Jean Monnet Working Paper Series

Environment and Internal Market

Vol. 2013/9

Towards a Compensation System for Ecological Damage in China

Lessons to Be Learnt from the EU Environmental Liability Directive

by

Liu Jing

Post-doctoral researcher at the Research Institute of Environmental Law, Faculty of Law, Wuhan University
liujoyjing@gmail.com.

Published on http://www.desadeleer.eu

© Nicolas de Sadeleer, 2012

desadeleer@fusl.ac.be

The alarming environmental costs accompanying China's spectacular economic growth have attracted broad attention in recent decades.[2] Such costs relate not only to traditional damage such as personal injury and property damage, but also to damage to the environment itself.[3] Legal framework for the compensation of traditional damage has been in place for a long time; however, whether damage to the environment itself (referred as ecological damage in this article) is compensable under Chinese law is still debatable.

To establish a compensation system for ecological damage is not only a concern in China but also in the EU. The Environmental Liability Directive (the ELD)[4] was adopted in 2004 to harmonize the legislation on three types of ecological damage. Liability for traditional damage is still left as an issue in the jurisdiction of the Member States (MSs). The transposition of the ELD was completed in 2010. However, very limited cases have been brought under the ELD so far (with the exception of Poland). This working paper tries to examine whether the ELD is sufficient to achieve its goal and what lessons can China learn from it in developing its own compensation system for ecological damage. The main content and implementation of the ELD is explored in Section 1. Section 2 discusses briefly whether ecological damage is compensable under Chinese law and the legal and practical development in promoting the compensation. Section 3 examines how China can develop its own compensation system based on the EU experience.

1. Liability Rules and Compensation Instruments under the ELD

The ELD provides the basic framework for the compensation of ecological damage in the EU. However, given that the matter has been harmonized by a directive, to understand how the ELD works in practice requires to analyze how it has been implemented by the 28 MSs. This section first sketches briefly the main content of the ELD and then explores its transposition and implementation in practice.

---

[2]The costs of environmental degradation were estimated to be 1,274.57 billion RMB in 2008 by Chinese scholars, which composed 3,9 per cent of gross domestic product (GDP). Among them, the imputed costs of soil clean-up reached 540,31 billion RMB (137.73 billion Euro at December 2008) *See* Chinese Academy for Environmental Planning, The Chinese Environmental Economics Accounting Research Report (2008) Has Been Completed, http://www.caep.org.cn/ReadNews.asp?NewsID=2761 (last visited Jul. 31, 2013) (Chinese). The estimate of the World Bank was even more alarming. Their earlier report indicated that the environmental damage cost represented 8 percent of China's total GDP. *See* The World Bank, "Clear Water, Blue Skies: China's Environment in the New Century", 1997, p. 23, *available at*: http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/Clear_Water_Blue_Skies.pdf.

[3] China is now facing a variety of environmental problems, such as heavily polluted groundwater aquifers and surface water, which is regarded as China's number one environmental problem. Air pollution is another area of increasingly concern, especially in big cities. *See* Darcey Goelz, "China's Environmental Problems: Is A Specialized Court the Solution?", *Pacific Rim Law & Policy Journal*, 2009, p. 158-161. Soil pollution started to attract attention recently. It is estimated that the relocation of old industrial facilities from Beijing to outskirts alone will lend to 8,000,000 m^3 brown fields that needed to be redeveloped. *See* World Bank, "Overview of the Current Situation on Brownfield Remediation and Redevelopment in China", Report No. 57953 , 2010, p. 4.

[4] Directive 2004/35/EC of the European Parliament and of the Council on Environmental Liability with regard to the Prevention and Remedying of Environmental Damage, OJ 2004 L143/59.

(1) Main Content of the ELD

The EU has made an effort to establish an EU-wide compensation framework for environmental damage since a long time ago. Such an attempt started from a sector-based approach, specifically in the waste sector. A proposal was made in 1989 to introduce a directive on civil liability for damage caused by waste. This sector-based approach was soon replaced by a broader regime covering environmental liability generally. A Green Paper and White Paper on environmental liability were published in 1993 and 2000 respectively.[5] In the early proposal on civil liability in the waste sector and the Green Paper, the individual and collective compensation mechanisms under a civil law system were discussed. The White Paper, however, introduced a differentiated system: a civil law system for traditional damage and an administrative law system for damage to biodiversity and the contamination of sites. The civil law system led to fierce criticism since it touched upon the tort law which had been built up in Member States over decades. This resulted in the consequence that the Directive adopted by the European Parliament and the Council focused only on an administrative system for the prevention and remediation of environmental damage. A shift from a civil law approach to an administrative law approach happened during the legislative drafting process of the ELD.[6]

The ELD aims at establishing 'a framework of environmental liability based on the polluter pays principle, to prevent and remedy environmental damage.'[7] In the preamble preceding the Directive, the aims are also clarified. For example in Recital 2, it holds that the polluters shall be held financially liable, 'in order to induce operators to minimise the risks of environmental damage so that their exposure to financial liabilities is reduced.' Recital 3 also discusses the objective explicitly: 'to establish a common framework for the prevention and remedying of environmental damage at a reasonable cost to society.' Hence the ELD has the objectives of prevention and restoration, as well as establishing a 'common framework'. To which extent these goals are realized depends on the one hand, on the rules of the ELD themselves and on the other hand, on the national regimes transposing the directive.

In the ELD, the term "environmental damage" is used to refer to the damage to the environment itself. More specifically, the ELD applies to three types of damage: damage to protected species and natural habitats, water damage and land damage. The term 'damage' is defined as 'a measurable adverse change in a natural resource or measurable impairment of a natural resource service which may occur directly or indirectly.' The ELD gives the Member States some discretion in defining the protected species and natural habitats, not only the ones listed in the Directive 92/43/EC and the Directive 2009/147/EC , but also the ones designated by the Member States for equivalent purpose are covered. The water damage includes water under the Water Framework Directive. In defining those two categories, a 'significant adverse effects' threshold is used. For damage to protected species and natural habitats, there should be 'significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or

[5] EC Green Paper on Remedying Environmental Damage, COM(1993) 47 final, 14 May 1993; EC White Paper on Environmental Liability, COM(2000)66final, 9 February 2000.
[6] For a detailed discussion on this shift, *see* Winter, H., Jans, J.H., Macrory, R. & Krämer, L., "Weighing up the Environmental Liability Directive", *Journal of Environmental Law*, 2008, p. 165.
[7] Article 1, the ELD.

species.' To assess the 'significance', one needs to refer to the baseline, taking account of the criteria set in Annex I. Hence to determine whether the damage poses 'damage to protected species and habitats', several factors need to be considered: the baseline condition, favourable conservation status and significance. These requirements are regarded by some scholars as a very high threshold.[8] Some other scholars, however, argue that considering the criteria in Annex I, the "significant threshold" should not be too high. The "significant threshold" criterion should be explained in such a way to ensure that "protected species and natural habitats that suffer damage that adversely affects the ability to reach or maintain their favourable conservation status…are restored to their baseline condition".[9] The assumption of high threshold exists because the "significant threshold" was mistaken as the "severity threshold".[10] For water damage, it should also significantly adversely affect 'the ecological, chemical and/or quantitative status and/or ecological potential'. [11] While as for the land damage, only when the land damage creates a significant risk for human health, it is covered under the ELD. In other words, if the land damage has no direct concerns for human health, the administrative procedure under the ELD will not be triggered.

The ELD covers only occupational activities but not individual behaviour in daily life. It establishes different liability frameworks according to the types of activities. For the damage caused by activities listed in the Annex III as hazardous activities, a strict liability is established. A negligence rule is still applicable if the non-hazardous activities lead to damage to protected species and natural habitats. Two defenses are introduced in the ELD: damage caused by armed conflicted, hostilities, civil war or insurrection and damage caused by a natural disaster. The ELD also allows Member States to decide whether to allow two other defenses: the compliance defense and state-of-the-art defense.

The ELD imposes liability on 'operators' which are defined as anyone operating or controlling the occupational activities or according to the national law, having decisive economic power over the technical functioning of the activity. The operator includes but is not limited to the holder of a permit/authorization or the person registering/notifying such an activity. Though the ELD impose liability on "operators", the term "operator" is broadly defined. Hence the one who is substantively contributing to the occurrence of the damage can be held liable. The ELD is silent on who should bear the burden of proof of the causal link between damage and the operator's activities. This, hence falls within the competences of the MSs. When multiple parties are involved, the ELD allows the Member State to decide whether joint and several liability or several liability is applicable.[12] The liability under the ELD is not retroactive: the Member States were required to transpose the directive into their domestic law by 30 April 2007 and only

[8] Van den Broek, G.M., "Environmental Liability and Nature Protection Areas: Will the EU Environmental Liability Directive Actually Lead to the Restoration of Damaged Natural Resources?", *Utrecht Law Review*, 2009, p. 122.
[9] BIO Intelligence Service, "Implementation Challenges and Obstacles of the Environmental Liability Directive, Final Report Prepared for European Commission", 2013, p.79-80, available at: http://vf.ro/doc/ELD%20implementation%20challenges%20and%20obstacles_Final%20report_16%20May%202013.pdf.
[10] *Id.*
[11] Article 2 (1) (b), the ELD.
[12] Article 9, the ELD.

activities that happened after the coming into force of national law are covered. Another significant characteristic of the ELD is that no cap is introduced for the liability of the operators.

As mentioned earlier, the ELD adopts a system of a more administrative nature rather than a genuine civil liability approach. In case of damage or an imminent threat of such damage, the operators are required to take preventive or remedial actions and to report to the competent authorities.[13] The competent authorities have the authority but not an obligation to require the operators to provide related information or to take the necessary actions themselves.[14] However, if the authorities have indeed taken such measures, they shall recover the costs from the liable operators.[15] Under such a system, whether liability would incur is, to a large extent, determined by the willingness of the competent authorities to take actions in case of (an imminent threat of) damage. The White Paper on Environmental Liability in the EU (White Paper) granted public interest groups secondary standing to claim for ecological damage, if the MS did not act (properly).[16] However, this authorization is not included under the ELD.

The recoverable costs include both prevention and remediation costs. Prevention actions need to be taken when "environmental damage has not yet occurred but there is an imminent threat of such damage occurring".[17] Remedial actions are taken after the happening of environmental damage. They aim at restoring, rehabilitating or replacing damaged natural resources and/or impaired damaged naturel resources and or/impaired services or providing an equivalent alternative.[18] Annex II establishes the criteria to choose remedial measures. For damage to water or protected species/ natural habitats, three types of remediation may be taken: primary remediation, complementary remediation and compensatory remediation. Primary remediation aims at restoring the damaged natural resources (service) to baseline condition. If primary remediation cannot fully restore the environment, complementary remediation needs to be taken. To compensate for the losses pending primary remediation, compensatory remediation needs to be made. For land damage, remediation needs to be taken to make sure that there is no significant risk of adversely affecting human health.

To ensure that operators have compensatory capacity in case of damage, the ELD considers the potential use of mandatory financial security. There was fierce debate as to the need to introduce a mandatory requirement. Although many NGOs and a few Member States supported such a mandatory system, this was opposed by most Member States.[19] This reluctance is reflected in the final text. The ELD only requires the Member State to promote the development of financial security instruments and the Commission to present a report on the availability of such instruments by 2010.[20] An article leading to less attention is Article 8 (2), which requires the authorities to recover preventive/remedial costs 'inter alia, via security over property or other

[13] Article 5 (1) (2), article 6 (1), the ELD.
[14] Article 5 (3), article 6 (3), the ELD.
[15] Article 8 (2), the ELD.
[16] COM (2000), 66 final, Section 4.7.
[17] Article 3 (10), the ELD.
[18] Article 3 (11), the ELD.
[19] *See* De Smedt, K., "Is Harmonisation Always Effective? The Implementation of the Environmental Liability Directive", *European Energy and Environmental Law Review*, 2009, p. 11.
[20] Article 14, the ELD.

appropriate guarantees' from liable parties. This provision has led to some confusion in its implication. Bocken argues that it establishes an *ex post* obligation on the operators to provide an appropriate guarantee to cover their liability under the Directive if an incident giving rise to liability has taken place. [21]

(2) The Transposition and Implementation

a. Transposition

The ELD required Member States to transpose it into domestic law by 30 April 2007. However, only three Member States met this deadline: Italy, Lithuania and Latvia. Only on 1 July 2010, had all Member States transposed it completely.[22] Though the ELD aims at establishing a common framework for environmental damage, room is given to the Member States to determine some critical elements of the liability, such as the scope of the regime, available defenses and so on. The Member States can also adopt more stringent provisions in relation to the prevention and remediation of environmental damage.[23] It is reported that the national regulations implementing the directive vary significantly. Some countries have gone further than the ELD by giving a broader definition of environmental damage, such as Poland, Austria, England and Sweden.[24] They include species and habitats protected under national/regional protection regimes. For the scope of activities covered by strict liability, a number of Member States also include further activities not listed in Annex III. [25]Member States also vary in the adoption of defenses: fewer than half of the Member States allow both permit and state-of-the-art defenses; some allow neither of them, while others choose only one of the defenses. [26]

As far as the financial security is concerned, only a minority of Member States have a compulsory financial guarantee requirement: the Czech Republic, Slovakia, Spain and Hungary. Considering the lack of experience, most Member States are reluctant to do so. Even for the Member States which decided to introduce a compulsory system, a gradual approach is adopted, either in terms of timing, covered industrial sectors (for example starting from IPPC industries) or covered liabilities (for example starting from primary remediation).[27] Furthermore, there are some other Member States that require an *ex post* financial security mechanisms after an incident

---

[21] Bocken, H., "Financial Guarantees in the Environmental Liability Directive: Next Time Better", *European Environmental Law Review*, 2006, p. 13-32.

[22] De Smedt, K. & Faure, M., "The Implementation of the Environmental Liability Directive: A Law and Economics Analysis of the Transposition of the ELD in Belgium, the Netherlands and Germany", *Zeitschrift für Europäisches Privatrecht*, 2010, p. 784.

[23] Article 16, the ELD. See also Article 193 TFEU.

[24] Insurance Europe, Navigating the Environmental Liability Directive, A Practical Guide for Insurance Underwriters and Claims Handlers, April 2009, p. 10, available at: http://www.insuranceeurope.eu/uploads/Modules/Publications/1240585425_eld-best-practice-guide-update.pdf.

[25] Report from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions: under Article 14 (2) of Directive 2004/35/EC on the Environmental Liability with regard to the Prevention and Remedying of Environmental Damage, 2010, p. 3.

[26] *Id*, p. 3-4.

[27] BIO Intelligence Service, "Study on the Implementation Effectiveness of the Environmental Liability Directive (ELD) and Related Financial Security Issues", 2009, p. 28-33, available at: http://ec.europa.eu/environment/legal/liability/pdf/ELD%20Study%20November%202009.pdf.

giving rise to liability has taken place, such as the Flemish and Walloon Region in Belgium.[28] Many insurers also oppose a compulsory financial security system, considering the limited market demands, the heterogeneity of risks across countries and industries, moral hazards[29] and so on.[30] As required under the ELD, a report was published in 2010 on the financial security. In this report, the Commission concludes that 'there is not sufficient justification at the present time for introducing a harmonized system of mandatory financial security.' It requires a further review of the option of mandatory financial security before 2014. [31]

In addition to these optional provisions, the ELD also allows the application of national law in defining some liability elements. For example, when defining the term "operator", the ELD allows to include the party who has a decisive economic power over the activity, if "provided in national legislation". Most countries have used the same definition as under the ELD, whereas some MSs have a broader definition, such as Estonia, Finland, Hungary, Lithuania, Poland and Sweden.[32] One typical example is Polish law, where an "operator" is defined as "an entity which uses the environment within the meaning of [existing environmental legislation] which carries out an activity involving a risk of environmental damage, or any other [specified activity] causing environmental damage or an imminent threat of such damage".[33] This broad definition is regarded as one reason for the higher number of ELD claims in Poland.[34] Other provisions specifically providing for the application of national law includes liability in case of multiple tortfeasors and the determination of the interested parties who can submit to the competent parties observations relating to damage or can request the competent to take action.[35]

The unprecise language used in ELD is another factor explaining the differences in transposition and difficulties encountered in the process of implementation. For example, as discussed above, the "significance threshold" has caused confusion in determining whether the ELD is applicable. It is sometimes understood as "severity threshold" and leads to the rare cases where such a threshold is actually exceeded.[36] To determine water damage, divergent approaches can be used. Some MSs interpret it to include any water defined by the Water Framework Directive and others limit it to an entire surface or groundwater body.[37] Other examples of imprecise language include whether available defenses are related to costs or liability, whether emergency remedial actions are remedial measures and so on.[38]

---

[28] De Smedt & Faure 2010, *supra* not 21, p. 805.
[29] Moral hazard means that whenever the risks are insured and hence covered by the insurance policies, the insured undertaking tends to take a lower level of care. .
[30] Stakeholder & Practitioner Workshop Implementation of the ELD in the EU Report, 8-9, available at: http://ec.europa.eu/environment/legal/liability/pdf/workshop/report.pdf; Nils Hellberg, ELD Stakeholder Workshop, Financial Security, available at: http://ec.europa.eu/environment/legal/liability/pdf/workshop/pres_Hellberg.pdf.
[31] European Commission 2010,*supra* note 24, p. 10.
[32] *Id*, paragraph 2.2.
[33] BIO 2013, *supra* note 8, p. 38-39.
[34] As discussed in next section, the claims under ELD in most MSs are limited with the exception of Poland. See *id*, p. 108-109.
[35] For those variations in national law of MSs, *see id*, p. 39-44.
[36] Van de Broek 2009, *supra* note 7, p. 122.
[37] BIO 2013, *supra* note 8, p. 59-60.
[38] *Id*, p. 61-68.

b. Implementation

Nine years after the adoption of the ELD, it is reported that the general awareness among stakeholders is low, especially among SMEs. There have been still very limited ELD cases so far with the exception of Poland. It is reported that there have been more than 500 cases of imminent threats and damage registered in the competent authority in Poland. Several reasons can explain the high number. Firstly, given that the previous environmental liability legislation was unclear and difficult to apply, the ELD has been regarded as a useful instrument. Besides, there are no restrictions placed on the persons who may provide a notification of imminent threat and damage. The terms "operator" and "land damage" are also defined broadly in Poland.[39] In contrast, ELD cases are still very limited in the other countries. As of early 2013, there have been less than ten cases applying the ELD in Germany and no cases in France and Denmark.[40] In addition to the low awareness among stakeholders, many other factors also account for the slow implementation, such as the lack of political will, linkages with exiting legislation, difficulties in determining the 'significant' threshold with respect to environmental damages, insufficient expertise and resources[41] and the availability of baseline data (environmental status before the occurrence of the damage).[42]

As for the financial security, a survey of major industrial sectors in 2010 showed that most companies (75 percent of the respondents) use insurance to cover their liability risks.[43] In the existing insurance market, there have been already some products available to cover on the one hand, the general environmental liability, and on the other hand the ELD liability. For example, some General Third Party Liability policies (GTPL) cover third-party damage caused via the environment. It is the primary insurance policy used by companies to cover their environmental liability.[44] Some Environmental Impairment Liability Policies (EIL) also exist, covering both third-party damage and some public liability (cleanup requirements). The EIL coverage is often taken during a land transaction, merger or acquisition. However, it is reported that the EIL market is still quite limited.[45] Experts hold that there is still little awareness of the influence of the ELD among many insurers and polluters.[46] Some stand-alone policies to cover ELD liability also began to emerge in recent years, such as the policy provided by Allianz AGF, AXA and XL Insurance.[47] However, those products also have some limitations, such as the exclusion of gradual environmental damage, sub-limits or exclusions for compensatory remediation and

[39] *Id*, p. 108-109.
[40] *Id*, p. 96.
[41] *Id*, p. 119-135.
[42] For damage to protected species and natural habitats, this is especially true with the non-Natura 2000 sites. *See* Van den Broek 2009, *supra* note 7, p. 123-124.
[43] Ad-Hoc Industry, "Natural Resource Damage Group, Report: Survey of Industrial Companies, Insurance and Other Financial Security Instruments and Remediation of Environmental Damage under the EU Environmental Liability Directive", 2010, p. 3, Brussels, available at: http://www.endseurope.com/docs/100219b.pdf.
[44] *Id*.
[45] BIO 2009, *supra* note 26, p. 57-62.
[46] Interview with Mr. Kremers, Verenidge Assurantiebedrijven Nederland, 8th October, 2012, Maastricht, Interview transcript on file with the author.
[47] For a Summary of the available insurance products in the EU market, see BIO 2009, *supra* note 26, p. 41-43.

damage from non-pollution events.[48] During the development of insurance products, the insurers also express their concerns about the insurability of such risks, risk assessments and potential compulsory requirements. [49]

The European Commission is considering the feasibility to establish a compensation fund to cover environmental liability. It commissioned a study on "the feasibility of creating a fund to cover environmental liability and losses occurring from industrial accidents" to Bio Intelligence Service, Stevens & Bolton LLP, Naider and TME.[50] This study was prompted by an initiative taken by Hungary. As a matter of fact, a major accident hit in 2010 the MAL alumina factory near Kolontar, Hungary, which caused 10 deaths, several hundred people injured and contaminated 1,000 hectares of land. The estimated cost was around 115 million Euro, beyond the financial capacity of the polluter. In response to this accident, the Hungarian government took an initiative to establish 'a European Industrial Disaster Risk-Sharing Facility (the facility) to be funded by an annual levy on targeted industries and companies.' According to the Hungarian authorities, this facility should provide for coverage in case the sum of traditional and environmental damage stemming from a major industrial accident would exceed 100 million Euro. This scheme is predicated on the assumption that the insurance or other guarantees taken by polluting companies can cover up to 100 million Euro. Accordingly, the Hungarian proposal aims at providing a quick response to a major accident and to limit the financial exposure of each company to 100 million Euro. However, some details of this facility structure are unclear and many challenges remain. For example, a compulsory financial security up to 100 million Euro is assumed. However, whether a compulsory financial security should be established under the ELD is still under dispute. Moreover, the SMEs may have neither the capacity nor the willingness to get financial coverage up to 100 million Euro. In fact, environmental risks across countries and sectors are heterogeneous, which may lead to cross-subsidy via pooling. The ongoing Commission's project is still exploring the feasibility of such a fund or pooling system. Whether an environmental fund can be established to cover environmental risks in Europe remains to be seen.

2. Compensation for Ecological Damage in China: Status Quo and New Development

Both civil law and environmental statutes provide the basis for environmental liability. However, it is not clear whether ecological damage is compensable under these environmental liability rules, with the exception of marine oil pollution. In practice, the restoration for ecological damage is not guaranteed. In recent years, this type of damage started to attract broad attention and some new development has moved forward to establish a restoration/compensation system for ecological damage. This section first examines whether ecological damage is compensable

---

[48] *Id*, p. 57-62.

[49] CEA, "Navigating the Environmental Liability Directive: a Practical Guide for Insurance Underwriters and Claims Handlers", 2009, available at: http://www.insuranceeurope.eu/uploads/Modules/Publications/1240585425_eld-best-practice-guide-update.pdf; Swiss Re, "Insuring Environmental Damage in the European Union", 2007, available at: http://www.asstech.com/en/downloads/Umweltschaeden_en.pdf.

[50] http://blogs.ec.europa.eu/orep/study-to-explore-the-feasibility-of-creating-a-fund-to-cover-environmental-liability-and-losses-occurring-from-industrial-accidents/

under existing law and whether restoration/compensation happens in practice. Then a few new developments are sketched.

(1) Is Ecological Damage Compensable?

The earliest specific environmental liability rule can be found in General Principles of Civil Law of 1986 (GPCL)[51], under which a violation of legal obligations is a prerequisite to incur liability. This requirement was implicitly removed by the Environmental Protection Law of 1989 (EPL),[52] which introduces a strict liability regime. These contradictory provisions and the interpretation of the violation requirement have led to confusion in both Chinese legal scholarship and case law.[53] Finally, the confusion has been clarified in 2009 by the newly adopted Tort Liability Law (TLL),[54] which reiterates the strict liability for environment damage. A specific chapter (Chapter VIII) of the TLL is dedicated to environmental liability. Accordingly, Article 65 stipulates that:

'Where any harm is caused by environmental pollution, the polluter shall assume the tort liability.'

It is worth noting that the application of strict liability is very broad here. As long as damage is caused by environmental pollution, no fault needs to be established. It does not matter whether the activities which cause environmental pollution are extremely dangerous or not.

The defenses for general tort liability allowed under the TLL is limited. They include damages caused by third parties, the intention or the fault of the injured party, the force majeure, etc.[55] These defenses also apply to environmental liability. Environmental liability is subject to one exception: whenever the damage is caused by a third party at fault, the victim of the pollution can choose to seek compensation either from the polluter or the third party.[56] Given the difficulties met by the victims to prove the causal link between the polluting activities and the damage, the TLL provides for a reversal of the burden of proof.[57] In spite of this improvement, it is usually accepted that the victim bears at the outset the burden of a preliminary proof of the

[51] Article 124 of GPCL: "Any person who pollutes the environment and causes damage to others in violation of State provisions for environmental protection and the prevention of pollution shall bear civil liability in accordance with the law." The General Principles of Civil Law (promulgated by the Nat'l People's Cong., 12 April 1986, effective 1 January 1987) [hereinafter GPCL]. An unofficial English copy can be found at: <http://www.china.org.cn/china/LegislationsForm2001-2010/2011-02/11/content_21898337.htm>.

[52] Article 41 of EPA: A unit that has caused an environmental pollution hazard shall have the obligation to eliminate it and make compensation to the unit or individual that suffered direct losses.
Environmental Protection Act (promulgated by the Standing Comm. Nat'l People's Cong., promulgated and effective on 26 December 1989) [hereinafter EPA]. An unofficial English copy can be found at: <http://www.china.org.cn/english/environment/34356.htm>.

[53] *See* on these debates, Faure, M. & Hu, W., "Towards a Reform of Environmental Liability in China: An Economic Analysis", *Asia Pacific Journal of Environmental Law*, 2011, p. 231-233.

[54] Tort Liability Act of the People's Republic of China (promulgated by the Standing Comm. Nat'l People's Cong., 1 January 2010, effective 1 July 2010) Art. 70 (China) [hereinafter 2009 Tort Liability Law]. An unofficial English copy can be found at: <http://www.procedurallaw.cn/english/law/201001/t20100110_300173.html>.

[55] Chapter III of the TLL.

[56] Article 68, the TLL.

[57] Article 66 of the TLL stipulates that: *Where any dispute arises over an environmental pollution, the polluter shall assume the burden to prove that it should not be liable or its liability could be mitigated under certain circumstances as provided for by law or to prove that there is no causation between its conduct and the harm.*

existence of the environmental damage before the reversal can take place.[58] This requirement prompts several questions. How to define the scope of the victims' burden of proof and the threshold of the proof is still unclear.[59] In case of multiple tortfeasors, an apportionment of liability will apply, considering the nature of the pollutants, the volume of emissions as well as other factors.[60]

As discussed above, the TLL provides the basic framework for environmental liability. However, it is less clear whether such rules also apply in case of ecological damage. Article 65 of TLL applies when "harm is caused by environmental pollution". The interpretation of "harm" needs to be made in line with the goal and the scope of the TLL. Article 1 explicitly states the goal as protecting "the legitimate rights and interests of parties in civil law relationships". The scope of application is limited in article 2 to the infringements on "civil rights and interests". The "civil rights and interests" are defined by a list of personal/property rights/interests, together with a catch-all provision. However, ecological damage is not explicitly included in that list. Hence the TLL provides little guidance as to whether ecological damage is compensable. To answer this question, one still needs to look at specific environmental statutes. Pursuant to the Marine Environmental Protection Act (MEPA), marine oil pollution is the only area where compensation for ecological damage is explicitly allowed.[61] As a result, the polluter is obliged to clean up the pollution and to compensate the damage caused to the marine environment.[62] A judicial explanation further delimits the scope of ecological damage, including costs of preventive measures and further loss or damage, costs of reasonable measures which have been taken or are about to be taken to restore the polluted environment.[63] This scope is still limited since compensation is only possible when restoration is taken or to be taken. Moreover, interims losses pending restoration is not compensable. That being said, in explicitly providing for compensation of ecological damage, the MEPA is in effect a breakthrough in Chinese law. This shift was made possible on the account that China is a party of the International Convention on Civil Liability

[58] Moser, A. &Yang, T., "Environmental Tort Litigation in China", *Environmental Law Reporter*, 2011, p. 10897.

[59] For example, in practice, the standards used to establishing liability for fishery losses vary significantly. Sometimes the plaintiff is required to prove that the polluting activities of the defendant. In some other cases, the victims shall provide preliminary evidence that "it is more likely than not that the defendant polluted the environment and caused the victim harm". A third scenario with lower burden requires: "the plaintiff has suffered a quantifiable loss; this harm has been proven to be caused by pollution and in the relevant temporal and physical space there is a possible source of this environmental pollution". Sometimes it goes so far to ask the victims to provide direct evidence of causal link. Only when such standards are satisfied, the burden of proof can be shifted to the polluter. *See* McMullin, J., "Does Chinese Environmental Laws Work? A Study of Litigations as A Response to the Problem of Fishery Pollution in China", *UCLA Pacific Basin Law Journal*, 2009, p.168-171.

[60] Article 67 of the TLA: "*Where the environmental pollution is caused by two or more polluters, the seriousness of liability of each polluter shall be determined according to the type of pollutant, volume of emission and other factors"*.

[61] [Marine Environmental Protection Act] (promulgated by the Standing Comm. Nat'l People's Cong., Aug. 23, 1882, revised Dec. 25, 1999, effective April 1, 2004) [Hereinafter MEPA].

[62] Article 90 of the MEPA.

[63] [Provisions of the Supreme People's Court on Several Issues Concerning the Trial of Cases of Disputes over Compensation for Vessel-induced Oil Pollution Damage] (promulgated by the Judicial Committee of the Supreme People's Court, effective on July 1, 2011) (Hereinafter the 2011 explanation), Article 9. For details of compensation for ecological damage under the MEPA, see Michael Faure & Liu Jing, *Compensation for Environmental Damage in China: Theory and Practice,* accepted by Pace Environmental Law Review, 2013 Volume.

for Oil Pollution Damage (the CLC)[64] and the International Convention on Civil Liability for Bunker Oil Pollution Damage (the Bunker Convention).[65] It goes without saying that the liability rules for vessel-induced marine oil pollution are deeply influenced by the international conventions.[66]

However, in other fields, it is not clear whether there is an obligation to clean up ecological damage and whether such damage is compensable. The obstacle exists not only in law but also in practice. A full discussion of the restoration/compensation of ecological damage in China is out of scope here. This section uses soil pollution as an example. There are no specific liability rules for soil pollution in China. Though general environmental liability rules can apply, many questions exist, such as who is the polluter (producer of the pollutants/existing or past land users) and who should be liable where the legal personality of the polluters fades away (bankruptcy, etc.). In practice, the government, and not private polluting undertakings, is playing a key role in cleaning up polluted soils. This can be explained by the fact that many heavy industries used to be (and to a large extent still are) state-owned enterprises. Therefore the government, that acts as representative of the owners of such enterprises, is regarded as the agent responsible to clean up historically polluted sites.

For a long period, soil pollution remained a problem largely unnoticed. It started to attract broad attention with the implementation of "from two to three" policy, which means the shift from secondary industry (heavy industry) to the (less polluting) tertiary industry (such as businesses and industries providing services) in urban areas. Admittedly, large scale industrial relocation and sites redevelopment began to take place, shedding the light on soil pollution issues.[67] The government sometimes tries to shift the clean-up costs to polluters or redevelopers (to whom the land use rights were transferred).[68] However, it is not always the case that the burden of restoration would be placed on redevelopers. Media coverage may prompt such governmental actions. Hence, the issue is subject to broad public attention. Moreover, even when the soils are cleaned up, it is often done as a response to emergency situations. Admittedly, the long-term restoration usually does not take place.

(2) New Development

[64] International Convention on Civil Liability for Oil Pollution Damage, CLC 1992: Misc 36 (1994), Cm 2657, RMC I, 7.51, II. 7. 51.

[65] The International Convention on Civil Liability for Bunker Oil Pollution Damage, RMC I.7.130, II.7.130.

[66] For the detail about liability for vessel-induced marine oil pollution, *see* Liu, J., Faure, M. & Wang, H., "Compensating for Natural Resources Damage Caused by Vessel-Induced Marine Oil Pollution: Comparing the International Regime, the US and China", accepted by *Journal of Environmental Law and Litigation*, 2013 Volume.

[67] For more detailed information about the relocation of industries in some urban cities in China, *see* Word Bank, Overview of the Current Situation on Brownfield Remediation and Redevelopment in China, Report No. 57953, September 2010, available at: <http://documents.worldbank.org/curated/en/2010/09/13132932/overview-current-situation-brownfield-remediation-redevelopment-china>.

[68] One example is the restoration at the Beijing Hongshi Paint Plant sites. A pesticide plant used to locate there, which was later transformed into the paint plant. According to the assessment report, the polluted soil amounted up to 140,000 m3. The government called for bids for the redevelopment of the site after relocation. The winning bidder is required in the bidding document to prepare and implement the restoration plan. This leads to the costs of tens of millions RMB on soil remediation. *See id*, p. 23.

In spite of the legal and practical obstacles in the restoration/compensation of ecological damage, a few improvements have taken place recently. The above analysis shows that but for marine oil pollution, it is unclear whether ecological damage is compensable under Chinese law. However, even if is submitted that such damage is subject to compensation, concrete regulatory devices are still lacking. For example, ecological damage usually encompasses damage to the public natural resources, where no individual interest is at stake. Therefore the question arises as to who has standing to claim such damage. In addition, given that the environment has no-market value, it cannot be fully evaluated through classical market value analysis. Besides, the quantification of ecological damage gives rise to another difficulty. Moreover, liability rules do not guarantee that they will be implemented. Hence, given the risk of insolvency faced by potential polluters, financial security instruments, such as insurance, have an added value. These issues have been discussed in the section on recent developments.

According to the Civil Procedure Law (CPL), the plaintiff needs to have a direct interest in the case.[69] This is problematic for ecological damage, where no individual interest is at stake. The recent revision of the CPL has relaxed this requirement, stipulating that: "if environmental pollution and activities infringing on many consumers' legal rights harm public interests, the authorities and organizations prescribed by law can bring a suit in the people's court".[70] Accordingly, this provision allows to a limited extent public authorities and NGOs to lodge a public interest lawsuit. Only the parties identified by the lawmaker have standing. This would be the case of the authorities under the MEPA.[71] In other areas, public interest litigation remains difficult. It must be stressed that the mushrooming of environment courts is a propitious breeding ground for public interest litigation. As of 2013, there were 134 environmental courts at different levels in China.[72] Some courts have adopted documents with a view to offering guidance to the adopting courts regarding which cases are deemed to be acceptable.[73] Some of the documents mention specifically that NGOs, environmental protection agencies or public prosecutors can lodge environmental public interest law suits.[74]

---

[69] Article 108 of Civil Procedural Law. [Civil Procedure Law] (promulgated by the Nat'l People's Cong., April 9, 1991, effective April 9, 1991, revised Oct. 29, 2007) [Hereinafter CPL]. An unofficial English copy can be found at: http://china.findlaw.cn/jingjifa/shewaifalv/swflfg/20110414/91492.html.

[70] Point 9 of Civil Procedure Law Revision. The Civil Procedure Law was revised in 2012 and came into force from January 1st, 2013. Standing Committee of National People's Congress Decision to Revise Civil Procedure Law in People's Republic of China (promulgated by Standing Committee of National People's Congress, August 31, 2012, effective as of Jan 1, 2013) (Hereinafter Civil Procedure Law Revision).

[71] It authorizes the public authorities in charge of marine environmental supervision and management to claim for losses, if there is damage to the marine ecosystem, to marine fishery resources and to the marine protected areas. Article 90, the MEPA.

[72] http://www.acef.com.cn/news/lhhdt/61014.shtml.

[73] The documents adopted by the local courts are not deemed to be "formal acts" in China. The Supreme Court may issue judicial explanations with a view to interpreting concrete issues during the application of "acts" in judicial procedure. The the lower courts are bound by these judicial explanation.. However, the lower tier of courts is not endowed with such power. These courts may issue some documents guiding the judicial procedure. Other courts than the court issuing these documents are not bound.

[74] *See* Gao, J. "Development of Environmental Courts in China: the Promises and Challenges and Implementation for Environmental Public Interest Litigation", 2009, available at: <http://www.iucnael.org/zh/component/search/?searchword=environmental+court&ordering=&searchphrase=all>.

Regarding the compensation of ecological damage, another hurdle must be overcome: quantification. The question that needs to be asked is how non-market values of the damaged environment - such as ecological and aesthetic values - can be evaluated? Though there have been no comprehensive binding assessment standards for ecological damage yet, a first step was taken thanks to the adoption of the Recommendation on Methods on Assessing Environmental Damage (the Recommendation).[75] This recommendation offers some general guidance on assessing five types of damage caused by environmental pollution: personal injury, property damage, emergency response costs, assessment costs and restoration costs. However, it is not mandatory. Regarding ecological damage, three headings are relevant: emergency response costs, assessment costs and restoration costs. The calculation of restoration costs should be based on the actual restoration projects. If this method is not possible, the recommendation allows calculation based on the stimulated restoration/remediation (timing a factor determined by sensitivity of the environmental function).[76] It is worth noting that the Recommendation does not require to restore the environment to the initial status before the damage occurred, but to reduce the risks stemming from the pollution to an acceptable level[77]. What is an "acceptable level", however, requires further clarification. The losses pending restoration are not compensable under the Recommendation. Following this recommendation, a Temporary Assessment Rule for Pollution Damage Caused by Environmental Accidents has been drafted. This assessment establishes a procedure for responding, assessing and restoring pollution damage caused by sudden accidents. [78] It applies to the pollution damage assessment conducted by the environmental agencies according to the arrangements of the government of the same level in response to the environmental accident. It divides the assessment procedure into emergent response as well as mid- and long-term assessment. It mainly establishes the procedure for the environmental agencies to follow during the assessment (starting point of the assessment, jurisdiction, appointment of the assessment institution, monitoring, etc.). However, it does not further clarify the assessment standards. This assessment is subject to consultation.

Mere liability rules cannot guarantee compensation. Liable parties can become insolvent in case of damage. The insolvency problem, when combined with strict liability, can lead to under deterrence.[79] An environmental insurance market started to develop in China to relieve this problem. Existing legislation is silent on environmental insurance issues, with the exception of the MEPA. The government started to promote the development of environmental insurance since 2007, and adopted the 'Opinion on the Development of Environmental Pollution Liability

[75] Recommendation on Methods on Assessing Environmental Damage is adopted by Chinese Academy for Environment Planning, designated by the Ministry of Environmental Protection. It is not legally binding. *Available at* http://www.mep.gov.cn/gkml/hbb/bwj/201105/W020110530352486511962.pdf (In Chinese).
[76] *Id*, section 4.5.
[77] *Id*, section 3.2 (5).
[78] Temporary Assessment Rule for Pollution Damage Caused by Environmental Accidents (Consultation Draft), published by the Ministry of Environmental Protection, *available at* http://www.mep.gov.cn/gkml/hbb/bgth/201301/W020130128364526585764.pdf.
[79] Schäfer & Müller-Langer, "Strict Liability versus Negligence", in: Faure, M. (ed.), *Tort Law and Economics*, 2009, p. 8-11.

Insurance'.[80] It requires local authorities to conduct research and experiments on environmental liability insurance. The environmental insurance market started to develop thereafter. Before 2007, the main insurance product covering environmental liability was liability insurance with an extension to pollution risks. Stand-alone environmental liability insurance policies became available after 2007. It usually covers personal injury and property damage, but not specifically pure ecological damage. Clean up costs (but not at polluters' sites) are sometimes covered,[81] but restoration costs are usually excluded. In addition to specific environmental liability insurance, other policies, such as product liability insurance and property insurance also have the potential to cover environmental damage. However, their actual application is rare. In spite of the development of environmental insurance in recent years, a few difficulties remain. For example, insurers mention adverse selection as an important problem, since it is mainly high-risk companies that are interested in purchasing environmental liability insurance. The reported amount of coverage is low compare to potential risks. Besides, the comparatively high premium also makes insurance less attractive. Based on the existing experience, the government tries to introduce a mandatory insurance system gradually. The Ministry of Environmental Protection adopted the "guidance on pilots of mandatory environmental pollution liability insurance" in 2013.[82] This guidance requires a few enterprises - heavy metal industry and other enterprises required by local laws and government - to purchase environmental liability insurance. Regarding other enterprises whose activities entail environmental risks, the guidance encourages them to seek insurance coverage. [83] The covered risks should include third party personal and property damage, prevention costs, clean up costs and other risks covered under the insurance contracts. The amount of insurance should be able to cover the pollution losses.[84]

3. Lessons to Be Learnt: Towards an Efficient Compensation System in China

The ELD establishes a legal framework to respond and compensate for ecological damage in the EU and has influenced the national law in MSs through transposition. However, till now, the ELD's practical effects are somewhat limited. Scholars have been largely attributing the ELD' shortcomings to the poorly drafted provisions.[85] China is still in its infancy in developing

[80] Opinion on the Development of Environmental Pollution Liability Insurance (promulgated by Ministry of Environmental Protection and China Insurance Regulatory Commission, 4 December 2007, Huanfa [2007] No. 189), available at: http://www.zhb.gov.cn/info/gw/huanfa/200802/t20080220_118389.htm.

[81] Cleanup costs can either be covered under environmental liability policies or via added clauses. The Clause of Environmental Pollution Liability Insurance (China Continent Property & Casualty Insurance Company Ltd.) is an example of the former, available at: <http://www.iachina.cn:8080/iaclause/clause/html/20091207041357078.html>,. The added clause on Cleanup costs to Environmental Liability Insurance provided by China Pacific Insurance Co. Ltd. Is an example of the latter. (Hereinafter CPIC added clause) available at: <https://www.cpic.com.cn/cx/upload/Attach/infordisclosure/50867389.pdf>.

[82] Guidance on Pilots of Mandatory Environmental Pollution Liability Insurance [issued by Ministry of Environmental Protection and China Insurance Regulatory Commission, issued on January 21st, 2013, Huanfa [2013]No.10], available at: http://www.circ.gov.cn/web/site0/tab68/i236857.htm.

[83] *Id*, section 2.

[84] *Id*, section 3.

[85] For example, according to Ludwig Kramer, "two-thirds of the problems related to the ELD are due to the drafting of the legislation and not to its implementation", *see* Workshop Minutes: Study on Implementation Challenges and Obstacles of the Environmental Liability Directive, Organized by European Commission, BIO Intelligence Service, Stevens & Bolton LLP, on 16 January 2013, p. 10-11, available at: http://eldimplement.biois.com/meetings.

compensation rules for ecological damage. Though a few reforms have been achieved, more comprehensive devices have to be carved out. Therefore, the achievements and inefficiencies alike of the ELD provide lessons for the forthcoming designing of Chinese liability rules.

(1) Approach to Adopt New Liability Rules

As discussed above, the ELD aims at establishing "a common framework for the prevention and remedying of environmental damage".[86] It stipulates some basic elements of the compensation (restoration) system. However, it also leaves many issues unsolved. The ELD includes a few optional provisions such as the scope of application, defenses and financial security. Besides, the manner in which the ELD has been transposed varies among MSs. Moreover, regarding the issues that the ELD does not harmonize, domestic law still applies. Hence, though the ELD was aiming at establishing a common framework in the EU for the prevention and remedying of environmental damage, it actually adds to the complexity and fragmentation. This is less of a problem in China on the account that it is a unitary state. Admittedly, the same legal system applies to the whole country. That being said, though the concerns of adding fragmentation is eased, the relationship between compensation system for ecological damage and general environmental liability rules still needs to be clarified. Given its characteristics, ecological damage is distinct from traditional environmental damage. Among these characteristics, one could stress the important role played by public authorities, the difficulties to quantify the damage as well as standing issues.[87] Specific rules therefore need to be adopted with the aim of restoring and compensating ecological damage. However, the relationship between the specific rules and general environmental liability rules needs to be clarified. For example, the general environmental liability rules provides for strict liability, the reversal of the burden of proof and a limited number of defenses. Whether such rules should also apply to ecological damage deserves more attention.

The application of the ELD is limited to three types of damage: damage to protected species and habitats, land damage and water damage. Most protected natural resources are already regulated by EU law: protected species and habitats are covered under Directive 92/43EEC or Directive 2009/147/EC or equivalent provisions of national law on nature conservation; the damaged water is defined under the Water Framework Directive.[88] On the one hand, this is limiting the application of the ELD; on the other hand, existing legislations offer more information on the state of protected natural resources. The available baseline information adds to the feasibility of the damage evaluation. In China, a balance also needs to be struck between the breadth of coverage and the availability of data. Ecological damage is only explicitly admitted in the field of marine oil pollution thanks to the influence of international conventions. The expansion of the compensation system to ecological damage prompts the question whether there is a need to establish a sector/media based approach, specifically, allowing compensation for several types of damage or to adopt a more comprehensive one. The sector/media based approach introduces the

[86] Consideration 3, the ELD.
[87] For more detailed discussion about the characteristics of ecological damage, *see* Faure, M. & Liu, J., "*New Models for the Compensation of Natural Resources Damages",* Kentucky Journal of Equine, Agriculture, and Natural Resources Law, 2012, p. 261-314.
[88] Article II (1), the ELD.

compensation system for ecological damage gradually. However, the distinction between sectors and media may sometimes be arbitrary. One accident may cause different types of damage. Hence, the individual systems may add to the complexity. The introduction of a more comprehensive system may run into problems as well. The above analysis shows that to obtain baseline information in the EU is already difficult, let alone in China. Though at first sight it may sound attractive, a comprehensive system might not be feasible. When designing a compensation system in China, the authorities should strike a delicate balance between a comprehensive compensation system and a sector-based one.

(2) Clear Definition of Damage and Assessment Standards

The unprecise language used under the ELD has been criticized, including the definition of water damage and the "significance threshold". This unclear language led to confusion in practice and limited the application of the ELD. When designing liability rules for ecological damage in China, the terminology needs to be clarified: not only the covered damage but also the threshold of damage and baseline condition. Whether a significance or severity threshold will be applied and whether initial status or other standards should be applied as restoration baseline also needs to be explicitly addressed.

There is no binding assessment rules for ecological damage in China. The Recommendation[89] establishes a restoration-based approach, which resembles the ELD assessment for damage to protected species and habitats as well as water damage. However, interim losses are not compensable under the Recommendation. Though costs of ecological damage is not completely internalized under such circumstances, this limited compensable scope is based on the assessment capacity of China where to conduct an accurate assessment of the interim losses is still difficult to conduct at this stage. As a result, ecological damage is compensable in its own rights.. Whether broadening the compensable damage is possible in the future needs to take into consideration the improvement of the capacity.

(3) Standing

Another difficulty in establishing liability for ecological damage is the standing issue. The ELD empowers competent public authorities to claim both prevention and remediation costs. The secondary standing of public interest groups considered under the White Paper was not included in the ELD. In China, though the new revised Civil Procedure Law has expanded the standing on public interest litigants, without requiring explicit authorization under specific statutes, the possibility for public authorities or public interest groups to claim for ecological damage is still rather limited.

Besides, in the EU, the public authorities have the choice to intervene or not in case of (the threat of) damage. Hence damage may be left not remediated even where the liable operators failed to do so. In China, the ecological damage restoration requires a clear division of duties among public authorities. The future legislation should also clarify whether the intervention is left at the discretion of the authorities or is mandatory.

[89] See supra note 75.

(4) Financial Security

The ELD encourages MSs to develop financial security mechanisms to cover the potential liability. This can provide better guarantee for compensation and alleviate the insolvency concerns. However, due to the unfamiliarity with the new type of liability and underdevelopment of insurance market, a harmonized mandatory financial security system is regarded as not feasible at this stage. Only a limited number of MSs tried to introduce a mandatory system however belatedly. Discussion on introducing an EU environmental compensation fund is still ongoing and many issues still need to be clarified. In China, environmental liability market only started to develop a few years ago. Most policies cover traditional damage caused via the environment, but have limited relevance to ecological damage. Cleanup costs are sometimes covered, but not restoration costs. The government tries to introduce mandatory insurance system gradually, but there is still a long way to go for a developed insurance market.