

Shifts in Compensation for Environmental Damage: Reflections on China's New Soil Pollution Law

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Shifts in compensation for environmental damage: reflections on China's new Soil Pollution Law

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During the past decades, the deteriorating soil quality has become an urgent environmental issue on China's policy agenda. The enactment of the first national law for addressing soil pollution in 2018 has been regarded as a major legislative and regulatory development of China's environmental law, since it fills the legal void on soil protection. So far, China's Soil Pollution Law has received scant attention. This article presents an analysis of the liability regime for soil pollution created by this newly adopted law from legal and theoretical perspectives. Two historical shifts have been achieved in this law: first, it represents an important change in adopting an integrated regulatory framework for combatting soil contamination instead of a scattering of provisions and rules; second, it represents a significant shift towards an administrative liability regime, distinct from the environmental liability regimes for other types of environmental damage. This article argues also that several unsettled issues within this liability regime may pose challenges to improving soil quality.

Keywords: *Soil Pollution Law, liability for soil pollution, administrative liability, civil liability, Chinese environmental law*

1 INTRODUCTION

Soil pollution¹ has become one of the most serious environmental crises around the world, as an increasing number of scientific studies clearly illustrate its negative effects

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1. From the scientific perspective, 'soil pollution' and 'soil contamination' are different terms. Soil pollution refers to the presence out of place and or present at higher than normal concentration that has adverse effects on any non-targeted organism. Soil contamination refers to the condition when the concentration of a chemical or substance is higher than would occur naturally but is not necessarily causing harm. However, the Chinese legislation does not explicitly differentiate between these two terms. As a result, soil pollution and soil contamination are interchangeably used in many legal and policy texts as well as in this article. See Natalia Rodriguez-Eugenio, Michael McLaughlin and Daniel Pennock, *Soil Pollution: A Hidden Reality* (Food and Agriculture Organization of United Nations, FAO, 2018) 2–3.

on public health, the environment and sustainable development.² Given the key role of soil in agricultural production, soil pollution presents significant threats to food security and public health, on the basis that the harmful pollutants in the soil could be transferred through crops or plants.³ Moreover, as one important component of the ecosystem, soil pollution also damages soil biodiversity and the ecosystem services provided by soil.⁴ Consequently, the urgency of combating soil pollution is widely recognized at both international and national levels.⁵ Accordingly, soil pollution regulations have proliferated around the world during the past decades.

Soil pollution has become an alarming issue in China, as concerns are rapidly growing with respect to the formidable effects of land contamination for public health and the environment.⁶ In addition, it is also observed that soil pollution has resulted in considerable economic loss and social unrest in China.⁷ More particularly, environmental incidents related to soil pollution frequently appear in social media and rapidly spread among the public in the Information Age, which endangers social stability. One recent heavily discussed environmental crisis is known as the ‘Changzhou soil pollution case’.⁸ In early 2016, students from the Changzhou Foreign Languages School, located in Jiangsu Province, began to feel headaches or skin itching after noticing a strange smell. It appeared that the school was built on a former chemical factory site, and this incident was caused by soil pollution. This environmental incident brought China’s severe soil pollution to the nationwide attention, calling for accelerated actions to solve and manage soil pollution in China.⁹

As a response to the increasing public demand for improved environmental quality, the Chinese policymakers have expressly put forward the implementation of ecological civilization on the national policy agenda,¹⁰ which was promoted as a response to China’s environmental degradation. This also sends a clear policy signal towards strengthening environmental protection, and many efforts have been made to establish a comprehensive legal framework for environmental protection, such as the incorporation of ecological civilization in the Constitution¹¹ and the inclusion of green

2. Ibid, VI.

3. FAO, *Revised World Soil Charter* (2015) 4–5.

4. Ibid.

5. FAO and Intergovernmental Technical Panel on Soils (ITPS), *Status of the World’s Soil Resources—Main Report* (FAO and ITPS, 2015) 224–27.

6. Jian Xie and Fasheng Li, *Overview of the Current Situation on Brownfield Remediation and Redevelopment in China* (The World Bank, 2010) 3.

7. Xiaobo Zhao, *Developing An Appropriate Contaminated Land Regime in China: Lessons Learned from the US and UK* (2nd edn, Springer, 2019) 31–32.

8. Chun Zhang, ‘Changzhou Pollution Scandal Highlights Holes in China’s Environmental Enforcement’ [2016] 29 April China Dialogue <www.chinadialogue.net/article/show/single/en/8892-Changzhou-pollution-scandal-highlights-holes-in-China-s-environmental-enforcement> accessed 3 March 2020.

9. Qingquan Luo, Briefing on the Draft of the Law on the Prevention and Control of Soil Pollution, at the 28th meeting of the Standing Committee of the 12th National People’s Congress, 22 June 2017 [in Chinese] (translated from the original texts).

10. Mette Halskov Hansen, Hongtao Li and Rune Svarveruda, ‘Ecological Civilization: Interpreting the Chinese Past, Projecting the Global Future’ (2018) 53 *Global Environmental Change* 195.

11. Constitution of China [2018] National People’s Congress Order No. 1 (11 March 2018). In the 2018 amendment of the Constitution, ecological civilization is clearly prescribed as one of the five-pronged approach to building socialism with the Chinese characteristics, together with economic, political, cultural and social civilization.

principle in China's Civil Code.¹² However, unlike air pollution or water pollution, soil pollution has been largely neglected in China for a long period. Consequently, the soil pollution regimes were not properly developed. The lack of a nationwide legal framework for soil pollution has been argued to be an important reason for worsening soil condition in China.¹³ In this context, the adoption of the Law on the Prevention and Control of Soil Pollution¹⁴ in 2018 (the Soil Pollution Law hereinafter) is regarded as a milestone in establishing a sound regulatory regime dealing with soil pollution.

The aim of this article is to contribute to the current discussion on the compensation for environmental damage,¹⁵ by providing an overall introduction and a critical analysis of China's newly adopted Soil Pollution Law. More particularly, the aim is to explore how soil pollution was addressed and managed prior to 2018 and how the prevention and remediation of contaminated sites will be carried out under the new liability regime established in the Soil Pollution Law, which has been regarded as a shift in compensation for soil pollution damage in China. The article takes the following course: following the introduction in Section 1, Section 2 presents the current status of soil pollution in China. Section 3 briefly reviews the legislative history of China's soil pollution regulations and policies. Section 4 depicts the liability regime for soil clean-up under the Soil Pollution Law and more particularly three key issues within this regime are discussed, i.e. the potential responsible party, the liability rule and the scope of the liability regime. Based on those descriptions, Section 5 offers some reflections on this new regime. Section 6 concludes with the features and limitations of this newly adopted legislation for addressing soil pollution.

2 STATUS QUO OF CHINA'S SOIL POLLUTION

For a long period, an accurate understanding of China's soil pollution was lacking both in political and academic circles. It was not until 2005 that the then Ministry of Environmental Protection (former MEP and Ministry of Ecology and Environment, MEE after 2018) and the then Ministry of Land Resources (former MLR and Ministry of Natural Resources after 2018) conducted the first nationwide survey on soil pollution, covering all arable lands, forests, grassland, undeveloped and industrial land

12. Civil Code of China [2020] Chairman Order No. 45 (28 May 2020). The Civil Code will take effect as of 1 January 2021. According to Article 9 of the Civil Code, all civil parties shall conduct activities contributing to the natural resource conservation and environmental protection, which is also known as the green principle.

13. Huanhuan Wang, 'Cleaning Up Contaminated Sites in Urban China: Who Should be Liable', in Harald Ginzky, Elizabeth Dooley, Irene Heuser, Emmanuel Kasimbazi, Till Markus and Tianbao Qin (eds), *International Yearbook of Soil Pollution Policy 2018* (Springer, 2018) 171.

14. Law on the Prevention and Control of Soil Pollution [2018] Chairman Order No. 8 (31 August 2018).

15. During recent decades, increasing attention has been given to issues of environmental damage compensation at both international and national levels, in various states. This can be substantiated by a large volume of publications in this field, see for example, Mark Wild, *Civil Liability for Environmental Damage: A Comparative Analysis of Law and Policy in Europe and the US* (2nd edn, Wolters Kluwer, 2013); Michael Faure and Jing Liu, 'Compensation for Environmental Damage in China: Theory and Practice' (2014) 31 *Pace Environmental Law Review* 226.

(excluding Hongkong, Macau and Taiwan).¹⁶ The result of this survey indicated that the overall status of China's soil quality gives cause for concern, with about 16.1 percent of its soils containing higher level of pollutants than the normal standards.¹⁷ The result of this survey reveals the following conclusions of China's soil pollution.

First, soil pollution varies across the different types of land. Among all types of lands, arable lands are the most contaminated lands,¹⁸ and 19.4 percent of all investigated arable lands were found to contain heavy pollutants, followed by 11.4 percent of the undeveloped lands, 10.4 percent of the grasslands, and 10 percent of the forestry lands.¹⁹

Second, agricultural and industrial activities are identified as the main sources of China's soil pollution.²⁰ According to the survey of China's soil pollution, lands used for heavily polluted industries, industrial parks, landfills of waste disposal, untreated waste irrigation, refinery, mining, transport infrastructure are found to contain higher levels of pollutants.²¹ Soil pollution also occurs naturally due to the original properties of soils, which means that the background level of substances²² in soil is higher than the normal concentration.

Third, from the geographic perspective, soil pollution in Southern China is in general heavier than in the Northern part.²³ The traditional industry-concentrated districts, such as the Yangtse River Delta (*Changjiang sanjiaozhou*), the Pearl River Delta (*Zhujiang sanjiaozhou*) and the Industrial Base are among the most contaminated areas in China.²⁴ The soils in the Southwestern and Central South China present higher levels of heavy metals than other parts of China.²⁵

Fourth, types of soil pollution show remarkable differences between agricultural lands and industrial lands. Soil can be polluted either via the direct disposal of pollutants into the soil or via indirect contamination as a result of transition through other environmental media, such as air or water.²⁶ Consequently, soil pollution can be divided into two basic types: point source pollution and diffuse pollution. According to the FAO, point source pollution is usually caused by 'a specific event or a series of events within a particular area in which contaminants are released to the soil',²⁷ for example, former factory sites, landfills, and spills or leakage of hazardous or toxic substances. Consequently, it is relatively easy to identify the cause of point source pollution and the causer of this damage.²⁸ In practice, this type of soil pollution is frequently found in urban areas where industrial activities and municipal waste disposal are more concentrated.²⁹ Another type of soil pollution is diffuse pollution, also

16. MEP and MLR, *Report on National Survey of Soil Pollution Condition*, 17 April 2014. The survey was conducted from April 2005 to December 2013.

17. *Ibid.*, 1.

18. *Ibid.*, 1.

19. *Ibid.*, 3.

20. *Ibid.*, 3.

21. *Ibid.*, 3–5.

22. The background level or background value refers to the geogenic natural content in soils.

23. MEP and MLR (n 16) 2.

24. *Ibid.*

25. *Ibid.*

26. Jose V Tarazona, *Pollution, Soil. Encyclopedia of Toxicology* (Elsevier, 2014) 1019–23.

27. Eugenio et al (n 1) 3.

28. William F Ritter and Adel Shirmohammadi, *Agricultural Nonpoint Source Pollution: Watershed Management and Hydrology* (Lewis Publishers, 2001) 1.

29. Eugenio et al (n 1) 4.

known as non-point source pollution, which refers to the situation where ‘pollution is spread over wide areas, accumulates in soil, and does not have a single or easily identified cause’.³⁰ In contrast to the point source pollution, this type of soil pollution is not caused by direct deposition of certain substances, but results from ‘emission, transformation and dilution of contaminants in other media prior to their transfer to soil’.³¹ Due to the widespread nature and the complicated interaction with other environmental media, diffuse pollution is accordingly difficult to trace and to assess. In China, diffuse pollution is commonly observed in rural areas and one third of diffuse soil pollution is caused by farming activities,³² such as the overuse of chemical pesticides and fertilizers, irrigation with untreated waste water, or livestock production. All these activities contribute to soil degradation via either land, air or water. Therefore, it is critical to adopt appropriate technical instruments and regulatory pathways to solve different types of soil polluting behaviours.

Fifth, in contrast with Western countries where ‘the most common sources of soil contamination are industrial and commercial activities’,³³ agricultural activities are one of the major sources of China’s soil pollution.³⁴ As indicated in the national survey, soil pollution in rural areas is more severe than in urban areas.³⁵ This phenomenon can be explained by two reasons. First, agriculture has been one of the three pillar industries in China’s economy, as a well-known statement puts: ‘China feeds 22 [percent] of the global population with only 7 [percent] of the world’s arable land’.³⁶ Consequently, farmlands have been over-exploited for decades and pollution has accumulated due to waste water irrigation and the improper use of chemical pesticides and fertilizers in the course of farming activities. Second, the lack of techniques to prevent and to manage diffuse pollution in China also lead to the deteriorating soil pollution in rural areas. All these factors worsen the quality of arable lands and pose formidable threats to food security and public health. In this context, safeguarding arable land has always been a key issue in developing China’s soil pollution policy framework.

3 THE DEVELOPMENT OF CHINA’S REGULATORY FRAMEWORK CONCERNING SOIL POLLUTION

3.1 A late start for China’s soil pollution policy

In addition to the complicated natural and anthropogenic causes just discussed above, the lack of law and regulations specifically for combatting soil pollution is perceived as an important reason for the deteriorated status of the soil across the country. In fact, it was not until the early 2000s that the Chinese policymakers put more emphasis on the legislation for soil pollution prevention and control.³⁷ From the global view, China lags far behind other nations in developing a comprehensive policy framework

30. Ibid.

31. FAO and ITPS (n 5) 119.

32. Zhao (n 7) 12.

33. Lucas Bergkamp and Barbara Glodsmith, *The EU Environmental Liability Directive: A Commentary* (Oxford University Press, 2013) 21.

34. Ruishan Chen, Alex de Sherbinin, Chao Ye and Guoqing Shi, ‘China’s Soil Pollution: Farms on the Frontline’ (2014) 344(6185) *Science* 691.

35. MEP and MLR (n 16).

36. Zhao (n 7) 32.

37. Ibid, 71.

for soil pollution. Given the fundamental value of the quality of the soil for public health as well as for social and economic development, the importance of land utilization and protection has been globally recognized. Since the 1970s, many countries have promulgated specific laws and regulations regarding soil protection and remediation of polluted soils. For example, the Japanese government already introduced the Agricultural Land Soil Pollution Prevention Law in 1970.³⁸ Other examples include the Comprehensive Environmental Response, Compensation, and Liability Act of the United States (CERCLA) of 1980,³⁹ the Soil Protection Act of the Netherlands of 1986,⁴⁰ and the Federal Soil Protection Act of Germany of 1998.⁴¹ In China, a soil pollution law also came much later than other pollution control laws,⁴² such as the Law on Prevention and Control of Water Pollution of 1984,⁴³ the Law on Prevention and Control of Atmospheric Pollution of 1987,⁴⁴ and the Law on Prevention and Control of Noise Pollution of 1996.⁴⁵

This legislative delay can be explained by several reasons. First, it can be attributed to the nature of soil pollution. Unlike other types of environmental damage, such as water, noise or air pollution, soil pollution is well known to be an invisible or hidden pollution. In many cases, it is difficult to notice the effects of soil pollution as soon as it occurs. Meanwhile, hazardous and toxic substances can easily accumulate and persist in the soil, since soil in nature cannot move or circulate.⁴⁶ As a result, historical soil pollution remains a major concern today. Soil pollution is also one of the causes of serious groundwater pollution.⁴⁷ Second, for a long period of time, soil pollution did not attract attention from policy makers due to their focus on economic growth. Governments, particularly at the local level lack strong incentives for cleaning up the contaminated sites, since it could have negative effects on local revenues and hence

38. The Agricultural Land Soil Contamination Prevention of Japan (Law No. 139 of 25 December 1970) <www.env.go.jp/en/laws/water/aglaw.pdf> accessed 3 March 2020.

39. The CERCLA, also commonly known as Superfund, was enacted by the US Congress on 11 December 1980.

40. The Soil Protection Act (in Dutch: *Wet bodembescherming, Wbb*) was enacted on 3 July 1986 and entered into force from 1 January 1987.

41. The Federal Soil Protection Act of Germany (in German: *Bodenschutzgesetz, BBodSchG*) was published on 17 March 1998.

42. Yuhong Zhao, 'Land Contamination in Urban China—Developing a National Cleanup Legal Regime' (2009) 39(3) *Hong Kong Law Journal* 627.

43. Law on Prevention and Control of Water Pollution [1984] Chairman Order No. 12 (11 May 1984).

44. Law on Prevention and Control of Atmospheric Pollution [1987] Chairman Order No. 57 (5 September 1987).

45. Law on Prevention and Control of Noise Pollution [1996] Chairman Order No. 77 (29 October 1996).

46. Xie and Li (n 6) 3.

47. A report issued by the MLR in 2014 shows that among 4,778 spots in 203 cities monitored by the MLR, underground water quality is ranked 'relatively poor' in 43.9 percent and 'very poor' in another 15.7 percent. According to China's underground water standards, water of relatively poor quality can be used for drinking only after proper treatment. Water of very poor quality cannot be used as a source of drinking water. The report further shows that on a year-by-year basis, water quality has worsened in 754 monitored spots and has improved in only 647 areas. See China's Underground Water Quality Worsens: Report <www.mwr.gov.cn/english/Medianews/201404/t20140423_557503.html> accessed 3 March 2020; Jane Qiu, 'China to Spend Billions Cleaning Up Groundwater' (2011) 334(6057) *Science* 745.

for their political promotion.⁴⁸ According to a study by Greenpeace, local revenues rely heavily on land transfer fees (the transfer of the land utilization permit), and not surprisingly local authorities have less willingness to tackle soil pollution.⁴⁹ In the face of serious soil pollution, as well as learning from other jurisdictions, a specific law dealing with soil pollution was urgently needed in China.

3.2 Soil pollution policies prior to 2018

In the absence of a specific legislation before 2018, soil pollution was addressed by a scattering of rules and norms prescribed in a wide range of laws, regulations and policies in China at both national and local levels, including the Constitution Law,⁵⁰ the Environmental Protection Law,⁵¹ and other relevant laws, regulations and decrees. In this section, several important laws and regulations are chosen to exemplify how soil pollution was addressed prior to 2018.

First, the need for preventing and controlling soil contamination has been frequently emphasized in China's environmental policy frameworks. Pursuant to Article 20 of the Environmental Protection Law of 1989⁵² (the EPL 1989 hereinafter), the prevention of soil pollution was an important measure for local authorities to strengthen rural environmental protection. The newly revised Environmental Protection Law of 2014⁵³ (the EPL 2014 hereinafter) reaffirmed the importance and necessity of soil protection and soil pollution control in several provisions. For example, Article 32 explicitly prescribes that the State shall strengthen the protection of air, water and soil, by establishing and improving the respective mechanisms for

48. See *inter alia* Alex Wang, 'The Search for Sustainable Legitimacy: Environmental Law and Bureaucracy in China' (2013) 37 *Harvard Environmental Law Review* 365; Carl F Minzner, 'Riots and Cover-Ups: Counterproductive Control of Local Agents in China' (2009) 31(1) *University of Pennsylvania Journal of International Law* 74.

49. Greenpeace and Institute of Ecology and Environment at Nanjing University, *Redevelopment of China's Urban Contaminated Sites: Problems and Solutions* (Greenpeace, April 2019) [in Chinese] (translated from the original texts). See also David Stanway, 'China Soil Pollution Efforts Stymied by Local Governments: Greenpeace' [2019] 17 April Reuters <www.reuters.com/article/us-china-pollution-soil/china-soil-pollution-efforts-stymied-by-local-governments-greenpeace-idUSKCN1RT04D> accessed on 3 March 2020.

50. The Constitution Law of China, National People's Congress. Since the founding of China in 1949, there have been five Constitution Laws, respectively enacted in 1954, 1975, 1978 and 1982. The current Constitution Law was promulgated in 1982 and has been amended in 1988, 1993, 1999, 2004 and 2018. More particularly, Article 26 of the Constitution Law prescribes that the State protects and improves the living environment, and prevents and remedies pollution and other public hazards. This provision is of great importance for environmental protection and pollution control, since it explicitly mentions environmental protection as the duty of the State.

51. There have been three Environmental Protection Laws, respectively enacted in 1979, 1989 and 2014.

52. Environmental Protection Law [1989] Chairman Order No. 22 (26 December 1989). Article 20 of the EPL 1989 prescribes that governments at all levels shall strengthen environmental protection of rural areas, to prevent soil pollution, desertification, salinization, alkalinization, impoverishment, stony desertification, land subsidence, damage to vegetation, soil erosion, eutrophication of waters, the depletion of water resources, the extinction of species and other ecological imbalances.

53. Environmental Protection Law [2014] Chairman Order No. 9 (24 April 2014).

investigation, monitoring, evaluation and remediation. Article 33 focuses on the protection of rural lands, by requiring local authorities at various levels to take measures to prevent soil pollution, desertification, salinization, alkalization, impoverishment, stony desertification, land subsidence, damage to vegetation, soil erosion, eutrophication of waters, the depletion of water resources, the extinction of species and other ecological imbalances. Article 49 specifically combats the diffuse pollution in agricultural lands, by laying down specific rules for agricultural and livestock activities.

Apart from the principal law for environmental protection, soil contamination has also been addressed by a variety of provisions in several pollution control laws and natural conservation laws, for example, the Law on the Prevention and Control of Environmental Pollution by Solid Waste,⁵⁴ the Law on the Prevention and Control of Atmospheric Pollution, the Law on the Prevention and Control of Water Pollution and the Regulation of Natural Reserves.⁵⁵ Particularly given the close linkage between soil pollution and other types of pollution, these provisions also played an important role in combatting soil contamination before the promulgation of the Soil Pollution Law.

Second, in addition to the environmental legislation, another important legal source for China's soil protection policy was the land utilization and management legislation. For example, pursuant to Article 35 of the Land Administration Law,⁵⁶ governments at all levels are required to take measures for the prevention of soil pollution. Article 2 of the Rules on Land Reclamation⁵⁷ prescribes that the operator is obliged to conduct reclamation measures in the course of construction activities in order to restore the contaminated land to a useable condition.

Third, as a fundamental component of agricultural production, soil pollution is also regulated in many agriculture-related laws. For example, several provisions in the Agriculture Law (2012 revision)⁵⁸ deal with various issues with respect to soil protection, including the proper use of agricultural pesticides and fertilizer in the course of farming activities, and the restrictions on the production of agricultural chemical products.

Fourth, the urgency of addressing soil pollution is also mentioned in a variety of policy guidelines and documents in China. For example, the Decision on the Implementation of the Scientific Outlook on Development and Strengthening Environmental Protection⁵⁹ (the Decision hereinafter) released by the State Council in 2005 purposely emphasized the urgency of China's environmental protection, and the land remediation of former factory sites was listed as one of the priority issues on the policy agenda. Another influential policy guideline on soil pollution – the Action Plan for the Prevention and the Control of Soil Pollution (hereinafter the

54. Law on the Prevention and Control of Environmental Pollution by Solid Waste, Chairman Order No. 31 (29 December 2004). There are two laws governing the pollution issues caused by solid waste, enacted in 1995 and 2004. The most recent one, promulgated in 2004, has been amended in 2013, 2015 and 2016.

55. State Council, Regulation of Natural Reserves [1994] Decree No. 167 (9 October 1994, amended in 2017).

56. Land Administration Law, [2004] Chairman Order No. 28 (28 August 2004).

57. State Council, Rules on Land Reclamation [2011] *Guofa* No. 592 (5 March 2011).

58. Agriculture Law [1993] Chairman Order No. 6 (2 July 1993, amended in 2002, 2009 and 2012).

59. State Council, Decision on the Implementation of the Scientific Outlook on Development and Strengthening Environmental Protection [2005] *Guofa* No. 39 (3 December 2005).

Action Plan)⁶⁰ – was issued in May 2016, also well known as the ‘ten steps on soil pollution’ (also known as ‘*tu shi tiao*’), which lays down ten firm measures to strengthen the prevention and control of soil contamination and to improve the soil quality. More particularly, the establishment of the soil pollution regulatory system before 2020 is listed as the second step in the Action Plan, which explicitly calls for the enactment of the specific legislation for soil pollution and substantially promotes the legislative works in this domain.⁶¹

In addition to the efforts at the central level, local councils and governments were also encouraged to develop provincial laws and regulations given the significant differences in soil properties, soil pollution conditions and economic development levels across the vast area of China. In practice, several local governments, especially with rapid economic growth, take the lead in developing local regulations with respect to soil protection and soil pollution control, because they are more vulnerable to soil pollution problems in the rapid development of industrialization and urbanization.⁶² For example, as early in 2006, the Zhejiang People’s Congress promulgated the Regulation on Solid Waste Pollution Prevention,⁶³ which clearly required all contaminated sites to conduct an environmental risk assessment. As a large industrial city in South eastern China, the Chongqing government also put an emphasis on contaminated sites management by issuing a series of local regulations, policies and guidelines. For example, Article 47§2 of the Chongqing Municipal Environmental Protection Regulation⁶⁴ states that the operator shall remove the toxic and harmful substances and undertake the remediation of the contaminated lands before changing their production or before relocation. All these local practices have accumulated good experience for drafting the national legislation on soil pollution.

Despite the significant efforts made at both central and local levels, China’s soil pollution regulatory system prior to 2018 was far from being sufficient in addressing China’s serious soil pollution problems due to several limitations.⁶⁵ First of all, it has been argued that although a wide range of provisions mentioned above could be applied to soil protection and soil contamination management, they are not specifically designed for addressing soil pollution issues.⁶⁶ Accordingly, many provisions are in essence ambiguous policy declarations without providing specific rules for implementation, which poses significant challenges for the enforcement authorities

60. State Council, Action Plan for the Prevention and the Control of Soil Pollution [2016] *Guofa* No. 31 (28 May 2016).

61. Under the guidance of the Action Plan, MEP together with Ministry of Agriculture (former MoA and Ministry of Agriculture and Rural Affairs after 2018) promulgated three specific decrees on soil pollution: Measures for the Administration of the Soil Environment of the Contaminated Sites (for Trial) Decree No. 42 (31 December 2016); Measures for the Administration of the Soil Environment of Agricultural Land (for Trial) Decree No. 46 (25 September 2017); Administrative Measures for Soil Environment of Land for Industrial and Mining Uses (for Trial) Decree No. 3 (3 May 2018).

62. See for example Zhao (n 7) 59–61; Zhao (n 42) 629.

63. People’s Congress of Zhejiang Province, Regulation on Solid Waste Pollution Prevention (26 May 2006, amended in 2013 and 2017).

64. Chongqing People’s Congress, Chongqing Municipal Environmental Protection Regulation [2007] Notice of the Standing Committee of Chongqing People’s Congress No. 7 (18 May 2007).

65. See for example, Xie and Li (n 6) 10; Zhao (n 7) 75.

66. Zhao (n 42) 637.

to undertake the management work of the contaminated sites.⁶⁷ Another signification limitation lies in the fragmentation of the liability regime. Within the current institutional framework in China, several agencies are authorized to issue regulations and policies for addressing soil pollution based on their respective division of administrative powers, including the environmental protection bureaus (EPB), the natural resources agencies, the agricultural and rural areas agencies, and the housing and urban-rural development agencies. As a result, the overlap and conflicts of interest across agencies are serious at both central and local levels, and this adversely affects the effectiveness of this regime. In this context, a consensus was shared by both policy makers and academic scholars that nationwide legislation for addressing soil contamination was urgently needed in China.⁶⁸

3.3 The new Soil Pollution Law 2018

As a response to the worsening soil condition, it took five years before the Soil Pollution Law was unanimously passed by the Standing Committee of the National People's Congress (NPC) on 31 August 2018, which came into force on 1 January 2019. As the first nationwide legislation dedicated to the prevention and remedying of soil pollution, the making of the Soil Pollution Law has been regarded as a major advancement and further improvement of China's environmental legal framework, since it fills the legal void on soil pollution. The newly adopted law consists of seven chapters in total,⁶⁹ which lays down the detailed rules regarding the basic principles, the management systems, the legal responsibility and the supervision and guarantees for the prevention and remediation of soil pollution.

A major contribution of this new law is to establish a comprehensive regulatory framework for addressing soil pollution, which can be substantiated in several aspects. First, this new law puts an equal focus on the prevention of the potential soil pollution and the remediation of present soil pollution. This feature can be easily read from the basic principles prescribed in Article 3 of the Soil Pollution Law, which clearly states that the prevention and control of soil pollution shall adhere to the preventive principle and to the principle of protection as a priority. Moreover, it can be proved by the structure of the legal text, where Chapter 3⁷⁰ focuses on the prevention and protection of soil pollution and Chapter 4⁷¹ deals with the risk management and control and remediation. Second, under the inclusive legal framework of the Soil Pollution Law, both agricultural and construction land contaminations are regulated. In this case, an integrated framework for addressing soil pollution is regarded as a key feature of the new Soil Pollution Law.

67. Tiankui Li, Yi Liu, Sijie Lin, Yangze Liu and Yunfeng Xie, 'Soil Pollution Management in China: A Brief Introduction' 2019(11) *Sustainability* 556.

68. See World Bank, *China-Human Integrated Management of Contaminated Agricultural Land Project: Environment and Social Assessment-Executive Summary* (World Bank, 2017) 36; Zhao (n 7) 75–77.

69. The final text of the Soil Pollution Law consists of seven chapters: Chapter 1, General Provisions; Chapter 2, Plans, Standards, Surveys and Monitoring; Chapter 3, Prevention and Protection; Chapter 4, Risk Management and Control, and Remediation; Chapter 5, Guarantees and Supervisions; Chapter 6, Legal Responsibility; and Chapter 7, Supplement Provisions.

70. *Ibid.*

71. *Ibid.*

4 RESPONSIBILITIES FOR THE REMEDIATION OF CONTAMINATED SITES

An important question with respect to soil pollution is who is responsible for the clean-up of soil pollution and who should pay for it. It is on this crucial aspect of the law that we will focus in this section. This section then deals *inter alia* with the question of what measures should be taken, who should be responsible for the soil pollution and who should pay for the clean-up measures.

4.1 Clean-up measures for contaminated sites

Under the new regime of the Soil Pollution Law, the starting point of soil clean-up is the risk assessment of soil pollution condition, to collect data and to identify whether the actual or potential risk of soil pollution is present.⁷² The basis of risk assessment is according to Article 37⁷³ a soil pollution risk assessment report. It is based on that report that the status of soil pollution is analysed. If the report indicates a higher level of pollutants in the soil that exceeds the prescribed thresholds,⁷⁴ a comprehensive risk assessment will be conducted. Based on the scientific evidence, a risk assessment approach is used to determine the nature of major pollutants, in order to measure the scope of the contaminated lands and the underground water, and to estimate to what extent soil pollution may pose a danger to public health and to the environment.⁷⁵ This step is of great importance to determine what subsequent actions should be taken.

If the soil pollution is confirmed through the assessment procedures, what follows is the removal and remedial actions of the contaminated site, each of which has different functions. The removal actions refer to diminishing the pollutants in the soil to control the spread of soil pollution and to guarantee the non-toxic soil condition. The remedial actions aim to restore the damaged soil quality to a usable level. According to Article 35,⁷⁶ a comprehensive plan for remedying soil pollution consists of five steps in a chronological order: soil contamination investigation, risk assessment, risk management and control, remediation, result evaluation of risk control and management, result evaluation of remediation, post-management.

It should be noted that agricultural land and construction land are managed differently in the Soil Pollution Law. This divergence can be literally observed by the structure of Chapter 4, consisting of three sections: section 1 setting up the general rules, section 2 focusing on the agricultural land and section 3 dealing with the construction land. This structure explicitly indicates that these two types of lands are regulated in different ways under the new regime, which also corresponds to classification of soil pollution, i.e. point pollution and diffuse pollution. More importantly, the executors of specific actions vary between agricultural land and construction land. Taking investigation measures as an example, the preliminary investigation of arable soil pollution is organized by local governments together with the agriculture and rural affairs

72. Soil Pollution Law, Article 36.

73. *Ibid.*, Article 37.

74. The criteria to determine whether the level of pollutants surpasses the damage threshold is not prescribed in the Soil Pollution Law, but in two environmental standards: Soil Environment Quality: Standards of Management and Control of Agricultural Land Contamination Risk (for Trail) (GB15618-2018) and Soil Environment Quality: Standards of Management and Control of Construction Land Contamination Risk (for Trail) (GB36600-2018).

75. Soil Pollution Law, Article 37.

76. *Ibid.*, Article 35.

departments and the forestry and grassland departments;⁷⁷ while in the case of construction soil pollution, local governments could designate the land usufructuary to initiate this investigation.⁷⁸ In order to guarantee information transparency, creditability and integrity, the EPBs together with other relevant agencies are entitled to evaluate the quality of the investigation reports of the construction land. Since the investigation of arable soil pollution is conducted by public authorities, there is no need to conduct this type of evaluation. Moreover, the management systems also differ between agricultural land and construction land. More specifically, a classification system is introduced in the management of agricultural soil contamination, in which agricultural lands are categorized into three types: for prior conservation, for safe utilization, and for strict management and control.⁷⁹ In this classification system, different measures are taken depending on the respective type of the lands. The list-management approach is applied to the construction land, which simply means that the persons responsible for the contaminated construction land are obliged to undertake the necessary measures if that site is on the list.⁸⁰ From the description above, it is clear that the Soil Pollution Law imposes obligations on ‘the person responsible’. The crucial question is therefore who, according to this new law, is to be considered as either the person responsible or at least the person who should conduct the control of soil pollution risk and the remediation.

4.2 Responsible persons

In the international environmental law area as well as in many national jurisdictions, the ‘polluter pays’ principle (PPP) is widely accepted as the fundamental principle underlying the environment liability regime.⁸¹ In general, the ‘polluter pays’ principle means that the polluter will be liable for the actual or potential environmental damage in the cause of economic or business activities.⁸² The ‘polluter pays’ principle is also taken as one of the basic principles in the EPL 2014,⁸³ and the legal framework of soil pollution is also developed on the basis of this principle. The drafting of the Soil Pollution Law is perceived as the furtherance of the ‘polluter pays’ principle in the specific area of soil protection. In the final text, the ‘polluter pays’ principle

77. Ibid, Article 52.

78. Ibid, Article 59. In Chinese law, property right consists of three types of right: ownership right, usufructuary right and security right. The ownership right means that the owner has the right to possess, use, obtain profits and dispose of the property, while the usufructuary right refers to the right to possess, use and obtain profits from the property owned by any other person.

79. Ibid, Article 49.

80. Ibid, Article 58.

81. For example, the ‘polluter pays’ principle is at the heart of the environmental liability regime under the ELD of the EU and the CERCLA of the US. See Evan Hamman, Liping Pei, Denise Burloff and Alexander Lockhart, ‘The Polluter Pays Principle in Chinese Environmental Law’ (2018) 2(1) *Chinese Journal of Environmental Law* 57–82; Alexander Zahar, ‘Implementation of the Polluter Pays Principle in China’ (2018) 27(3) *Review of European and International Environmental Law* 1–13.

82. According to the OECD Guiding Principles Concerning International Economic Aspects of Environmental Policies, the ‘polluter pays’ principle refers to the principles to be used for allocating costs of pollution prevention and control measures to encourage the rational use of scarce environmental resources and to avoid distortions in international trade and investment.

83. EPL 2014, Article 5.

is mentioned in several provisions. More particularly, Article 3⁸⁴ explicitly states that the prevention and remediation of soil pollution shall adhere to the ‘polluter pays’ principle. Under the new regime, the responsible persons can be categorized into two groups: private actors and public actors.

4.2.1 *Private responsible parties*

Pursuant to the ‘polluter pays’ principle, the polluter is unquestionably the principal liable party for environmental damage, which simply means that the polluter should pay for environmental damage caused by his activities. Some scholars hold that this type of liability is the responsibilities attached to particular activities of an operator.⁸⁵ However, the implementation of the ‘polluter pays’ principle differs, according to various institutional and legal contexts. Under the Chinese liability regime for soil pollution, in addition to the polluter, as was already made clear, another party held responsible is the land usufructuary. According to Article 4,

any natural or legal person shall be obliged to protect the soil and prevent soil pollution; the land usufructuary in the course of land utilization activities, a business entity and other undertaking in the course of economic activities, shall take effective measures to prevent and diminish soil pollution, and shall be responsible for soil pollution caused by their activities.⁸⁶

Although the ‘polluter pays’ principle is the primary rule in identifying the liable parties for soil contamination, the Soil Pollution Law not only relies on this principle. In addition to the polluters, the land usufructuaries, even though they may not necessarily be the ones who caused the pollution (especially in cases of historical pollution), are still held responsible.

A notable feature of the Soil Pollution Law is that for the first time the land usufructuary is also included as the supplementary responsible party in the environmental liability regime, making it distinct from other pollution control laws in China. For example, the Law on the Prevention and Control of Atmospheric Pollution only includes the business entities and other operators as the responsible parties for air pollution.⁸⁷ Note, however, that as was already made clear, according to Article 45,⁸⁸ the primary responsibility rests with ‘the person responsible for soil pollution’, namely the polluter and its successor.⁸⁹ It is only if the polluter cannot be identified that the responsibility for controlling the soil pollution risk and remediation is imposed upon the land usufructuary. In fact, it has been observed that the liable parties for soil pollution present significant divergences across jurisdictions. For example, under the CERCLA of the US, in addition to the polluter, the liable parties include the current and historical owner and operator of sites, the transporter of pollutants, lenders, and corporations.⁹⁰

84. Soil Pollution Law, Article 3.

85. Jing Hu, ‘Opinions on the Second Draft of the Soil Pollution Law’ [in Chinese] (translated from original text) (2018) <<http://huanbao.bjx.com.cn/news/20180405/889965.shtml>> accessed 15 January 2020.

86. Soil Pollution Law, Article 4.

87. Law on the Prevention and Control of Atmospheric Pollution, Article 7.

88. Soil Pollution Law, Article 45.

89. According to Article 47 of the Soil Pollution Law, if the polluter is changed due to merger or insolvency, its successor is obliged to undertake the clean-up activities.

90. According to CERCLA section 107(a), there are four general types of responsible parties: current owners and operators, past owners and operators, transporters, lenders and corporations.

This introduction of the land usufructuary in China's soil pollution regime can be explained by two reasons. First, unlike other types of environmental damage, the hidden and latency characteristics of soil pollution create formidable challenges in identifying those responsible for the damage. Particularly, in the case of the contaminated industrial sites, factories built on this land may disappear or change due to mergers, relocations or bankruptcy. Consequently, it is difficult to determine who will be liable and to what extent one party will be liable for soil pollution. In practice, it is also time-consuming to prove the causation between the specific activities and the caused damage, but meanwhile the situation of soil pollution may be continually worsening. Given these complicated situations, the liability regime is too limited if only the polluter were to be held liable. For the sake of efficiency, lawmakers often require land-right holders as the supplementary liable party, since it is much easier to find the current owners or users of a land via administrative registration systems than to find the polluters.⁹¹ Another important reason to prescribe the land usufructuary rather than the land owner as the secondary liable party is related to the political and economic systems of China. According to Article 10 of the Constitution Law, land in urban areas is owned by the state; land in the rural and suburban areas is owned by the collectives. If the landowner were to be taken as the supplementary liable party, it would simply mean that public authorities need to pay for soil pollution damage in any circumstance. This could create tremendous financial and administrative costs for public authorities.

To summarize, under the new liability regime related to soil pollution damage in China, private liable parties are the polluter and the land usufructuary. According to Article 45§1, the polluter is the primary liable party and the land usufructuary is the secondary liable party.⁹² Only when the polluter cannot be ascertained will the usufructuary be responsible to take up risk control and remediation duties. Responsibilities are imposed upon these two parties according to the Soil Pollution Law, but based on different rationales. For polluters, the responsibilities are attached to their activities and the damage they caused. In contrast to the polluter, the liabilities of the land usufructuary are not attached to their activities, but are derived from the ownership and use rights of the land.⁹³ An issue not clearly regulated in the law is the cumulation of liability between these two parties. Can public authorities directly force the land usufructuary to take remedying actions, for example when it would be clear that the primary polluter may not be able to execute (remediation) obligations (for example because of insolvency)? That does not follow clearly from Article 45. The question equally arises of whether the land usufructuary, if it had to undertake remediation actions, could reclaim remediation costs from the primary polluter. That issue is not explicitly addressed in the Soil Pollution Law.

4.2.2 *Public responsible parties*

According to the Soil Pollution Law, the role of public authorities is to ensure that the private liable parties, as discussed above, take removal and remedial actions by

91. For example, in China, according to the Land Administration Law, the ownership and rights of use of land must be registered with the competent authorities.

92. Soil Pollution Law, Article 45.

93. Hu (n 85).

issuing administrative orders.⁹⁴ In principle, public authorities are not obliged to take actions for the clean-up of the contaminated sites. However, this exemption does not apply under several circumstances prescribed in this new law.

The first scenario occurs where the polluter cannot be identified or when there is a dispute on who is the person responsible for soil pollution. In many cases, the polluter could be identified through the investigations of the contaminated sites. However, in specific cases, the polluter might not be identified due to many practical reasons, for example the relocation of factories, or the absence of relevant documents and key information. In other cases, the responsible persons identified in the investigation report may disagree with the results. Questions can arise as to who has the power to identify the polluter and to resolve the corresponding disputes. Pursuant to Article 48, when the liable party for agricultural land pollution has not been identified or in question, it is the local governments together with the agricultural and rural affairs departments and the forestry and grassland departments at the same level that are responsible to ascertain the liable party for the contaminated lands; in the case of construction lands, the local governments with the ecological and environment departments and natural resource departments have the decisive power.⁹⁵ Therefore, under the new soil pollution liability regime, public authorities play an important role in identifying the liable party, given their advantages in environmental governance and supervision. Since any business entity from establishment to dissolution is under tight supervision by public authorities, a large amount of information with respect to the polluters is in the hand of public authorities. Moreover, the EPBs generally have a higher level of expertise in environmental administrative management and legal enforcement. Given the lower information and administrative costs, public authorities are authorized to determine the polluters in a soil pollution liability case. The Ministry of Ecology and Environment (MEE) is also empowered to formulate the specific measures to establish the polluter identification system.⁹⁶

The second scenario happens in the case of an emergent incident that can potentially lead to soil pollution. In practice, even though there may be no dispute regarding who will be held liable for soil pollution, it still takes a certain period of time to conduct the investigation and risk assessment procedures before taking any preventive and remedial measures. Meanwhile, the condition of the soil might be continually deteriorating. In this case, it is necessary for public authorities to take immediate measures. Article 44 empowers the competent authorities to take measures to prevent and control soil pollution in the case of emergent incidents.⁹⁷

Third, if the polluter or the land usufructuary fail to perform their duties, the competent authority,⁹⁸ itself or through a third party, can carry out the necessary preventive and

94. See Jing Hu, 'Public Law Attributes of Soil Restoration Responsibility: Purpose and Tool Orientation' (2020) 5 *Journal of Social Science of Hunan Normal University* 29–37; Gu Gong, 'Soil Remediation from the Perspective of Public Responsibility: An Analysis Based on the Soil Pollution Law' (2018) 11 *Law Science* 52–64.

95. Soil Pollution Law, Article 48.

96. On 17 September 2019, MEE published two legislative draft for comments – the Measures on Identification of Liable Parties for Agricultural Land Pollution (for Trial) and the Measures on Identification of Liable parties for Construction Land Pollution (for Trial). Both drafts of the Measures are soliciting for public comments.

97. Soil Pollution Law, Article 44.

98. The competent authority may refer to several administrative agencies depending on the different types of lands, including the ecological and environmental protection agencies, agriculture and rural affairs agencies, forestry and grassland agencies and natural resources agencies.

remedial measures on behalf of the liable parties, and all costs will be ultimately borne by the liable parties.⁹⁹ However, a problem in the current legal framework is that the powers to reclaim cost are not clearly identified, neither in the Soil Pollution Law, nor in the Administrative Compulsion Law.¹⁰⁰ This lack of a clear legal basis poses challenges for the enforcement authorities for cost recovery of the soil clean-up.

In addition, there are several provisions prescribing the duties of public authorities. For example, according to Article 45§2, local governments and the relevant departments, such as the environmental protection agencies, agricultural and rural affairs agencies, and natural resources agencies, are encouraged to take measures for risk management and control, and remediation of soil pollution under the specific circumstances. However, it is neither detailed nor clear what is meant with these specific circumstances. If the land usufruct has been taken back by the local government and the person responsible for soil pollution is the usufructuary, as prescribed by Article 68, the local government shall take remedial measures.¹⁰¹

Although public authorities are responsible for taking removal and remedial actions in several specified circumstances pursuant to the law, the specific role of public authorities within this new liability regime has not been clearly prescribed. More particularly, an important question remains unanswered as to whether the principle of subsidiary state responsibility could be applied to soil pollution cases where private liable parties cannot be identified or fail to act.¹⁰² The absence of subsidiary state responsibility may lead to a problematic situation where the contaminated soil becomes an orphan site.

4.3 Liability rules

Based on the previous discussion, the Soil Pollution Law imposes obligations for the management and control of soil pollution risks as well as remediation upon several (private and public) responsible parties. However, that does not answer the question of who will ultimately be liable, more particularly for the costs of soil clean-up. Deeply influenced by the civil law traditions, China's environmental liability regime has been established on the legal basis of the civil law since its emergence. Most environmental laws in China do not explicitly address issues related to civil liability,¹⁰³ and instead the fundamental rules with respect to environmental liability can be found in the civil laws rather than in the environmental protection laws. For example, Article 124 of

99. Soil Pollution Law, Article 94.

100. According to Article 50 of the Administrative Compulsion Law, when the party concerned fails to perform the duty imposed by the administrative order within the time limit, the authorities can take actions themselves or through a third party if the negative consequences have posed threats to traffic safety or caused damage to the environment and natural resources. According to Article 51, the incurred costs shall be covered by the party concerned. Although the authorities are granted the power to act on behalf of the party concerned in accordance with law, the cost recovery proceedings are not explicitly prescribed.

101. Soil Pollution Law, Article 68.

102. See for example, Kristel De Smedt and Michael Faure, 'The Implementation of the Environmental Liability Directive: A Law and Economics Analysis of the Transportation of the ELD in Belgium, the Netherlands and Germany' (2010) 4 *ZEUP: Zeitschrift für europäisches Privatrecht* 801–02; Hu (n 94).

103. Zhao (n 7) 67.

the General Principles of the Civil Law¹⁰⁴ states that any person who violates the national legislations on environmental protection and causes environmental damage shall bear civil liability. Article 64 of the EPL 2014 does not contain an explicit liability rule either. It provides that the liable parties shall be held liable for any form of damage arising from environmental pollution and ecological devastation in accordance with the Tort Law¹⁰⁵ of China.

Accordingly, the liability rules for soil pollution are not prescribed in the Soil Pollution Law, but in the Tort Law and the judicial interpretations issued by the Supreme People's Court.¹⁰⁶ Article 8 of the Tort Law provides four provisions to set up two basic liability rules of environmental pollution damage. The first rule applied to an environmental liability case is strict liability. Pursuant to Article 1 of the Interpretations of Several Issues on the Application of Law in the Trial of Disputes over Liability of Environmental Torts (hereinafter Interpretations), 'for any damage caused by environmental pollution, the polluter shall bear tort liability regardless of fault. If the polluter uses the compliance with the pollutant emission standards at both national and local levels as a defence against liability, such a claim will not be supported by the court'.¹⁰⁷ The second rule is joint and several liability, which deals with the liability allocation among multiple tortfeasors. Article 67 of the Tort Law stipulates that where the environmental damage is caused by multiple polluters, the allocation of their respective responsibilities is determined by various factors, such as the type of pollutants and the volume of emissions. However, the reality can be much more complicated, for example where the environmental damage is caused by the polluting activities of several actors on separate occasions and each emission is sufficient to cause the entire damage; or when the environmental damage is caused by the polluting activities of several actors on separate occasions but each polluter has not done sufficient to cause this entire damage; or when the environmental damage is caused by the polluting activities of several actors and one polluter has done sufficient to cause the entire damage while another polluter is only liable for a part of the damage. Accordingly, the detailed rules of liability allocation among multiple tortfeasors are further developed in the Interpretations.¹⁰⁸ However, the hidden features of soil pollution present formidable challenges in applying the liability allocation rules in practice. Often there is a long time-lapse between the occurrence of soil pollution and the discovery of the damage.¹⁰⁹ As a result, the persons responsible for soil pollution (especially when it is a corporation) may have undergone changes in corporate identity.

Another important issue with respect to the environmental liability rules relate to the defences for liability. The concept of defences in tort law refers to the special conditions where the polluter could be released from liability or the liability could be mitigated to a certain level.¹¹⁰ The burden of proof is on the polluter to prove the

104. General Principles of the Civil Law (2009 revisions) [2009] Chairman Order No. 18 (17 August 2009).

105. Tort Law [2009] Chairman Order No. 21 (26 December 2009).

106. SPC, Interpretations of Several Issues on the Application of Law in the Trial of Disputes over Liability of Environmental Torts [2015] *Fashi* No. 12 (1 June 2015).

107. *Ibid*, Article 1.

108. *Ibid*, Articles 3 and 4.

109. Huanhuan Wang, 'Retroactive Liability in China's Soil Pollution Law: Lessons from Theoretical and Comparative Analysis' 2020 *Transnational Environmental Law* 3–4.

110. Bergkamp and Goldsmith (n 33) 86–87.

existence of such circumstances in accordance with the law.¹¹¹ However, the Interpretations do not list the defences but refer to other environmental laws, such as the air pollution law, the water pollution law, and the marine environmental protection law. If the defences are not prescribed in the specific environmental legislations, the general provisions in the Tort Law will be applied.¹¹² Since the Soil Pollution Law does not provide any specific provisions regarding defences, the defences can only be applied in certain circumstances pursuant to the Tort Law. Defences according to the Tort Law are inter alia the fault of the victim,¹¹³ a third-party fault,¹¹⁴ force majeure,¹¹⁵ self-defence,¹¹⁶ and necessary measures in the course of emergent incidents.¹¹⁷

5 ANALYSIS AND UNSETTLED ISSUES

5.1 Nature of the liability regime: administrative or civil liability?

From an historical perspective, the starting point of China's environmental liability was the specific chapter on environmental damage in the Tort Law.¹¹⁸ Consequently, China's environmental liability regimes are in general based on the traditional civil law regime. During the past decades, China has accumulated abundant experience from both legislative and empirical aspects on improving the environmental liability regime, by expanding the scope of the Tort Law from the traditional environmental damage caused by polluting activities to ecological damage,¹¹⁹ establishing the environmental public interest litigation¹²⁰ and the ecological damage compensation litigation regime.¹²¹ The Soil Pollution Law seems to shift towards an administrative law regime and therefore differs in the liability mechanisms from other forms of environmental damage, for example the liability regime for water pollution.

Indeed, the liability regime under the Soil Pollution Law is in essence based on the public or administrative law approach, given that liability for addressing soil pollution is primarily enforced by the public authorities through administrative orders. More particularly, when the risk of soil pollution is identified, the enforcement authorities can force the polluters to take preventive and remedial actions. If the polluters fail to undertake the clean-up work, the enforcement authorities could issue an order to do

111. Ibid.

112. SPC (n 106) Articles 1 and 2.

113. Tort Law, Article 26.

114. Ibid, Article 27.

115. Ibid, Article 28.

116. Ibid, Article 29.

117. Ibid, Article 31. See for example, Michael Faure and Weiqiang Hu, 'Towards A Reform of Environmental Liability in China: An Economic Analysis' (2011) 13 *Asia Pacific Journal of Environmental Law* 225; Adam Moser and Tseming Yang, 'Environmental Tort Litigation in China' (2011) 41 *Environmental Law Reporter* 10895.

118. Tort Law, Chapter 8.

119. Pursuant to Article 18 of the Interpretations, environmental damage caused by environmental pollution and ecological destruction is subject to the applications of the Interpretations.

120. Environmental public interest litigation is established in Civil Procedure Law in 2012.

121. Ecological damage compensation litigation regime is developed in the Plan for the Reform of the Ecological Environment Damage Compensation, issued by the General Office of State Council in December 2017.

certain work, or act itself or through a third party on behalf of the polluters.¹²² In fact, it was not easy to achieve this revolutionary shift under the environmental legal framework in China. Many disputes have been raised during the legislative process.¹²³ In the second draft, the liability regime for soil pollution was designed as the traditional civil law regime. Pursuant to Article 95 of the second draft, if the polluter fails to undertake the duties of risk management and control and remediation, the land usufructuary shall bring a lawsuit to the court, requiring the polluter to bear the tort duties.¹²⁴ This is the traditional civil law approach for remedying environmental damage, where the court has the discretion in determining whether the polluter shall be held accountable and to what extent the polluter shall bear tort liabilities. This article was later removed from the third draft and the final text chooses the administrative law approach instead.

However, the liability regime under China's Soil Pollution Law is not an absolute public law regime. In fact, it leaves a window for civil law regime. According to Article 97,¹²⁵ if soil pollution has caused harm to the public interest and national interest, a qualified authority or organization may submit the claims to the court pursuant to the EPL 2014,¹²⁶ the Civil Procedure Law¹²⁷ and the Administrative Procedure Law.¹²⁸ Accordingly, under the current soil pollution liability regime, in addition to the EPBs, the competent authorities and NGOs are granted legal standing to initiate public interest litigation (PIL) concerning soil pollution damage. This article is perceived as a specific implementation of the 'public participation' principle, with the aim to encourage multiple actors to participate in environmental governance. As a result, the coexistence of civil and administrative law approaches is a substantive feature of the soil pollution liability regime.

Although the fact that different enforcement mechanisms co-exist may have the advantage of providing a wide variety of enforcement possibility, thus potentially better safeguarding ecological interests, the danger is that there may be overlaps and uncertainties concerning the coordination between the different approaches. Chinese law has granted standing to NGOs, procuratorate and the competent authorities¹²⁹ to sue the polluters, in order to cure the failure of environmental regulation and hence to strengthen the protection of public interests on environmental and ecological matters. However, the precise cumulation or coordination between these different approaches has not been regulated in the Soil Pollution Law. This can potentially result in uncertainty and even conflicts of interests if different parties indeed start various procedures at the same time. Currently there is an overlap of different approaches with respect to the procedures aiming at remedying soil pollution damage. This could give rise to disputes and thus to an increase of costs, such as the administrative costs and the costs of judicial procedure.

122. Soil Pollution Law, Article 94.

123. See for example Hu (n 85); Gong (n 94).

124. Soil Pollution Law (second draft), Article 95.

125. Soil Pollution Law, Article 97.

126. Article 58 of the EPL 2014 prescribes the qualification requirements of NGOs to bring the public interest litigations.

127. Civil Procedure Law 2017, Article 55.

128. Administrative Procedure Law 2017, Article 25.

129. Under the current legislation in China, only marine environmental protection bureaus are empowered to bring public interest litigations regarding the damage caused to marine ecosystems, marine resources and marine protected areas, pursuant to Article 89 of the Marine Environmental Protection Law.

These legal uncertainties indicated above can be explained by the ambiguous separation of administrative and judicial branches under the current institutional background in China. As a result, significant inconsistencies are observed within the current soil pollution liability regime, which may adversely affect the effectiveness of this regime. To avoid the potential overlaps and conflicts, it is important to set down the basic rules concerning the application hierarchy of different approaches. We propose that the administrative law approach, whereby competent authorities based on the Soil Pollution Law address the polluters, shall prevail as the primary instrument, keeping the civil law approaches (aiming at ecological damage compensation or public interest litigation by NGOs) rather as supplementary instruments. Several arguments would support this design. First, as clearly stated in the Constitution Law,¹³⁰ environmental protection is state responsibility. Therefore, the liability for soil pollution should be primarily enforced by the public authorities by executing administrative powers rather than via the civil right of compensation.¹³¹ Otherwise, public authorities may be blamed for neglecting their obligations in environmental matters. Second, the administrative law approach has several advantages over the civil law approach, such as the high-level expertise of the enforcement authorities (in many cases the EPBs), the lower information costs, and the quick response particularly in the case of emergent incidents.

5.2 Temporal dimension

Another key issue left unanswered in the Soil Pollution Law is whether this newly established liability regime is retroactive or not. In other words, does the Soil Pollution Law have a retroactive effect on the damage caused before its enactment? As clearly stated in China's Legislation Law, laws, administrative regulations, local regulations, specific regulations and decrees, shall not be retroactive, except for the provisions with the aim of better safeguarding the interests of individuals, legal persons and other organizations.¹³² In certain legal domains, such as the criminal law, retroactivity is strictly prohibited, given its adverse effects on the fundamental value of legal certainty.¹³³ However, exceptions may occur in particular circumstances, and soil pollution might be one among them. Historical pollution has been regarded as a critical issue in combatting soil pollution, by taking two factors into account: the hidden and latency features of soil contamination and the time it takes to draft legislation aiming at the remediation of soil pollution. As a result, the delay is commonly observed between the time of the incidents causing soil contamination (such as an emission or leakage of hydrocarbons into the soil) and the time that the damage is identified. In this context, who will be liable for historical soil pollution becomes a key issue in establishing the liability regime.¹³⁴ A remarkable divergence has been

130. Constitution of China 2018, Article 26.

131. Hu (n 94).

132. Legislation Law of China [2015] Chairman Order No. 20 (15 March 2015), Article 93.

133. See Stephen R Munzer, 'Retroactive Law' (1977) 6(2) *The Journal of Legal Studies* 373–97; James Popple, 'The Right to Protection from Retroactive Criminal Law' (1989) 13(4) *Criminal Law Journal* <<https://ssrn.com/abstract=1335644>>; Dengfeng Yang and Bin Han, 'The Role of Non-Retroactive Principle and the Exception for Application' (2009) 1 *Jingling Law Review* 23–29.

134. Huanhuan Wang, 'An Analysis on the Responsible Party for Historical Urban Contamination Sites' 2014 (4) *Law Review* 124 [in Chinese] (translated from the original texts).

observed across jurisdictions with respect to this issue. Taking the US and the EU as examples, lawmakers from two legal systems adopt distinct approaches to combat historical soil contamination. In 1980, the CERCLA of the US was promulgated with the aim of cleaning up the nation's most contaminated sites. A unique feature of CERCLA is the retroactive effect on actions prior to its enactment.¹³⁵ This means that under the authority of CERCLA, the Environmental Protection Agency (EPA) can force the potential responsible party to either clean up the contaminated sites or pay for the clean-up work without time limitations. On the contrary, the Environmental Liability Directive¹³⁶ (also known as the ELD) of the EU explicitly provides that this regime does not apply retroactively. With respect to the temporal application of the ELD, Article 17 clearly prescribes three scenarios¹³⁷ where the ELD shall not apply to damages caused before 30 April 2007, i.e. the expiry date of the deadline for implementation of the Directive.

Compared to the Western counterparts, it cannot immediately be read from the legal text whether the Chinese Soil Pollution Law is retroactive or not. There seems to be no clear position regarding the historical soil pollution in this new law. Only a few provisions touch upon the retroactive application of the liability regime. Pursuant to Article 71§2, if the damage was caused prior to the implementation of the Soil Pollution Law and the person responsible for soil pollution cannot be determined, the land usufructuary who actually undertook actions for risk management, control, and remediation, can apply for the funding for prevention and remedying of soil pollution.¹³⁸ However, different interpretations could derive from the ambiguous wordings of this provision. First, this provision sets up a special condition where damage was caused before the enactment of the Soil Pollution Law and the polluter cannot be determined. What if the damage was caused prior to 2018 and the polluter can be identified? Should the polluter in these circumstances be held liable? It seems that the legislator had the intention to impose retroactive liability on the polluter. As mentioned above, MEE is authorized to develop detailed rules regarding the identification of liable parties. In the two legislative drafts published on 17 September 2019,¹³⁹ the liable parties refer to any natural and legal person causing damage in the course of emitting, dumping, storing, landfilling, leaking harmful and toxic substances to the soil after the enactment of the Environmental Protection Law (for Trial) in 1979. These provisions could be interpreted as imposing retroactive liability on the polluters, but a general limitation period of post-1979 applies. Second, the land usufructuary is required to take the removal and remedial measures for addressing the historical soil pollution when the polluter could not be tracked in accordance with Article 71. In this case, the retroactive liability also

135. In the case of *United States v. Olin Co.*, the Eleventh Circuit Court of Appeals concluded that although CERCLA does not explicitly prescribe its retroactive effect, it contains a clear congressional intent to be retroactive.

136. Directive 2004/35/CE of the European Parliament of the Council of 21 April 2004 on Environmental Liability with regard to the Prevention and Remedying of Environmental Damage [2004] OJ L143/56.

137. Pursuant to Article 17 of the ELD, this Directive shall not apply to: (a) damage caused by an emission, event or incident that took place before 30 April, 2007; (b) damage caused by an emission, event or incident which takes place subsequent to 30 April, 2007 when it derives from a specific activity that took place and finished before the said date; (c) damage, if more than 30 years have passed since the emission, event or incident, resulting in the damage, occurred.

138. Soil Pollution Law, Article 71§2.

139. See MEE (n 96).

applies to the land usufructuary. But they could apply for funding to reimburse the costs of the clean-up work.

Although the Soil Pollution Law does not explicitly state that it has retroactive effect, it contains a clear intent of legislators that liable parties should be liable for historical pollution prior to the enactment of the Soil Pollution Law in 2018, but after the promulgation of the EPL (for Trial) in 1979.

5.3 Financial guarantees against insolvency

Since the clean-up of contaminated sites is very costly, financial supports are critical in developing a successful liability regime. This will not be a problem if the responsible party can be easily identified and is solvent. However, in practice, several problems make the situation more complicated. The first problem is the impossibility of identifying who should be held responsible. As mentioned above, the nature of soil pollution makes the identification of the persons responsible for soil pollution more challenging. Taking the Changzhou case as an example,¹⁴⁰ the liable parties had experienced many changes, due to mergers, relocations and other factors before the outbreak of this scandal, something which frequently occurs in the case of soil pollution. Learning from the experience of other counties,¹⁴¹ the Soil Pollution Law also introduced several mechanisms to provide financial guarantees for historical environmental problems, including funds, loans, and tax incentives. According to Article 71§1, the State is responsible for establishing a dedicated fund for the prevention and remediation of soil pollution. This fund will be set up at both central and local levels, with specific focus on the prevention and remediation of agricultural land and the risk management of contaminated sites when the polluter or the land usufructuary cannot be identified.¹⁴² Some specific provisions with respect to the use of the fund can be found in the Measures for Soil Pollution Special Fund¹⁴³ issued by the Ministry of Finance and the then MEP. However, many fundamental issues are left unanswered in this new law as well as in the previously mentioned Measures, such as where the money for the funds comes from and how the fund functions in practice. Taking the US funding mechanism as an example, the Superfund created by the CERCLA was financed by two major sources: the liability regime and the tax regime. More particularly, the CERCLA imposed taxes on the chemical and petroleum industries and all business organizations with over \$2 million taxable income.¹⁴⁴ As a result, the Superfund was primarily financed by the industry (the polluter). Although the source of China's soil pollution fund is not explicitly stated, we can tell from the wording of the law and the Measures that this special fund is primarily fed by general revenues, i.e. the taxpayer. This dilutes from the 'polluter pays' principle and leads to under-deterrence of polluters, since it tells the polluters that the government will pay for the problems they create in the end. Therefore, the detailed rules regarding the functioning of the funding mechanism is vital to achieve the remediation of soil pollution.

140. See Chang (n 8).

141. Zhao (n 7) 291–92.

142. Soil Pollution Law, Article 71§1.

143. Ministry of Finance (MoF), Measures for Soil Pollution Special Fund [2016] *Caijian* No. 601 (21 July 2016).

144. Albert Verheij, 'Shifts in Governance: Soil Pollution', in Michael Faure and Albert Verheij (eds), *Shifts in Compensation for Environmental Damage* (Springer, 2007) 16–17.

The second concern is related to the insolvency risk of the liable parties. As discussed in the previous section, it is clear that strict liability is applied to determine whether a party should be held accountable for soil pollution damage. However, it is argued by law and economics scholars that strict liability will only function effectively if the potential party will not face an insolvency risk.¹⁴⁵ In other words, if the accident costs outweighed the financial capacity of the liable parties, strict liability would not provide enough incentives for the polluter and thus lead to the effect of under-deterrence.¹⁴⁶ As a result, law and economic scholars insist on the introduction of a mandatory insurance system to accompany the success of strict liability.¹⁴⁷ However, as the draft of the Measures on Mandatory Insurance of Environmental Pollution (Draft) is pending,¹⁴⁸ a mandatory insurance system is not yet prescribed in the Soil Pollution Law.

6 CONCLUDING REMARKS

China has unfortunately become internationally infamous for its environmental pollution problems. Yet, increasingly also the leadership in China is taking legislative and policy measures to react against pollution, also because this is receiving a lot of attention in the Chinese media. Soil pollution was in fact one of the areas that had not been regulated in an integrated manner yet. There were various regulations at national level and some local legislations, but an integrated Soil Pollution Law was missing. The new Soil Pollution Law of 2018 comes to fill that gap and that is already a very important step.

The new law has some interesting features. It incorporates the ‘polluter pays’ principle by imposing most obligations upon the ‘person responsible for soil pollution’. However, to the extent that that person cannot be identified, the same obligations will be imposed on the land user as a supplementary responsible party. Although the Soil Pollution Law identifies all obligations, it does not determine the final financial responsibilities. This shows that the Soil Pollution Law, like other environmental laws in China, is rather based on an administrative law framework. The final allocation of the financial responsibility will rather be decided by other civil law, the most important one currently being the Tort Law.

Even though this Soil Pollution Law is an important step ahead, creating a clear legislative framework concerning the obligations of various private and public parties, there are still ambiguities and unsettled issues. These relate inter alia to the relationship between the primary responsible polluter and the usufructuary, but also concerning the question of who can bring enforcement actions, given that nowadays China has many different actions that can in principle be used by different actors. The precise way in

145. De Smedt and Faure (n 102) 803–04.

146. William Landers and Richard Posner, ‘Tort Law as a Regulatory Regime for Catastrophic Personal Injuries’ (1994) 13(3) *Journal of Legal Studies* 417.

147. See Steven Shavell, ‘The Judgment Proof Problem’ (1986) 6(1) *International Review of Law and Economics* 45–58; Peter-J Jost, ‘Limited Liability and the Requirement to Purchase Insurance’ (1996) 16(2) *International Review of Law and Economics* 259–76; Göran Skogh, ‘Mandatory Insurance: Transaction Costs Analysis of Insurance’, in Boudewijn Bouckaert and Gerrit De Geest (eds), *Encyclopedia of Law and Economics* (Edward Elgar, 2000) 521–37.

148. Measures on Mandatory Insurance of Environmental Pollution (Draft) was reviewed by the MEE on 19 May 2018.

which coordination between these different actors and actions will take place has not been worked out in detail yet. It is an issue on which, most likely, more guidelines will follow, possibly from the Supreme People's Court of China.

China's Soil Pollution Law has many features that are largely in-line with other modern soil pollution acts (such as CERCLA in the US and the ELD in the EU), but to some extent deviates from those regulations as well, or is to some extent still undetermined, for example related to the question of whether the Soil Pollution Law regime can be applied retrospectively or not. That 'the proof of the pudding is in the eating' applies to this Soil Pollution Law as well: on paper it has the potential to contribute to the prevention of soil pollution and to an adequate remediation of polluted lands. It now remains to be seen exactly how this law will be implemented in practice.