

Paper ID	291
Author(s)	Hiromi Mizuno
Title	Soil, Meiji Japan, and the Metabolic Rift
Abstract	
<p>Most environmental historians and Capitalocene scholars critique agriculture's over-dependence on chemical fertilizer and blame German chemist Justus von Liebig, the "father of agricultural chemistry," for this "N-P-K mentality." Less recognized is Liebig's later concern for the broken nitrogen cycle. Karl Marx picked up "the metabolic rift" from the later editions of Liebig's seminal work, <i>Organic Chemistry and Its Application to Agriculture and Physiology</i>, which praised Japanese agriculture for its use of nightsoil, in contrast to British urbanites whose waste polluted River Thames. Nevertheless, Liebig could not have predicted that, by the early 20th century, Japanese agriculture would become one of the heaviest chemical fertilizer-dependent ones in the world.</p> <p>My paper explores new ways to understand this transformation, by highlighting the "modernization of soil" in Meiji Japan and incorporation of soil into the nation's biopolitics. Historians have examined Meiji modernization in terms of rapid industrialization and regarded agriculture as a lagging sector. This is obviously wrong, because rice productivity greatly increased during the Meiji period, and this was not only a result of new seed varieties and the techniques developed by rōnō, landowning farmers who devoted their wealth and time to agricultural improvement. My paper addresses the role of agricultural chemistry introduced by German chemists who trained the first generation of Japanese academic agronomists at the newly established university in Meiji Japan. I discuss how the new academic agronomy understood soil to be something to be disciplined, managed, and made productive as part of modern Japan's biopolitics.</p>	
Keywords	Agriculture, Soil, Nitrogen, Chemistry, Agronomy

Paper ID	142
Author(s)	Sanghyun Park
Title	The 'Sensing Politics' of Pollution: The Two Worlds of 'Science' and the Body in the 1991 Nakdong River Phenol Pollution Incident in South Korea
Abstract	
<p>This paper examines the normative politics surrounding the contested meanings of pollution and the proposed solutions during the Nakdong River phenol pollution incident of 1991. It introduces the concept of 'sensing politics,' drawing on Science and Technology Studies (STS) literature on sensing practices. This concept explores how diverse ways of sensing pollution—each revealing distinct aspects—gain credibility and shape the recognition of problems and the formulation of solutions. Pollution incidents are thus framed as a 'world-making' process, wherein actors reconfigure the human-nature relationship and construct social norms and orders aligned with proposed solutions. This paper investigates the human-nature relationship and social norms constructed through certain sensing practices during the 1991 incident. Two distinct approaches to sensing emerged. Government officials and environmental experts relied on quantitative measurements of water quality, using data to regulate pollution levels numerically. In contrast, citizens—particularly pregnant women—perceived pollution through their bodily senses, defining it as the degradation of their surrounding ecosystem. However, the government and experts dismissed these sensory claims, privileging quantifiable 'scientific' knowledge. Similarly, environmental activists, rather than emphasizing citizens' bodily senses, appropriated the</p>	

measurement framework, advocating for more ‘scientific’ policies. This approach inadvertently contributed to the development of government-led, measurement-based environmental management systems. By producing measurable pollution, the government addressed global environmental regulations in the 1990s while maintaining its focus on economic growth. Ultimately, this measurement-based ‘improvement,’ which marginalized sensory experiences while creating a shared space with opposing voices, contributed to the reconstruction of South Korea's developmentalism.

Keywords	Water, Disasters, Environmental Movement, Measurement, Sensing
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Paper ID	210
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Author(s)	SM Manzoor Ahmed Hanifi and Arefin Mizan
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Title	Environmental change and maternal and child health vulnerabilities: A historical perspective from coastal Bangladesh
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Abstract

Chakaria, a distinct coastal region in Bangladesh characterized by a diverse ecological landscape comprising hills, coastal plains, and extensive river networks, has experienced significant environmental transformations driven primarily by large-scale deforestation for shrimp aquaculture expansion and tobacco cultivation. Over recent decades, critical environmental parameters have changed notably, including rising surface water and soil salinity, shifts in vegetation patterns, increased land surface temperatures, and variability in rainfall patterns. These environmental shifts have raised substantial concerns regarding their implications for public health, particularly for vulnerable groups such as women and children.

This study investigates historical and ongoing environmental changes in Chakaria and their associated impacts on health vulnerabilities, specifically focusing on pregnancy outcomes among women and child mortality rates in low-lying areas. Utilizing longitudinal health data from the Chakaria Health and Demographic Surveillance System (HDSS) alongside various open-source environmental datasets, we examine the links between environmental stressors and adverse pregnancy outcomes and child mortality.

Our findings indicate that prolonged exposure to environmental degradation, especially heightened water and soil salinity, significantly correlates with adverse pregnancy outcomes, and increased child mortality rates in low-lying coastal areas. Understanding the historical trajectories of environmental changes and their health impacts in Chakaria provides essential insights for policymakers and underscores the need for integrated, interdisciplinary strategies aimed at reducing climate-related health vulnerabilities among women and children in similar coastal settings.

Keywords	Water, Humans
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