air Subcommittee remain to be investigated.

⁴⁴ Director of CIES Jae-Yeon Jang and All members of the Environmental Health Committee, op. cit., 12.

⁴⁵ At that time, the *JoongAng Daily* had an environmental journalist named Kang Chan-soo, who had been covering environmental issues since 1994. After retiring from journalism, he currently serves as a co-chair of KFEM.

Raising the Issue of Itai-Itai Disease Around Abandoned Mines

The issue of soil contamination from abandoned mines has been the subject of investigation and study since the 1980s, becoming a significant concern in the 1990s. Mine waste, which may take the form of waste rock or tailings (*gwangmi*, 광미) (also known as *gwangmisa* 광미사 or “residues” 찌꺼기), is typically accumulated in close proximity to the mine following the extraction of minerals from the mine. Nationwide, more than 900 metal mines and 300 coal mines have been developed. The majority of these mines were developed by the Japanese during the colonial period.⁴⁷

In the 1990s, the media reported on the contamination of the environment by heavy metals from various mines across the country. In 1995, the issue of pollution at the Siheung Mine (시흥광산), located in Gahak-dong, Gwangmyeong-si, was brought to the attention of the relevant authorities. Siheung Mine was a mine that had been engaged in the mining of metal ores, including gold, silver, copper, and zinc, since 1916. It was closed in 1973 following the mine’s bankruptcy in 1972. Following the closure of the mine, the tailings were left untreated, resulting in continued environmental impact on the surrounding villages. In 1980, a research team led by Professor Ryu Sun-ho (류순호) of Seoul National University’s Institute of Agricultural Development (농업개발연구소) conducted a comprehensive analysis of the soil, streams, and agricultural products in the area for the presence of heavy metals. The analysis revealed the presence of numerous heavy metals in the environment. In 1994, a survey conducted by Institute for Agricultural Development and Kumho Engineering on the contamination of agricultural land and crops around the Gahak Mine revealed that the soil contained 50 times more cadmium, 9 times more copper, 18 times more zinc, and 27 times more lead than the natural amount.⁴⁸ The MOE also found the levels to be high when it conducted a survey in 1993, and the same was true in 1996 when the KFEM measured them. Gwangmyeong-si commissioned Professor Jang Im-won (장임원) of Chung-Ang University’s College of Medicine to conduct a comprehensive survey on the potential human health impacts in areas near the Gahak Mine that have been contaminated by the mine’s operations. A total of 7% of the residents of the five nearby villages exhibited results that were classified as “cautionary” according to the standards set by the Ministry of Labor.⁴⁹

⁴⁷ Yang, “Mining and Environmental Pollution” (note 9).

⁴⁸ “Serious Heavy Metal Pollution in the Abandoned Mining Area of Gwangmyeong 광명 폐광지역 중금속 오염 심각,” *Yonhap News*, 1995. 3. 23.

⁴⁹ KFEM, “On-site Coverage: Residents of Gahak-dong Warned of ‘Itai-Itai Disease 현장취재 ‘이파이 이파이 병’ 경고받은 가학동 주민들,” *Environmental Movement 환경운동* 35 (1996), 32-37.

In April 1996, the *Kyunghyang Shinmun* reported that residents in the vicinity of the Cheil Mine (제일광산) in Boeun-gun, Chungcheongbuk-do, were exhibiting symptoms similar to those observed in patients with Itai-Itai disease.⁵⁰ The residents had been consuming groundwater that had been contaminated by heavy metals from the abandoned mine. Some individuals have reported experiencing joint pain and kidney dysfunction. “The mine did not assist us when it was operational, and now it is attempting to cause our demise,” they stated.⁵¹

The MOE’s primary response to the issue of abandoned mines has been to address soil contamination. In 1996, the MOE announced the commencement of a nationwide survey of abandoned mine sites. The MOE has indicated that it is engaged in discussions with the Ministry of Trade, Industry and Energy (통상산업부) and the Ministry of Agriculture, Forestry and Fisheries (농림수산부), which are responsible for the regulation of mine pollution prevention. Additionally, the KFEM announced its intention to select 250 abandoned mine sites for separate survey. It was noted that the epidemiological survey conducted in Gwangmyeong-si was incomplete, with more than 200 residents excluded.⁵²

On June 3, 2004, reports of a suspected outbreak of Itai-Itai disease in Goseong, were widely disseminated in central daily newspapers such as the *Munhwa Daily*. The Center for Water Quality and Environment (수질환경센터) of the CIES of Ma-chang FEM (마창환경운동연합 시민환경연구소), one of the local affiliated centers of the CIES, has announced the results of a blood cadmium test conducted by a specialized institute on seven residents near the former Cheil Mine in Samsan-myeon. The Cheil Mine primarily extracted copper. Due to the presence of copper ions, which exhibit a blue color, the water around the mine at that time had a bluish tint. Local residents described this phenomenon as follows: “Whenever it rained, blue-green copper runoff from the mines flowed into the stream in front of the village (비만 오면 광산에서 배출된 시퍼런 구리 녹물이 마을 앞 냇가로 흘러내렸습니다).”⁵³

⁵⁰ Pan-su Kim and Gil-geun Jeong, “Cadmium Pollution Again Around the Abandoned Mine 폐광주변 또 카드뮴 오염,” *Kyunghyang Shinmun*, 1996.04.23.

⁵¹ Lee Sang-yeob, op. cit., 179..

⁵² Pan-su Kim, “Ministry of Environment Initiates Investigation into Heavy Metal Pollution in Abandoned Mine Areas 폐광지역 중금속 오염 환경부 실태파악 착수,” *Kyunghyang Shinmun*, 1996.05.07.

⁵³ Sang-yong Lee, “‘It Hurts, It Hurts’: Byeongsan Village Suspected of Itai-Itai Disease ‘아프다 아파’: 이타이이타이병 발생 의심받는 병산마을,” *Path Living Together* 함께사는길 133 (2004), 60-63.



Figure 2. A map of the area surrounding the Samsan Cheil Mine. This map shows the locations of the mine’s Sections 1 to 4, the entrances to the shafts, as well as the positions of the tailings storage area and the retention pond. Source: MOE S&G Division, (note 56), 147.

Itai-Itai disease is the name given to a pollution-related disease that was identified in the Shinzu River basin in Koyama Prefecture, Japan. In 1968, a Japanese government investigation revealed that the dissolution of calcium in bones by cadmium caused kidney failure and osteomalacia (골연화증). The source of the contamination was identified as wastewater from the Mitsui Metal Mine, situated upstream of the Shinzu River. Cadmium, derived from the mining of lead and zinc, was introduced

into the wastewater and subsequently contaminated the soil, streams, and agricultural products.⁵⁴

As discussed earlier, the emergence of Onsanbyeong prompted concerns about the concentration of cadmium in the blood of the residents. In January 1985, the Korea Research Institute for Pollution Problems reported that the symptoms of the residents were similar to Itai-Itai disease. Nevertheless, it was determined that the symptoms were not solely attributable to cadmium, but rather a consequence of a complex interplay between multiple heavy metals, given the nature of the industrial complex.⁵⁵ Onsanbyeong was caused by the industrial complex's inadequate management and the discharge of heavy metals. Following the report on Onsanbyeong, a suspected case of Itai-Itai disease occurred once again around the abandoned mine in 2004.

On June 3 at the Byeongsan Village Community Center in Samsan-myeon, Lee Sang-yong (이상용), director of the Center for Water Quality and Environment, and Yang Woon-jin (양운진), then a professor of civil and environmental engineering at Kyungnam University, presented the findings of the survey. On May 21, the Machang FEM requested that the village head of Byeongsan Village select seven residents who had complained of pain in their old age to have their blood and urine cadmium concentrations measured at Samsung Hospital in Masan.⁵⁶ According to Lee, Byeongsan Village is an abandoned mining area, which has led to concerns about the potential for environmental contamination. Consequently, the symptoms of individuals with aches and pains have been observed to be more severe than in other areas, while those with osteoporosis (골다공증) have exhibited more severe symptoms. Consequently, the Machang FEM requested that the village leader select the seven residents who had reported the most severe pain to undergo testing.⁵⁷ The results demonstrated that six of the subjects exhibited blood cadmium levels exceeding the Ministry of Labor's standard.

⁵⁴ Fumikazu Yoshida, Akio Hata, and Haruo Tonegawa, "Itai-Itai Disease and the Countermeasures against Cadmium Pollution by the Kamioka Mine," *Environmental Economics and Policy Studies* 2:3 (1999), 215-229; Masanori Kaji, "Role of Experts and Public Participation in Pollution Control: The Case of Itai-Itai Disease in Japan," *Ethics in Science and Environmental Politics* 12:2 (2012), 99-111.

⁵⁵ Kyoung-Mu Lee and Moon-Young Park, "Review of Epidemiological Research and Perspectives for Future Environmental Health Progress in Korea 한국 환경보건 발전에 대한 역학 연구의 기여 및 전망," *Journal of Environmental Health Sciences* 한국환경보건학회지 48:3 (2022), 138-150.

⁵⁶ MOE S&G Division (Ministry of Environment, Water Environment Policy Bureau, Water Supply and Sewerage Policy Department, Soil and Groundwater Division) 환경부 물환경정책국 상하수도정책관 토양지하수와, "Residents' Briefing Session 주민 설명회," National Archives of Korea, Goseong Itai-Itai Disease Related Documents 국가기록원 고성이타이관계철 (2004), 126.

⁵⁷ MOE S&G Division, op. cit., "Visit Report on the Health Issues Raised by Residents in the Abandoned Mine Areas of Goseong County, Gyeongsangnam-do 경상남도 고성군 폐광지역 주민들의 건강문제제기에 대한 방문조사 의견서," 130-133.

Table 1. Initial Findings from the Center for Water Quality and Environment

※Blood cadmium standards (General population <2, Workers <5), Urine cadmium (General population <2, Workers <5), Urine β_2 -MG (Normal <0.37)⁵⁸

Age	Sex	Blood Cadmium ($\mu\text{g/L}$)	Urine Cadmium ($\mu\text{g/g.g}^{59}$)	Urine MG (mg/L)	Blood Copper ($\mu\text{g/dL}^{60}$)
75	Male	6.64	4.89	0.23	117
76	Female	5.12	8.58	0.19	99
54	Female	3.59	6.60	0.24	108
55	Female	3.01	11.59	0.23	103
80	Male	2.88	3.80	0.26	114
70	Female	2.51	8.13	0.31	134
52	Male	1.82	8.21	0.24	173

Source: MOE S&G Division, “Residents’ Briefing Session 주민 설명회,” National Archives of Korea, Goseong Itai-Itai Disease Related Documents 국가기록원 고성이타이관계철 (2004), 96.

The briefing was attended by representatives of the local media, residents, and government officials. Director Yang emphasized the necessity of regular testing of water quality and crops in the area, citing the case of Itai-Itai disease in Japan. Some of the residents present at the briefing expressed their discontent with the media’s portrayal of the situation, which they felt could negatively impact the reputation of Byeongsan Village and hinder the sale of their crops.⁶¹ They also expressed concern over a decline in orders for agricultural products.⁶²

In response to the media reports, the MOE dispatched an on-site investigation team to Byeongsan Village. The team, led by Jeong Hoe-seok (정회석), head of the Environmental Health Policy Division at the MOE, and Kim Dae-sun (김대선), head of the Environmental Epidemiology Department at the National Institute of Environmental Research (NIER, 국립환경연구원), also included head of the Resource Development Division at the Ministry of Trade, Industry and Energy, and Paek Do-myung (백도명), a professor at Seoul National University’s Graduate School of Public

⁵⁸ MG is a type of protein called microglobulin. The emphasis in the table is by the author.
⁵⁹ In the case of “g.g,” it is estimated to be g creatinine in urine. The results of measuring substances in urine are usually corrected and expressed by creatinine concentration.
⁶⁰ The unit of measurement “ $\mu\text{g/dL}$ ” is utilized to quantify the concentration of a specific substance in biological fluids, such as blood. It is defined as the number of micrograms (μg) present in a single deciliter (dL) of fluid. A deciliter is a volume unit, equivalent to one tenth of a liter, and is frequently employed in medical and scientific contexts to assess blood concentrations.
⁶¹ MOE S&G Division, op. cit., 96.
⁶² Sang-jin Kim, “[Report on Suspected ‘Itai Disease’ in Goseong Residents] ‘Starving to Death Before Dying from Pain’ [‘이타이病’ 의심 고성 주민 르포] ‘아파 죽기 전에 굶어 죽어,’” *JoongAng Daily*, 2004. 6. 9.

Health. The team conducted interviews with officials from the Gyeongnam and Goseong, the Machang FEM, and residents of Byeongsan Village.

The MOE conducted interviews with key informants and obtained the following results. The director of the public health center and a public health doctor confirmed that the health of the residents of Byeongsan Village was within the normal range and that they exhibited common geriatric diseases. Professor Paek conducted a physical examination of the village head and one villager, and did not identify any unusual health conditions. The head of the epidemiology department conducted interviews with seven individuals (six in person and one by phone). All seven individuals reported suffering from degenerative arthritis. However, no evidence of kidney disease, broken bones, or shortness of stature, which are characteristic of Itai-Itai disease, was found.⁶³

As detailed in Paek's visit report, runoff water was observed to be emanating from the mine at the time, and dust was noted to be blowing from the tailings dump when the wind was blowing and washing away when it rained. Regarding the levels of heavy metals observed in the seven individuals, he concluded that they did not align with the typical combination of osteoporosis and decreased kidney function characteristic of Itai-Itai disease. He also suggested that due to the presence of impurities like copper, lead, and arsenic, cadmium may not have been the sole cause of the observed health issues. As a result, he argued that the likelihood of environmental contamination being the primary cause is relatively low, and that the current issue is not widespread or systematic.⁶⁴

In the year 2000, prior to this event, the MOE designated the Goseong Samsan Cheil Mine as a mine subject to a soil survey. In June 2001, the Ministry of Trade, Industry and Energy and the Ministry of Agriculture and Gyeongsangnam-do were ordered to implement two distinct projects: a mining pollution prevention project and a soil improvement project for agricultural land. This was due to the discovery of elevated levels of copper and arsenic in the underlying agricultural land, which exceeded the soil pollution control standards.⁶⁵

The MOE has stated that the likelihood of Itai-Itai disease is low based on the results of the on-site investigation, which has been widely reported in the media. The Environmental Epidemiology Department of the NIER has stated that it is not possible to diagnose Itai-Itai disease based on blood and urine cadmium concentrations alone. It has been proposed that Itai-Itai disease must be accompanied by protein and

⁶³ MOE S&G Division, op. cit., "Field Verification Report Related to the News on 'Itai-Itai Disease Occurrence' (Health Impact Related) '이따이이따이병 발생' 보도관련 현장확인 보고서 (건강영향 관련)," 126-129.

⁶⁴ MOE S&G Division, op. cit., "Visit Report on the Health Issues Raised by Residents in the Abandoned Mine Areas of Goseong County, Gyeongsangnam-do 경상남도 고성군 폐광지역 주민들의 건강문제제기에 대한 방문조사 의견서," 130-133.

⁶⁵ MOE S&G Division, op. cit., "Review of Media Coverage 언론보도내용 검토의견," 138-139.

calcium deficiency.⁶⁶ However, Kim Dae-sun, the head of the Environmental Epidemiology Department at the NIER, stated that he would respectfully consider the CIES's opinion.⁶⁷

Following the MOE's investigation to the site, the CIES also organized an investigation team and conducted an on-site visit on June 8. The CIES investigation team, led by Director Jang, included Kwon Ho-Jang (권호장), a professor at Dankook University School of Medicine who chaired the CIES's EHC, Choi Kyung-ho (최경호), a professor at Seoul National University Graduate School of Public Health who was also a member of the EHC, and Choi Ye-yong (최예용), director of the CIES. The team then proceeded to review the Machang FEM's findings and confirm the scope of the epidemiological investigation, patient questionnaires, and scale.⁶⁸

Since the 1990s, concerns about the environmental impact of abandoned mines have been a prominent feature of the discourse surrounding these sites, particularly in areas where they are located. The issue of cadmium contamination, which was identified by the local environmental organization through its own investigation, was promptly placed on the agenda as a significant environmental concern through the organization's national network. Given that the MOE had recently established a new division dedicated to environmental health concerns, it was compelled to participate in the investigation rather than ignore the issue.

Identifying Itai-Itai Disease: A Joint Commission Investigation

Following two on-site investigations conducted by the government and CIES, the MOE resolved to conduct a joint investigation in collaboration with experts from CIES. At a meeting held on June 12 between the MOE and CIES, it was agreed that the government and civil society organizations would form a joint committee (공동위원회) to conduct the joint investigation (공동조사). The following points were agreed upon with the head of the environmental policy division of the MOE, the resource development division of the Ministry of Trade, Industry and Energy, the consumer safety division of the Ministry of Agriculture and Forestry, the corporate support division of Gyeongsangnam-do, the vice county governor of Goseong-gun, Director Jang, Lee In-sik (이인식), executive chairman of the Gyeongnam FEM (경남환경운동연합), and Professor Kwon as the consensus parties.

⁶⁶ MOE S&G Division, op. cit., "National Institute of Environmental Research, Environmental Epidemiology Division, Review Results 국립환경연구원 환경역학과 검토결과," 165.

⁶⁷ Wan-bae Lee, "[Journalist's Eye] Lee Wan-bae / The Ministry of Environment's Deference to Civic Groups [기자의 눈]이완배/환경부의 시민단체 눈치보기," *Donga Daily*, 2004. 6. 10.

⁶⁸ "CIES Investigation Team on Cadmium Contamination in the Abandoned Mine Area, Goseong, Gyeongsangnam-do 경남 고성 폐광지역 카드뮴오염사건 관련 시민환경연구소 조사단," ECO Archive 환경아카이브 풀숲 (2004).

The joint committee was chaired by Ko Jae-young (고재영), head of the Environmental Policy Bureau of the MOE, and Lee In-sik. The joint research team was comprised of Professor Kwon, who led the research⁶⁹, along with two experts from the government and two experts from civil society organizations. The funding for the investigation was decided to be shared by the Ministry of Trade, Industry and Energy, the MOE, Gyeongsangnam-do, and Goseong-gun. The Ministry of Agriculture and Forestry will implement measures to remediate contaminated farmland and dispose of and incinerate agricultural products that exceed the permissible residue levels at the shipping stage. The Ministry of Trade, Industry and Energy will implement the budget for the Cheil Mine in the current fiscal year in a timely manner and prioritize and allocate the necessary funds for the remaining mines.⁷⁰

The joint investigation was unique in that it was co-chaired by both a government official and a representative from a civil society organization. Some media outlets reported that this was the first time the government conducted a joint investigation with civil society organizations on a specific environmental disease.⁷¹ Although public-private investigations had been requested and carried out by civil society since the 1990s, as environmental and development issues gained prominence, this appears to be the first time a representative from a civil society organization was appointed as one of the co-chairs. The joint public-private investigation into the Saemangeum reclamation project indicated that the project failed to stop the development of Saemangeum. Furthermore, there is a view that the public-private investigation method requires critical evaluation. In his analysis, Cho Hong-sup argues that the multifaceted dimensions of the Saemangeum reclamation project, including political, social, and cultural aspects, were reduced to a purely scientific issue as a result of the investigation.⁷² While numerous government investigations into environmental damage have been conducted in the past, they have often been superficial in their

⁶⁹ Professor Kwon, who served as the principal investigator for the study, was an expert in environmental epidemiology. His research focused on the health effects of air pollution and his expertise was sought by the EHC of the CIES. Director Jang believed that Professor Kwon would be an excellent choice to lead the study. Interview with Jang Jae-yeon (current Chairman of Korea Safety Health Environment Foundation 숲과나눔), 2024.05.28.

⁷⁰ MOE S&G Division, op. cit., "Agreement Document from the Countermeasure Meeting on the Impact of the Abandoned Mines in Goseong County "고성군 폐광산 영향" 관련 대책 회의 합의문," 234-235.

⁷¹ Ho-seop Kim, "Government and Environmental Coalition Conduct First Joint Investigation on Suspected 'Itai-Itai Disease' Symptoms in Goseong 固城 '이타이병' 의심증세 정부·환경聯 첫 공동조사," *Hankook Daily*, 2004. 6.15; In-pyo Lee, "Government and Environmental Groups Conduct Joint Investigation on 'Itai-Itai' Symptoms in Goseong 固城 '이타이이타이' 증세 정부·환경단체 공동조사," *Munhwa Daily*, 2004. 6. 15.

⁷² Hong-Sup Cho, "Environmental Controversy and the Role of Science: The Case of Saemangeum Reclamation Project in Korea 새만금 논쟁과 과학기술의 역할," *Journal of Science & Technology Studies* 과학기술학연구 4:1 (2004), 1-30.

dismissal of the issue. In contrast, the joint investigation indicates that the government was willing to assume some responsibility for the matter.

In the case of Byeongsan Village, the joint investigation method was chosen because examining the health damage to residents and preparing future countermeasures was considered more important than determining whether the health issues were caused by Itai-Itai disease. The decision to adopt a joint investigation methodology was made in response to the issue initially raised by the CIES. This approach was deemed appropriate to facilitate the active participation of civil society.

The adoption and promotion of this joint investigation approach was also influenced by the newly established Environmental Health Policy Division, which was previously discussed. The Byeongsan village case was the inaugural case that the division was tasked with investigating following its establishment. Jeong Hoe-seok, the head of the Environmental Health Policy Division at the time, asserted that the government and civil society organizations opted for a joint investigation due to the significance of the case and the impartiality of the investigation process. He further posited that it would be an opportune moment to establish a novel framework for health and environment based on the findings of a comprehensive investigation.⁷³ From the perspective of the Environmental Health Policy Division, there must have been pressure to address an incident that occurred so soon after the division's establishment.

The initial objective of the investigation was to ascertain whether an outbreak of Itai-Itai disease had occurred. However, upon further examination, it became evident that the root cause of the problem lay in the health of the residents in the vicinity of the abandoned mine. The hypothesis was that the residents would have been exposed to heavy metals from the mine through their drinking water, crops, seafood, and the air (Figure 3). Consequently, it was proposed that a comprehensive investigation be conducted to assess the health effects of the residents, with the implementation of an environmental exposure survey (환경노출조사) and a health impact survey (건강영향조사) being conducted simultaneously. The objective of the health impact survey was to ascertain the prevalence and severity of health damage caused by heavy metals. The objective of the environmental exposure survey was to identify the sources and routes of heavy metal pollution.

In addition to the aforementioned investigations, the environmental exposure survey also encompassed an examination of the degree of contamination present in agricultural and marine products. Cadmium, copper, arsenic, lead, and zinc were analyzed in both the exposed and control areas.⁷⁴ In order to “ensure the objectivity” of the analysis, the samples were not analyzed by the joint investigation team, but by

⁷³ Jin-sang Yoo, “[Policymaker] Jeong Hoe-seok, Director of Environmental Health Policy Division, Ministry of Environment [폴리시메이커] 정희석 환경부 환경보건정책과장,” *Seoul Shinmun*, 2004. 6. 21.

⁷⁴ Kwon, op. cit., (note 19).

external institutions. The laboratories utilized for this analysis were the Seoul Science Lab (SCL, 서울의과학연구소), Lab Frontier (㈜랩프런티어), Seoul Institute of Health and Environment (서울시 보건환경연구원), and the Korea Water Resources Corporation's International Tap Water Testing Center (한국수자원공사 국제수도물종합검사센터).⁷⁵ The most crucial phase in ascertaining the extent of contamination is the sample analysis. It is not uncommon in the context of environmental debates to level accusations of manipulation against sample analysis. In order to circumvent such controversies, experts who have already been involved in the investigation of Onsanbyeong and other environmental issues have adopted the strategy of outsourcing.

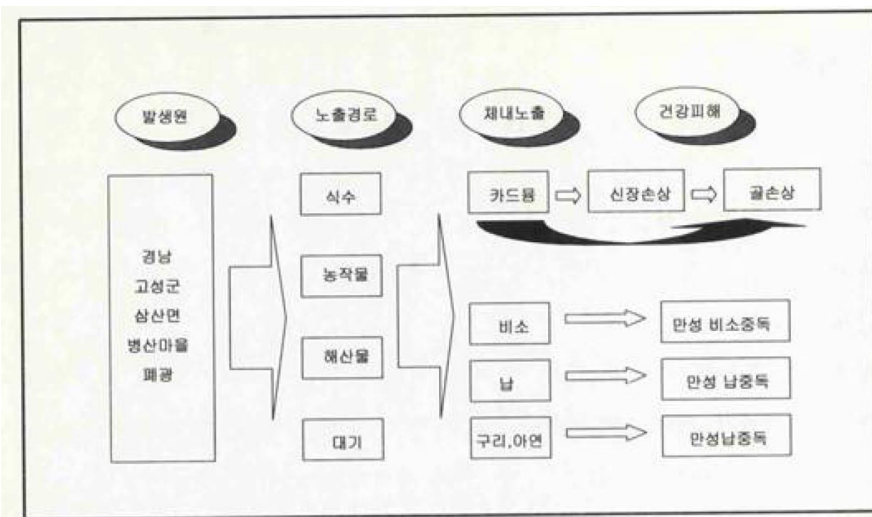


Figure 3. Scenarios of population health impacts from abandoned mines. In the scenario presented by the investigation team, the stages of health impact due to the abandoned mine are categorized and examined in four phases: source of emission, exposure pathway, internal exposure, and health effects. Source: Gyeongnam Goseong County Abandoned Mine Health Impact Joint Investigation Team, op. cit. (note 75), 2.

The official investigation commenced on July 21, and following approximately three months of investigation, the Joint Investigation Team presented the results of the epidemiological investigation at the 6th Joint Committee meeting on December

⁷⁵ Gyeongnam Goseong County Abandoned Mine Health Impact Joint Investigation Team 경남 고성군 폐광산 건강영향 공동조사단, *Health Impact Investigation of the Abandoned Mine in Byeongsan Village, Goseong County, Gyeongnam* 경남 고성군 병산마을 폐광산의 건강영향조사, December 2004, i-ii.

3.⁷⁶ The results of the epidemiological investigation indicated that it was unlikely that the residents were suffering from Itai-Itai disease. Furthermore, although some residents exhibited elevated cadmium levels, no significant abnormalities were observed. A diagnosis of Itai-Itai disease is made when three criteria are met: renal tubular (신장세뇨관) damage, bone damage, and osteomalacia with osteoporosis due to cadmium overexposure. Although there was a high prevalence of osteoporosis in patients without abnormal kidney function, it was challenging to establish a direct causal relationship.

The findings were subjected to “rigorous debate” by the joint committee. The government sought to emphasize that the disease in question was not Itai-Itai disease. Civil society organizations contended that the fact that residents’ exposure to cadmium had increased as a result of the mine was of paramount importance and should be the sole focus of the statement. The choice of wording was of significant importance, and environmental organizations found it challenging to accept the MOE’s approach of stating that there was no problem. Ultimately, the initial portion of the report indicated that the residents had been exposed to elevated levels of cadmium as a consequence of the mine’s operations, and the concluding section asserted that no cases of Itai-Itai disease had been substantiated.⁷⁷ Although these findings were significant in recognizing the potential for adverse health effects on the population, the failure to identify a specific disease caused by the pollution symbolically suggested that no harm had occurred. For Itai-Itai disease, meeting the strict diagnostic criteria requires evidence of very high levels of cadmium exposure. However, the diagnostic criteria and the issue of low-level exposure were not further investigated. This omission represents a limitation of the findings and the subsequent discussion.

In a press release on the final results, the Environmental Health Policy Division proposed measures for the abandoned mines. These included tracking the health of residents exposed to cadmium, purchasing all paddy fields and rice with detected cadmium concentrations, managing mine runoff and tailings contamination sources at the Cheil Mine and Sambong Mine (삼봉광산) as part of the Ministry of Trade, Industry and Energy’s mining pollution prevention project, and investigating the health effects on residents of other abandoned mines and nearby villages.⁷⁸

In Goseong-gun, 32 residents were monitored by Samsung Changwon Hospital following the release of the final results. A battery of basic blood tests, blood cad-

⁷⁶ MOE, “Notification of the 6th Joint Committee Meeting on the Impact Investigation of the Abandoned Mines in Goseong County Official Document 고성군 폐광산 영향조사 관련 제6차 공동위원회 개최 알림 공문” (2004).

⁷⁷ Kwon, *op. cit.*, (note 19), 338-339.

⁷⁸ MOE, “Final Results of the Impact Investigation on the Abandoned Mines in Goseong County, Gyeongnam Press Reference Material 경남 고성군 폐광산 영향조사 최종결과 보도참고자료,” December 2004.

mium, urinary cadmium, β 2-microglobulin, and bone mineral density were conducted on the subjects five times between October 2005 and October 2007. During the follow-up period, no individual exhibited a notable increase in cadmium concentration or cadmium-induced kidney dysfunction, and no individual exhibited a notable change in bone mineral density.⁷⁹ This represents a positive development, as government investigations into environmental damages are not commonly conducted retrospectively. However, given the complexity of the environmental damage, it is a limitation of the follow-up survey that it was restricted to identifying cadmium exposure.

Kwon highlighted the distinction between this investigation and previous environmental pollution cases, emphasizing the collaboration between the government and civil society organizations in addressing the issue. He observed that the MOE defined its role as that of a mediator or problem solver throughout the investigation process. Kwon suggests that the ministry took on an active role in the case due to the increased prominence of environmental health issues following the establishment of the Environmental Health Policy Division. He further notes that the investigation successfully engaged civil society and relevant experts, particularly CIES, and that the MOE was not sidelined in the process. However, despite the investigation's local origins, the central government and a network of national environmental organizations emerged as the principal actors, thereby diminishing the influence of local residents and environmental groups.

He assessed that although the case was highly confrontational with various stakeholders, including local residents, victims, civil society, the MOE, the Ministry of Trade, Industry and Energy, and experts, the formation of a joint committee and a joint investigation team allowed for a trust-based resolution. Furthermore, he highlighted the significance of the epidemiological investigation method and follow-up procedures employed in the Goseong abandoned mine case, as they served as a model for the health impact investigation of local residents of waste metal mines nationwide.⁸⁰

However, as Kwon notes, the influence of environmental organizations was relatively diminished, and the government assumed a leading role in addressing environmental pollution cases.⁸¹ In the early days of the participatory government, the first joint investigation between environmental organizations and the government was initiated by a civil society complaint. However, this participatory model has proven to be challenging to maintain. Currently, epidemiological investigations are conducted exclusively by the government in cases of local environmental pollution, and causality is not recognized in the majority of cases. A systematic review of the numerous subsequent environmental investigations would be required to conduct an

⁷⁹ Kwon, *op. cit.*, 339.

⁸⁰ *Ibid.*

⁸¹ *Ibid.*, 340.

adequate assessment of the impact of the Goseong case. As the involvement of civil society in government-formed investigative committees as co-representatives has become increasingly constrained, it will be necessary to examine whether the experience of the Goseong case has been replicated in subsequent years, taking into account the institutionalization history of the Korean environmental movement.

The Contribution of Abandoned Mine Issues to the Institutionalization of Environmental Health Policy

As previously discussed, the Byeongsan Village incident raised awareness of the environmental and health issues caused by abandoned mines in South Korea. This event subsequently influenced the development of environmental health policy and mine pollution management policy in the country. Notably, experts who participated in the CIES EHC and the Byeongsan Village Investigation Committee were involved in the research for the MOE's comprehensive plan. A review of the background and necessity for the establishment of this comprehensive plan indicates that the health issues raised by residents living near abandoned mines were explicitly acknowledged. This demonstrates that, following the Byeongsan Village incident, the MOE began to recognize the abandoned mine issue as a significant concern, an issue that had been raised since the 1990s.

Experts involved in the Byeongsan Village investigation and the subsequent shaping of environmental health policy consider it a successful investigation, and its impact on shaping policy has been positive. Director Jang particularly highlighted the fact that the investigation resulted in the implementation of a nationwide abandoned mine management policy.⁸² As Yang summarizes, in 2005, the Act on the Prevention and Reconstruction of Mining Damage (광산 피해의 방지 및 복구에 관한 법률) (Mining Damage Prevention Act, 광해방지법) was enacted, and the Mine Reclamation Corporation (MRC, 한국광해관리공단), an agency under the Ministry of Trade, Industry and Energy, was established as the lead agency.⁸³ The MRC was initially designated as the Mining Damage Prevention Corporation (광해방지사업단), and Jang served as a non-executive director on the preparatory committee for the establishment of the Mining Damage Prevention Division.⁸⁴ From the outset, Jang has been advocating the implementation of fundamental measures to address the issue of abandoned mine

⁸² Interview with Jang Jae-yeon (current Chairman of Korea Safety Health Environment Foundation 숲과나눔), 2024. 5. 28.

⁸³ Yang, "Mining and Environmental Pollution" (note 9).

⁸⁴ Seong-ho Lee, "Preparatory Committee for the Establishment of the Mining Damage Prevention Corporation Held 광해방지사업단 설립준비위 개최," *Korea Energy 한국에너지*, 2005. 6. 10.

pollution, a concern that was first raised in relation to mines in Goseong.⁸⁵ Consequently, he participated in the process of establishing an organization to prevent mine pollution and engaged in activities to prevent health problems caused by abandoned mines. At the outset of the mining damage prevention project, there were 732 active mines (9 coal mines) and 1,244 dormant and abandoned mines (338 coal mines), for a total of 1,976 mines nationwide.⁸⁶

In October 2004, concurrent with the Byeongsan Village investigation, the MOE assembled a specialized research team with the objective of developing a comprehensive plan for environmental health policy. The research team was constituted into seven units, comprising over 30 experts in fields including preventive medicine, public health, and toxicology. The plan's development entailed a workshop to assess the draft plan in April 2005, public hearings, the study teams' final report (July 2005), and consultations within the MOE, with experts, and with relevant ministries. In January 2006, following the completion of the agenda and consultations by the Environmental Health Advisory Committee (EHAC, 환경보건자문위원회), the MOE proceeded to finalize and announce the Comprehensive Plan in February.⁸⁷

In April 2005, the EHAC was established by the MOE. The EHAC was a committee of experts in related fields, whose role is to develop specialized policies and provide advice on environmental health policy. The committee was constituted with 17 members, including the chairman of the government side - Director of the MOE's Environmental Policy Office, Professor Paek, Professor Kwon and Director Jang, and Professor Shin Dong-chun of Yonsei University College of Medicine. The inaugural meeting of the committee, convened on April 14, saw the formulation of policy recommendations pertaining to the mitigation of pollution and associated health impacts arising from the proliferation of waste metal mines across the country.⁸⁸

As previously stated, in 2006, the MOE published the "10-Year Comprehensive Plan for Environmental Health Policy," which serves as a mid- to long-term roadmap for the systematic establishment and promotion of environmental health policy. This plan is based on the final report of the "10-Year Comprehensive Plan for Environmental Health Policy Study," which was submitted to the MOE in June 2005. The

⁸⁵ Jae-yeon Jang, "[Editorial] Create Fundamental Solutions for Abandoned Mine Pollution [시론] 폐광 오염 근본대책 만들라," *JoongAng Daily*, 2004. 6. 7.

⁸⁶ Preparatory Office of the Mining Damage Prevention Corporation 광해방지사업단 준비사무국, "Draft Plan for the Establishment of the Mining Damage Prevention Corporation 광해방지사업단 설립계획(안)," July 2005.

⁸⁷ Yeonhapnews, "Summary of the 10-Year Comprehensive Plan for Environmental Health 환경보건 10개년 종합계획 요약," http://img.yonhapnews.co.kr/etc/press/PR/2006/0000487060203085336_1.pdf (accessed on August 23, 2024).

⁸⁸ MOE, "Operation of the "Environmental Health Advisory Committee" for the Full-Scale Promotion of Environmental Health Policy 환경보건정책 본격추진을 위한 "환경보건자문위원회" 운영," April 2005.

research project was organized by IERY and CIES, with researchers from a number of different medical schools, colleges of health, pharmacy, environmental engineering, environmental policy and law, and CIES.⁸⁹

The one sub-objective of the study was to develop a support system for environmental disease countermeasures with the aim of reducing the risk population in areas prone to pollution. Researchers have pointed out that while epidemiological investigations have been conducted in response to suspicions of environmental diseases arising from pollution in industrial areas, abandoned mines, incinerators, and landfills, these investigations were often hastily conducted in response to public outcry. As a result, rather than thoroughly identifying environmental diseases, many of these efforts were more focused on managing the situation to quell public concern. The researchers posit that a systematic investigation of the causes and the implementation of appropriate countermeasures should be conducted as part of an environmental health policy. In particular, abandoned mines and industrialized areas are in urgent need of preventive investigations and countermeasures, as there is a significant risk of environmental diseases among local residents due to prolonged pollutant emissions and exposure. The researchers observed a notable increase in complaints and concerns related to heavy metal pollution, citing several cases as evidence. These include the suspected outbreak of Itai-Itai disease in Goseong, the rise in pollution-related diseases in the Gwangyang Bay area, and the Sucheol mine in Gyeongbuk.⁹⁰

In the background and necessity of the plan, the comprehensive plan points out that the paradigm of environmental policy needed to change due to the socialization of environmental health issues. In particular, it elucidates that residents in the vicinity of industrial complexes and abandoned mines have voiced concerns regarding health damage and serious worries about environmental diseases, including atopic skin diseases and asthma.⁹¹ Detailed information regarding the occurrence and relevance of the abandoned mine issue can be found in the section on the comprehensive plan. The task, entitled “Health Impact Assessment and Risk Population Reduction in Contaminated Vulnerable Areas (폐광 지역 건강영향조사 및 위험인구 감소),” is proposed as the inaugural project. The background of this project can be summarized as follows: 1) There is a growing concern about the potential health risks associated with heavy metal contamination in more than 900 abandoned mines across the country. This is particularly evident in the case of residents of abandoned mine areas in Goseong, who have raised suspicions of illness due to their proximity to these mines. 2) In response, the health effects of heavy metal abandoned mines with high health

⁸⁹ The study was led by Shin Dong-chun, director of IERY, and Jang Jae-yeon, director of KFEM CIES.

⁹⁰ MOE, “10-Year Comprehensive Plan for Environmental Health Policy Study 환경보건정책 10개년 종합계획 연구,” June 2005, 143.

⁹¹ MOE, “2006-2015 10-Year Comprehensive Plan for Environmental Conservation 2006~2015 환경보건 10개년 종합계획,” February 2006, 3.

concerns are investigated annually based on the results of basic soil contamination surveys. The Comprehensive Plan proposes the implementation of annual environmental and resident health impact surveys of 26 highly contaminated abandoned metal mines across the country as the primary project content. Additionally, it suggests the conduction of environmental impact, crop and water system surveys in regions surrounding abandoned mines, as well as comprehensive health impact surveys comprising medical examinations, questionnaires, and blood and urine heavy metal concentration assessments.⁹²

As several studies have already demonstrated, the establishment of the Environmental Health Policy was followed by the enactment of the Environmental Health Act.⁹³ Since few countries have established legal frameworks that assign policy responsibility for environmental health, this is considered a proactive piece of legislation. The rationale behind the Environmental Health Act explicitly specifies “health damage to local residents living near industrial complexes and abandoned metal mines.”⁹⁴ It is evident that the health concerns associated with abandoned mines, as exemplified by the Byeongsan village case, have shaped environmental health policy and the enactment of related legislation.

The existence of a single division within a government department does not necessarily indicate that the specific policy has been fully implemented. However, the situation with MOE’s environmental health policy was somewhat distinct. The necessity for supervision of environmental health concerns increased following the establishment of the division, largely due to the challenges posed by the contamination of abandoned mines. This led to a convergence of demands from experts in the field and civil society. This prompted the MOE to devise a comprehensive plan for the particular implementation of environmental health policies, which were subsequently codified in legislation.

Conclusion

The abandoned mine issue highlighted by the Byeongsan Village investigation significantly impacted the development of environmental health policy in South Korea. This paper examines how experts within the CIES EHC successfully established and expanded the “environmental health” agenda during this process. The Byeongsan Village investigation, in particular, adopted a joint investigation format, allowing experts from civil society to take on an active role. The investigation and resolution of the Byeongsan Village case, along with the subsequent policy-making process,

⁹² MOE, February (2006), op. cit.

⁹³ Han and Jang, op. cit., (note 31); Lee, op. cit., (note 22); Kang, Kim and Park, op. cit., (note 21).

⁹⁴ Environmental Health Act 환경보건법, Effective March 22, 2009, Act No. 8946, Enacted March 21, 2008.

were closely connected to the profound changes in Korean society during the early 2000s. With the inauguration of the “participatory” government, civil society and relevant experts were able to actively engage in the joint investigation. This is exemplified by the newly established Environmental Health Policy Division’s rare decision to appoint a civil society co-chair.

The interactions between civil society and the government that began in the 1990s were expanded, and by the 2000s, significant collaboration and alliances between social movements and the government had been established. In June 2000, to mark the new millennium, the Kim Daejung administration declared the “New Millennium National Environmental Vision for Realizing a Life Community Where Humans and Nature Coexist (‘인간과 자연이 더불어 사는 생명공동체’ 구현을 위한 ‘새 천년 국가환경비전’ 추진계획).” The implementation plan, announced in 2001, included measures to expand the participation of citizens and civil society organizations in policy-making.⁹⁵ Additionally, there was a shift from economic development-oriented policies to the idea that Korea should leap forward to become a “developed country” by the year 2000. This broader trend also encompassed a shift towards environmental health policy.

Nevertheless, the shift toward a “health”-oriented environmental policy and the successful investigation of Byeongsan Village paradoxically created a pathway for the government to identify health damage and closely examine causal relationships when local environmental problems emerged. Through the investigations of asbestos and humidifier disinfectant damage, verifying health damage and establishing causality have become mandatory starting points for addressing many environmental issues.⁹⁶ While the CIES and its director, Jang Jae-yeon, who advocated for the professionalization and scientization of the environmental movement to better represent residents’ voices, played a pivotal role in establishing environmental health policy in Korea, the process of addressing environmental health issues has increasingly leaned toward the ‘scientific confirmation’ of health effects.

This trend is partly due to changes in the Korean environmental movement. Since the 2000s, the movement has become institutionalized, providing more avenues for environmentalists to participate in the policy-making process. However, this emphasis on governance and participation has diminished the influence of grassroots environmental movements.⁹⁷ In commemoration of the 30th anniversary of the Korean environmental movement, numerous voices within environmental organizations and

⁹⁵ MOE, “New Millennium National Environmental Vision for Realizing a Life Community Where Humans and Nature Coexist ‘인간과 자연이 더불어 사는 생명공동체’ 구현을 위한 ‘새 천년 국가환경비전’ 추진계획,” February 2001.

⁹⁶ Kang, Kim and Park, op. cit., (note 21).

⁹⁷ Deok-hwa Hong, “The Korean Environmental Movement at a Crossroads Again 다시 갈림길에 선 한국 환경운동,” *Proceedings of the 2023 The Korean Association for Environmental Sociology Annual Conference Tasks of Environmental Sociology in the Era of Ecological Transition 2023년 한국환경사회학회 정기학술대회 생태전환시대, 환경사회학의 과제* 자료집 (2023).

environmental sociology have called for reflection on the past, present, and future of environmentalism in Korea. Choi Ye-yong, who began his activism as an anti-pollution advocate and is now engaged in environmental health activism, has expressed concern about the decline of local, resident-centered movements.⁹⁸

As civil society, activists, and experts envisioned in the 1990s, can residents and civil society still generate and gather knowledge to address environmental problems in the face of health damage? The case of Byeongsan Village highlights both the effectiveness and limitations of public-private collaborative research methodologies, prompting a reassessment of the future trajectory of environmental problem-solving and research.

This paper does not address the cumulative and ongoing contamination of mining sites from before the 2000s. The numerous instances of scientific debate surrounding diseases caused by heavy metal contamination require further, multifaceted research. However, by elucidating the successive actions of pertinent civil society and experts during the emergence and formation of environmental health policies in the 2000s, this paper has traced the origins of the current situation in which most environmental issues in Korean society are framed within the policy and discourse of “environmental health.”

⁹⁸ Interview with Choi Yeyong (current director of ACCEH 환경보건시민센터), 2024. 2. 21.

Abstract

In the early stages of Korean environmental policy, the focus was primarily on managing water, air, and soil, with health issues largely overlooked. However, by the early 2000s, growing awareness of risks from environmental hormones and hazardous chemicals, coupled with increased interest in healthy lifestyles, led to a significant shift in the Ministry of Environment's approach. This shift resulted in the expansion of the chemicals department and the creation of a division dedicated to environmental health. A pivotal moment occurred in June 2004, when health concerns from an abandoned mine in Goseong prompted a joint investigation by the government and civil society. This investigation highlighted the need for health-centered environmental policies and set the stage for nationwide mine surveys and the Environmental Health Act. This paper examines the significance of the Byeongsan Village investigation in shaping South Korea's environmental health policy in the early 2000s. By analyzing this case, which marked a shift in societal focus toward mineral pollution, this paper explores the broader implications of the move towards health-centered environmental policy and its impact on the institutionalization of environmental health agenda.

Keywords: pollution, environmental policy, joint investigation, Itai-Itai disease, heavy metal