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**In and Beyond the Locality:
Policy and Social Responses to Water
Pollution Health Hazards in China**

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Abstract

This article investigates the interaction process between policy and social responses to water pollution health hazards in China, focusing on the case of the Huai River Basin. Since the 1970s, rural communities in the basin have suffered from persistent water pollution health hazards. Through a critical review of the interactions between policy and practices, this article reveals how these two approaches coevolved in the cooperative sphere, that is, a quasi-public sphere under fragmented authoritarianism in China supported by the state, media and environmental non-governmental organizations to address the ecological disaster in and beyond the basin. Additionally, a disconnect between practices in the locality and the policy beyond it can be observed as another side of fragmentation in the field of environment and health issues. Grassroots “micropolitics” such as dialogue, negotiation, cooperation with polluters and local authorities, and innovation as an alternative to the official public work based on social and ecological knowledge are examined to overcome this fragmentation.

Keywords: water pollution; environmental health hazard; environmental policy in China; cooperative sphere; policy and practices; social and ecological knowledge

JEL classification: I14, L31, O44, P28, Q53, Q56, Q57, Q58

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Introduction

Water pollution is one of most serious environmental problems in contemporary China: persistent water pollution due to rapid industrialization, urbanization and use of chemicals in agriculture has damaged the ecological environment along many rivers and lake basins in the country and, in the worst cases, caused serious health hazards to rural communities (Economy 2004; Turner and Otsuka 2006).

Creating access to clean water is one of China's most urgent tasks to satisfy the basic needs of the country's citizens, especially in rural areas. There is a serious lack of access to safe, clean drinking water in rural communities, which is causing critical problems in many communities and threatening lives and livelihoods. This lack of access is due partly to the natural and geographical water supply conditions and partly to human factors caused by economic conditions and the development of industries without efficient wastewater treatment.¹ Frequent environmental accidents and disputes also contribute to the water crisis in many parts of the country.

Furthermore, persistent water environmental pollution has caused serious health hazards to some rural communities in the country. Journalists, non-governmental organizations (NGOs), and scholars inside and outside China have paid close attention to disastrous situations such as the "Cancer Village", where the high rates of cases of and deaths from cancer since the 1990s are suspected to be caused by heavy environmental pollution (Economy 2004; CCTV Xinwen Pinglunbu 1998). In 2011, the "National Environmental Protection 12th Five-Year Working Plan on the Environment and Health" was launched to invest in a national survey on environmental pollution and health damage in the country in the next five years. This plan has acknowledged that water pollution is a major risk for human health in rural communities in China. Although the epidemiological cause-effect relationship in "cancer villages" reported by media is not always clear but often arguable (Lora-Wainwright 2010; Chen et al.2013), the Ministry of Environmental Protection admitted in an official document in 2013 that a number of cancer villages have resulted from persistent excessive water pollution². A clear association between increasing water pollution and death from digestive system cancers in the Huai River Basin has been shown through several years of efforts by an epidemiological study team (Yang and Zhuang 2013). Water pollution has already developed seriously to an extent that could pose a significant health risk that

¹ A report was uploaded at www.npc.gov.cn on July 11, 2012. <http://www.sdpc.gov.cn/zcfb/zcfbghwb/201402/P020140221360445500781.pdf>. Accessed 29 August 2015.

² http://www.mep.gov.cn/gkml/hbb/bwj/201302/t20130220_248271.htm. Accessed 29 August 2015.

deteriorates people's welfare and, in the worst case, results in death. This risk has been distributed unequally throughout China.

The failure or success of environmental policy in China has already been discussed in several studies; however, very few have focused on an integrated field of environment and health in that context. This article will focus on this challenging field in terms of state-society interaction to address human health damage caused by severe water pollution that has produced many cancer villages in the basin of the Huai River.

State–Society Interaction to Address Water Pollution Health Hazards in the Huai River Basin

This article will focus on this complicated process of state-society interactions in the field of environment and health issues (Lora-Wainwright 2010; 2013; Holdaway 2010; 2013; Fürst and Holdaway 2015) through a case study in the Huai River Basin.

The Huai River Basin, which is located in the eastern part of China between the Yellow River Basin and the Yangtze River Basin, has suffered from floods and droughts for hundreds of years. Because of the frequent natural disasters and the lack of effective measures against them, the basin has suffered from a “lack of development” and “economic depression.” (Wu 2005; Ma 2011) After the founding of the People's Republic of China (PRC) in 1949, central water project development has reduced the risk of the damage from natural disasters to a certain extent. Since the 1970s, however, as China has opened up and developed, increased industrial, urban, and agricultural activities have led to a rapid deterioration in water quality in the rivers and other water bodies and increased new risks to the basin (SHSW 2007). In 2013, the China Center for Disease Control (CCDC) and the Institute of Geographic Sciences and Natural Resources Research (IGSNRR) of the China Academy of Science jointly published their academic research results, including digital map data, and revealed a clear association between the heavy water pollution in the area and the digestive cancer death rate in the basin (Yang and Zhuang 2013). From an epidemiological perspective, a cause–effect relationship between the increasing water pollution and the digestive cancers in the basin has been suggested, although there are still many “missing links” to provide further scientific evidence (Yang and Zhuang 2013).

The Huai River Basin has been a State Priority River Basin for enhanced water pollution control, with the total COD load control regulation in the whole basin first being designated by the State Council in the 1990s. Since that time, central and provincial governments have not only enhanced their enforcement of industrial pollution controls, for example, by shutting down small heavily polluting factories and

banning all industrial effluents exceeding the national standard, but also heavily invested in water environmental projects in the basin, such as industrial pollution control, urban waste treatment plants, drinking water source improvements, rural non-point source controls, and ecological regeneration along the watercourses. The total investment from the 9th to 11th Five-Year Plan was 72.855 billion RMB over the 15 years from 1996 to 2010, and there are still ongoing projects in the 12th Five-Year Plan (2011–2015).³ Following this state priority policy in the basin, an intensive environmental campaign was conducted by the central news media, which disclosed the serious health hazards of heavily polluted water environments that have led to a rise in cancer villages in the river basin (Otsuka 2007). Additionally, a local ENGO called the “Guardian of the Huai River” spoke about the local reality of ecological disaster in the basin through media, as well as their own street photo exhibitions.

This article examines state policy to review how the state has responded to the pollution health impacts and enhanced pollution control measures, and it also examines the social responses from the local voices and actions, and, in particular, the role of the local ENGO that has been working on water pollution and its related health hazards in one county in the Sha-Yin River area, the largest tributary of the Huai River, where many cancer villages are found. Through these examinations, this article seeks to reveal how the state, media, and the ENGO have interacted to address the environment and health issues in and beyond the locality.

This article is based on the author’s continuous research over many years, through the collection of related official documents and several field visits to the county’s cancer villages to learn about the ENGO’s practices. Because of the political sensitivity of this health hazard issue in this area, I could not stay long in the county nor have intensive contact with the villagers in each visit⁴. To make up for this gap in my field research, I collected related articles written by journalists and the founder of the ENGO⁵ and conducted interviews with related scholars, representatives of companies, and collaborators of the ENGO including villagers. In terms of the state-society interactions in the field of environment and health, we should have focused more on victims and other residents, as well as local officials independently under the severe constraints of fieldwork. This lack of independent surveys for them limits my understanding of the local situation.

In the next section, this article will reveal state-society interactions in two stages. In

³ See official documents of each plan.

⁴ For example, a team of scholars and journalists outside the province had to leave a cancer village after being chased by the public security in October 2014.

⁵ My field research was conducted in August 2004, July and November 2005, August 2012, March and October 2013, November 2014, and November 2015.

the first stage, the state responded to the local situation, but it did so indirectly and without disclosure of these issues to the public. In the second stage, the state launched an environmental campaign through media and disclosed to the public that the health hazard was probably caused by persistent water pollution inside and outside the basin. Following the depiction of these stages' development, we will analyze complicated interactions between state, media, and the local ENGO to address the ecological disaster with health hazards in and beyond the locality.

State Responses to the Local Situation without Information Disclosure

Water pollution accidents were reported in the basin as far back as the 1970s (SHSW 2007), and in the 20 years until the 1990s, there were over 100 incidents that resulted in the cessation of industrial operations, the death of fish, disruptions in water supply, and a rise in human health hazards. In 1974, the local government officers in Bengbu, which is located near the main stream of the Huai River, organized a petition to the then-Vice Prime Minister, Li Xiannian, appealing for a solution to the serious river pollution (SHSW 2007). Responding to that local appeal to the state, the State Council issued a research report by the Secretariat Office of the State Council Leading Group on Environmental Protection in 1975, which proposed assigning a new water resource protection task for the Huai River to the branch office of the Huai River Control Planning Group under the authority of the Ministry of Water Resources and Electricity. Soon after that, the Water Resources Protection Office was established when the Planning Group was reorganized as the Huai River Control Commission in 1975 (SHSW 2007). This was the predecessor to the Water Resources Protection Bureau of the Huai River Water Resources Commissions (HRWRC).

It should be noted that the environmental administration in China was launched recently, and its institutional building was under construction at that time. The new functions vested in the branch office were limited to research, monitoring, and river water quality analysis. Along with the development of the water monitoring network in the basin and the launch of the environmental protection administration in the late 1970s, a demarcation between water resource administration and environmental protection was clearly defined, as the former was to be in charge of the surface water quality in the major rivers, while the latter was to be in charge of the industrial wastewater and the surface water quality of the urban rivers (SHSW 2007). However, no division in either administration was assigned at that time to take responsibility for the health damage from the heavy water pollution. Additionally, a national health survey of "mortality from main death causes in China" had been conducted in 1970s and was the basis for

another epidemiological survey on water pollution and cancer death in the Huai River Basin conducted in 2005⁶. However, information about health hazards caused by environmental pollution not only in the Huai River Basin but also in other parts of the country were not disclosed under the “the majority of reports should be positive” (*zheng mian baodao wei zhu*) policy for many decades.

Opening a Pandora’s Box through State Initiative Environmental Campaigns

In the first half of the 1990s, the serious health hazard situation in the Huai River Basin was revealed to the Chinese public: the news program *Xinwen Lianbo* was broadcast by CCTV every evening and examined the serious water pollution in two upper stream Huai River tributaries: the Hei River and the Hong River. The story ran for two successive days in October 1993. It showed the deaths of all fish and shellfish in the area as a result of the non-treated wastewater that was being dumped into the rivers by pulp plants and other industries and exposed the higher comparative rates of birth defects and mortality from cancer among the villagers who had been drinking the polluted river water (Otsuka 2016). In the same year, an environmental protection campaign called “The Century Walk for Environmental Protection in China” was launched through an initiative of the Committee on the Environment and Natural Resource Protection (CENP) of the National People’s Congress and by an authority in the Propaganda Department of the China Communist Party and the Department of Radio, Cinema and TV at the State Council (Otsuka 2007). This campaign was conducted through the major news media to raise public awareness of environmental protection (*China Environment Yearbook* 1994, 12). and is considered the first event disclosed widely for the public through the media in terms of health hazards probably caused by persistent environmental pollution (CCTV *Xinwen Pinglunbu* ed. 1998).

Prime Minister Li Peng responded quickly to the CCTV news program by instructing the related parties to push for stricter regulations against the dumping of industrial effluent into the Huai River, which included a ban on dumping industrial effluent beyond the national standard by 1999 and an on-site inspection led by the chief of the State Council Committee on Environmental Protection (CEP), Song Jian, to ensure that all parties followed Prime Minister Li’s instructions. The industrial regulation target was soon accelerated the schedule by two years after a serious pollution accident in 1994, in which over 1.5 million residents along the Huai River lost access to safe drinking water (*China Environment Yearbook* 1995, 441, *China Water Resources Yearbook* 1995, 225).

⁶ An Interview with former director of the CCDC in January 2013.

The news of this drinking water crisis was publicized through two major Party-sponsored newspapers, the China Youth Daily and the People's Daily (*China Youth Paper*, at 4 August, 1994; *People's Daily*, at 13 August, 1994). This series of events in the first half of the 1990s resulted in the development of intensive countermeasures against the Huai River water pollution.

From the on-site inspection reports in 1994, it is evident that government leaders mentioned some facts about the health hazards in the basin (SHSW 1996). Song said in a speech, "In some places, the cancer incidence is more than ten times above the national average, and the children are the most affected"; "Along the Kui River, 18 townships, 250 villages, 780 communities and nearly 500 thousand residents are injured in mind and body, and also about 1 million mu (1 mu=2/3 are) of land has been affected by the pollution." (SHSW 1996, 125) Zhang Jusheng, Vice Director of the HRWRC said, "The underground water along some heavily polluted rivers has been affected and the rural people have drunk this polluted shallow well water for a long period. For example, in Peng Chuan village in Jiangsu Province along the Baima River, the cancer incidence is high at 500 cases per 100 thousand people, and in the Su Xian district of Anhui Province along the Kui River, the cancer incidence is high at 1024 cases per 100 thousand people (SHSW 1996, 133). Provincial leaders also mentioned these facts. Zhang Honghua, Vice Governor of Henan Province, said, "According to the investigation, in our province in the Huai River Basin a lot of people are drinking polluted water and among them there are over 460 thousand people along the Hei River. Due to the shallow well water having been polluted, the incidence of disease, mortality, and the rate of malformation is increasing among the people drinking the polluted water, and thus, the health of the minds and the bodies of the people in the river basin is under serious threat" (SHSW 1996, 135). Although these government officials mentioned incomplete data on the health hazards in the basin, they may have obtained this basic data from the village health surveys along the rivers and also known that this unusual human health situation was related to the heavily polluted waters.

The comprehensive data mentioned in their reports cannot be found in any official publications. However, some scientific articles about the Hei River were published in academic journals, which were the basis for the news broadcast by CCTV in 1993. Professor Liu Hualian of Henan Medical University led a research team in an epidemiological survey in Shang Cai township along the Hei River as well as in Hedian township 10 kilometers from the river as a reference to reveal that the mortality in general and from cancer, the malformation rate, and the incidence of liver tumors were higher than in the reference township, thus proving that the health problems of the people in the county were caused by the river water pollution (Liu et al. 1995).

Following this survey, her team revealed in 1999 the carcinogenicity and toxicity of the organic matter found in the well water used for drinking and in the river water (Wang 1999). These reports and studies provided evidence that proved the basic cause-effect relationship between the heavily polluted water and the serious health problems in parts of the basin in the 1990s.

Thus, the environmental campaigns instigated through a state initiative and by the authority of the Party opened a “Pandora’s Box” to the reality of the serious and increasing health hazards caused by the heavy water pollution in the basin, which had not been previously disclosed to the public under the state secret policy for pollution disease (*gonghai bing*) (Otsuka 2007).

Interactions between the State, Media, and ENGO to Address Ecological Disaster

After the disclosure of the serious environmental health problems and the polluted drinking water crisis in the Huai River Basin in 1994, water pollution control was pushed by the state as a policy response to encourage the enforcement of industrial and urban wastewater regulations.

The state policy responses included institutional reform and buildings, such as the reform of the Leading Group on Huai River Basin Water Resources Protection established in 1988; enactment of the Tentative Regulation of Water Pollution Control in the Huai River in 1995 to ban industrial effluents beyond the national standard by the end of 1997 and small heavily polluting factories, and the launch of the 9th Five-Year Plan (1996–2000) for Water Pollution Control in the Huai River to urge provincial and local governments to implement total COD load control regulations across the whole basin and to promote public investment in water environmental projects.

Another policy response was state agencies’ continuous inspection of local governments and industries along with intensive news media campaigns. At the end of 1997, when all industrial effluent beyond the national standard should have been banned, the NEPB initiated an intensive inspection called “Zero Action” jointly with CCTV, and major central newspapers also wrote nearly 300 related articles (*China Environment Yearbook 1998*, 297). Through this news media action, the progress of the state policy and problems were revealed. In 1996, the State Council had issued its Decision on Environmental Protection, which requested that all industries in the country meet their effluent national standard by the end of 2000. Since that time, the media campaign had been focused not only on the Huai River but also on other environmental issues nationwide (Otsuka 2007). This inspection, together with the media campaign, was conducted because the Huai River Basin was the first State Priority Basin for water

pollution control, and the news media was monitoring the river water quality as a typical case. Such campaigns were expected to put pressure on local governments to implement state policy and to inform the public about what the state interests were. Thus, the cooperation between the state and media became important when implementing the state environmental policy on the Huai River pollution and beyond.

Such continuous environmental campaigns by the media with the positive cooperation of the state could have encouraged the public to speak out about their grievances with the environmental problems in their living spaces. In fact, according to the official environmental statistics, the number of complaints by people regarding environmental pollution problems, especially the total number of letters sent to the local environmental protection bureaus nationwide, increased dramatically from approximately 100 thousand in 1997 to over 500 thousand in 2003 (*China Environment Yearbook* 1998-2004). At this time, ENGOs such as the Center for Legal Assistance to Pollution Victims (CLAPV) and Green Hanjiang also emerged to fight for the rights of the people against environmental pollution.⁷

The “Guardian of the Huai River” was also established as a local ENGO under this social transition in China. This ENGO was officially registered as the “Research Center for Ecological Environmental Sciences on the Huai River Water System” in one county along the Sha Yin River, the largest tributary of the Huai River, where many cancer villages were to be found. The first action was led by the founder just after the government proclaimed in 1997 that all factories in the basin had met their national effluent standard of wastewater quality at “the Zero Action” at the end of 1997. Contrary to the state’s claim, he saw a large number of dead fish along the river. To observe the real situation for himself, he decided to investigate the basin’s water environmental situation as a freelance photo journalist in 1999 with the support of “the China Environmental News”, the official news media of the environmental protection administration (Huo 2007, 2008, 2010a, 2010b). As he traveled in his caravan along the basin’s rivers, he discovered many cancer villages. On finding a village in which there were many fatalities, cancer, malformations, and other casualties caused by the heavily polluted water environment, he believed that “(such a situation) could be far beyond any disaster such as war, epidemic, and famine ever experienced in the village in the past,” and he called the situation an “ecological disaster (*shengtai zainan*).” (Huo 2005).

Some of the photos he took during his caravan trip through the basin were picked up by TV stations and newspapers and awarded prizes at official exhibitions and competitions. His photo of school children wearing masks in the classroom because of

⁷ For early work by CLAPV, see Wang et al. 2001.

the toxic smell coming from the heavily polluted river first appeared on CCTV on July 5, 2000, which was World Environment Day. In the following year, about 20 of his photos were displayed at a photo exhibition jointly conducted by the Propaganda Division of the CCP, SEPA, and the State Broadcasting and Television Bureau in Beijing. This official exhibition, which was conducted as part of the environmental campaign, was expected to raise people's concerns over the serious environmental pollution and destruction occurring in China. At the exhibition, one of the photos, titled "A Cancer Village," was awarded third prize (Zhao 2002). These photos alerted the state, media, and the public to the need to address the ecological disaster in the Huai River Basin.

In addition to exhibiting photos, the founder was also active on TV and in other news media talking about the ecological disaster in the Huai River Basin. He believed that "someone should speak out" to resolve "a mismatch of information and attitudes between the higher level and the grassroots" (Huo 2010a). Through the media, he told journalists not only about his grievances regarding the disaster but also provided evidence of the numerous industrial effluent violations found through the group's monitoring and inspection activities in and around the river. In 2003, through continuous monitoring and inspection by the Guardian of the Huai River, the Lianhua MSG group located in Dingcheng city, which was the largest source of pollutants in the Sha Yin River in terms of COD, received an administrative punishment by SEPA for a hidden drainpipe it had installed to secretly dispose of untreated wastewater (*Xinhua Meiri Dianxun* at October 27, 2004).

In 2004, a large-scale water pollution accident occurred again in the Huai River Basin under conditions similar to those of the accident in 1994. There were many news articles before and after the accident from the central media, including TV, newspapers, and magazines. Some of the articles questioned why the state priority control against water pollution in the river had not been effective even after a decade-long public investment effort in the river basin and the continuous inspection of local governments and industries.

CCTV was one of the first active media outlets to focus on the failure of the water pollution control in the Huai River Basin, and its documentary program, "The River and Villages" on August 9, 2004, which aired just after the accident, focused again on the cancer villages. The program showed one cancer village in the county where the situation was so serious that the founder of the Guardian of the Huai River called it an ecological disaster. In the program, the secretariat of the branch of the communist party in the village expressed his despair. The founder also claimed in an interview conducted by the banks of the Sha Yin River that, "Cleaning up the river water within ten years

was just a dream” (Li 2005). This CCTV program revealed the failure of the state pollution control initiative and highlighted the people’s hardships and grievances regarding the serious environmental health hazards in the river basin. Just after the program, the local governments took a quick action to install a simple drinking water supply system by digging deeper wells in the village.

Around the same time, the state began to focus more on improving drinking water sources across the country. Based on a national rural drinking water survey that was jointly conducted by the MWR, the State Development and Reform Commission, and the Ministry of Health (MoH) from November 2004 to June 2005, the State Council created the “National 11th Five-Year Rural Drinking Water Safety Project Plan” to solve the problem of access to safe and clean drinking water in Chinese rural communities. In the 11th Five-Year Plan, the government invested 105.3 billion RMB to improve drinking water sources for over 212 million people, and in the following five years (2010–2015), it was expected to improve access for nearly 300 million additional people.⁸

Co-evolution of Policy and Practices through the Cooperative Sphere

Thus, not only the media but also the ENGO cooperate with state policy makers to address the ecological disaster in the Huai River Basin and beyond. To analyze the interactions between these actors, we introduce the “cooperative sphere” concept, which means an issue-oriented sphere to enable multi-stakeholder cooperation to address the specific public issue and implies a quasi-public sphere under the authoritarian system with social transition in contemporary China. There could not be an emergence of a “public sphere” in China in terms of the Western democratic concept (Habermas 1989, Arendt 1998) ; however, the cooperative sphere will allow the public to address the issues in a way similar to the public sphere under the “fragmented authoritarianism” (Mertha 2009). Next, we examine how the state, media and the ENGO address ecological disaster issues in and beyond the locality through this cooperative sphere.

One of the positive interactions observed in the cooperative sphere is an enhancement of the industrial development regulations. In 2007, to enhance the industrial pollution control, Pan Yue, Vice Chief of SEPA, announced a moratorium on all development projects in cities where environmental impact assessments (EIA) were not seriously enforced until all EIA procedures and proper measures for preventing pollution were normalized, including Dingcheng, where Lianhua MSG received

⁸ <http://www.sdpc.gov.cn/zcfb/zcfbghwb/201402/P020140221360445500781.pdf>, accessed 29 August 2015.

administrative punishment in 2003 for its hidden drainpipe.⁹ This ad hoc regulation was also incorporated into the amendments to the Water Pollution Control Law in 2008, which was adopted nationwide.

Before this state action, the local residents and the Guardian of the Huai River had also witnessed several violations of environmental laws and rules by local firms. They knew that such violations were easily missed by the inspection groups sent by state agencies because the local firms flushed waste water with fresh water, stopped operations or took other countermeasures during the inspection on site. To prevent such violations, the ENGO set up eight “monitoring stations” staffed with volunteers to cover approximately 800 kilometers of the Huai River to detect any changes in the water environment (Xiao 2012). For example, in July 2007, the ENGO discovered many dead fish and foamy pollutants along the Sha Yin River and then told their monitoring volunteers to inform people downstream to prepare for the coming upstream pollutants while also reporting the situation to the HRWRC (Huo 2010a).

Several polluters have come to cooperate with the ENGO to reduce industrial wastewater effluent to the environment. There is now a direct dialogue channel with two companies that allow the ENGO to monitor their wastewater quality on site at any time.¹⁰ Additionally, these companies have agreed to hang a metal plate with the ENGO logo at the gate of the wastewater treatment plants to promote information disclosure on their wastewater treatment situation to the residents and visitors.¹¹ Notably, before the establishment of the cooperative relationship, the ENGO had fought these companies to stop the pollution. In fact, the ENGO’s founder was beaten and had his films stolen by strangers on the street at night during his voluntary monitoring and inspection activities. He also received anonymous threatening phone calls. However, the relationship between the ENGO and these two companies changed because of the continual strengthening of the industrial effluent regulations with stick and carrot methods conducted by the central government, the emerging positive public attitudes toward environmental protection in and beyond the basin, and other factors such as the companies’ ownership reform.¹² The first two factors that changed the polluters’

⁹ http://news.xinhuanet.com/environment/2007-09/23/content_6780355.htm, accessed 29 August 2015.

¹⁰ Interviews with representatives in these two companies as well as the founder of the Guardian of the Huai River in August 2012. This dialogue is called the “Lianhua model”, which comes from one of companies named the “Lianhua Group,” a successor of Lianhua MGS Group after its reform.

¹¹ Field observations in villages and interviews with the founder of Guardian of the Huai River conducted by the author.

¹² Field observations in villages and interviews conducted by the author with the founder of Guardian of the Huai River and with a representative of those companies.

attitude are considered to be brought in the cooperative sphere.

Another episode of positive interactions through the cooperative sphere was an epidemiological survey on the correlation between water pollution and cancer death in the Huai River Basin that was commenced by the CCDC of the MoH in 2005. The survey targets were 2.68 million people from counties in the upper, middle, and downstream sections of the river, namely, Shenqiu County in Henan, Tongqiao County in Anhui, and Xuyi County in Jiangsu. Shenqiu had already been identified by the media as having numerous cancer villages. The survey was initiated by Wen, who learned of these very serious issues through media reports, as well as internal reports only accessible to leaders of the Party and government (*China Health Yearbook* 2006, 181-182), and became a leading survey for the “National Environmental Protection 12th Five-Year Working Plan on Environment and Health,” which focused on a national environmental health survey estimated to cost 1.85 billion RMB, approximately 70% of the total budget of the five-year plan. The first results were obtained in 2006 but, were not disclosed to the public by the State Council. However, the CCDC epidemiological study team and IGSNRR jointly revealed that there was a clear association between the increasing water pollution and the increasing fatalities from digestive cancers in some counties in the Huai River Basin based on the evidence collected through the national survey and their additional academic study in 2013 (Yang and Zhuang 2013).

Practices of the Guardian of the Huai River based on social and ecological knowledge have also played an important role in this national survey. Rural communities in the Huai River Basin have depended mainly on their own shallow wells for drinking water and other daily water (Chen et al. 2013). The perpetual flow of chemical pollutants discharged from industries, cities, and farmlands into groundwater and wells through rivers, canals, and the soil have made it difficult for them to access safe, clean water for several decades. Because of these hardships and difficulties, the ENGO has conducted continuous visits to the villages to understand their health problems, living situation and ecological environment, while it has continued to observe cancer patients and deaths in certain villages.¹³ The founder said to the author, “You can point to any watercourse in the map of this county, and you can find a cancer village there.”¹⁴ Through continuous field surveys, the ENGO obtained social and ecological knowledge of the villages suffering from heavy water pollution, and such knowledge became the basis of the documentary program run by CCTV in 2004 and the basis of the CCDC national epidemiological survey that began in 2005¹⁵.

¹³ An Interview with the founder of Guardian of the Huai River in November 2005.

¹⁴ Ibid.

¹⁵ An Interview with the founder of Guardian of the Huai River in November 2005 and with

Also, he has cooperated with medical doctors of village clinics to understand comprehensive situation of disease and death of villagers. A village doctor is one of grassroots practitioners who have noticed possible correlation between water quality worsening and cancer death growing in the village¹⁶. It seems that their social and ecological knowledge in the locality has not been incorporated in environment and health policy until the epidemiological survey conducted in 2005.

Difficulties in Addressing the Environment and Health Issues in the Locality

As discussed above, we understood how the policy and social responses “coevolved” between the state, media and ENGO in and beyond the locality. In this section, we explore how this coevolution contributed to the problem solving at the local level, where the well-being of rural communities has been threatened for a long period.

According to the official statistics from the water quality and monitoring of the cancer incidence in the Huai River Basin, the situation seems to be improved following a series of countermeasures (*China Water Resources Statistics Yearbook 2012*). However, it has been reported and observed that industries still sometimes violate the effluent standard and a few people living in the cancer villages remain unable to access safe drinking water¹⁷. Additionally, those with cancer and other diseases and their families have received little public assistance and therefore continue to suffer hardship and difficulties in their daily lives¹⁸.

What factors could we find behind such ineffective responses to water pollution and health hazard issues in the basin even though the serious social and ecological conditions of water pollution have improved to a certain extent? It seems that the cooperative sphere enhanced through media campaigns in and beyond the locality sometimes cannot work well because those outside the locality, including the government and media, easily disregard the locality, such as when the cooperative sphere was suppressed under the “social stability first” policy of the CCP and the pro-economic growth mindset of local authorities due to poor conditions for economic development (Chen et al. 2013). The results of the epidemiological survey could provide us evidences leading to relief for the victims and their families, but there seems to be little effort aimed at direct, effective action by the government. The central

Prof. Yang in January 2013. Prof. Yang says she was able to find the founder because of his frequent appearances in the media.

¹⁶ Interviews with some village doctors in November 2005.

¹⁷ Field observations in villages and interviews conducted by the author with the founder of Guardian of the Huai River.

¹⁸ Ibid.

government would still believe that, if disclosed, the epidemiological study may threaten social stability and also, the local government would think that disclosure of environmental health hazard may bring about a negative impact on industrial and urban investment from outside the region.

Further, another negative aspect of the cooperative sphere is a distinct gap between public policy, which is developed beyond the locality, and grassroots practices, which are based on the locality. The Guardian of the Huai River found that many facilities funded by the national drinking water source improvement project were abandoned or unused by villagers for several reasons, such as inconvenient placement of the facilities, poor water quality, and troubles with electricity¹⁹. In addition, there could be a high health risk of fluorine in the deeper ground water layer, especially in the county where the ENGO has acted, and a possible risk of unsustainability, as the regeneration of water taken from deeper levels is very slow²⁰. These public water works engineering projects invested mainly in digging deeper wells just to avoid the shallow polluted water in the basin. When the news media address the ecological hazards in the basin to promote an immediate policy action for drinking water source improvement, they often disregard the diverse situations and needs of the local people and fail to examine the social and ecological characteristics of each locality.

Since 2008, as an alternative to the state initiative project for drinking water source improvement in rural areas and funded mainly by grants from outside funders, the Guardian of the Huai River has developed a drinking water supply system using a “bio-ecological purification system” that is simpler, smaller, cheaper, and easier to access²¹. It had built 40 facilities in the county by the end of 2015²², believing that such ecological engineering is more sustainable and adaptable to the social and ecological conditions in the locality. In this sense, there is a gap between the public work and the ENGO’s practices when seeking solutions, so the ENGO is now attempting to obtain official acknowledgement of their ecological engineering from the government.

Conclusion

By focusing on local social and ecological conditions to address the water pollution health hazards in the rural communities in the Huai River Basin, the cooperative sphere regarding the “environment and health” problems in and beyond the basin has been

¹⁹ Field observations on the sites.

²⁰ Interviews with the founder of Guardian of the Huai River in October 2014.

²¹ <http://cwsc.sub.jp/index-e.html>, accessed 29 August 2015.

²² Presentation by the founder of Guardian of the Huai River in January 2015, Beijing.

nurtured by interactions between the state, the media, and the ENGO. This complex sphere could be suppressed by the authorities for public security reasons, while it could be disregarded by the government and news media outside the locality. To address the water environmental health impact and risk in China, we often focus on public policy development through environmental politics between the authoritarian system and the emerging democracies beyond the locality. Fragmented authoritarianism could nurture the cooperative sphere between the state, the media and the ENGO. In addition, another side of fragmentation in the field of environment and health is the disconnect between local practices and policy beyond the locality. One endeavor to fill this gap would be grassroots “micropolitics” (Deluze and Guattari 2004; Tarde 1969) such as dialogue, negotiation, cooperation with polluters and local authorities, and alternative innovation from the official public works based on social and ecological conditions. This is a challenging task for environment and health issues not only for researchers but also for agencies seeking to work with locals, while seeking sustainable development under the authoritarian system with social transitions in contemporary China.

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