Identification and Implementation of Legal Liability for Soil Pollution: An Analysis Based on the Changzhou Toxic Land Case

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Article

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Abstract: The Changzhou toxic land case has become a microcosm of the legal liability challenges regarding soil pollution in China. There is urgent need to clarify the retroactivity principle and classification of litigation time limit rules, enhance the soil pollution remediation system coordinating public and private law mechanisms, and strengthen accountability mechanisms within the systematization of environmental litigation. On the one hand, it is imperative to establish the legal liability framework for soil pollution in the *Ecological Environment Code*, ensuring its articulation with other subsections of the pollution control code and legal liability code, while constructing specific provisions through effectiveness systems, responsibility systems, and litigation systems. On the other hand, adopting the "true retroactivity" principle while differentiating types of litigation time limit rules. Meanwhile, delineating environmental legal responsibilities between the Xinbei district government and the three chemical plants, with particular consideration to eligibility criteria for responsible parties and exemption grounds.

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Economic development and environmental pollution are inextricably intertwined, coexisting as inseparable companions. Compared to general environmental pollution, soil contamination exhibits distinct characteristics: greater latency and persistence, more diverse manifestations, broader impacts, longer duration, and more complex pollution pathways and media (Koul and Taak, 2018; Petrović et al., 2014). Moreover, unlike conventional environmental legal liability, soil pollution liability subjects are often tied to specific land users, developers, or owners, involving significantly higher remediation costs and greater technical challenges (Scullion, 2006). Taking soil pollution caused by toxic elements as an example, soil in over 5 million locations worldwide has been contaminated, causing serious impacts on agricultural production, with China experiencing the most severe pollution situation (Khan et al., 2021; Qu et al., 2016; Drenguis, 2014). The unique complexity of soil pollution liability raises a pressing question for advancing ecological civilization in the new era: how to accurately identify and effectively enforce legal responsibility for soil pollution.The Changzhou toxic land case epitomizes the practical challenges in implementing soil pollution liability in China. This case involves convoluted and multifaceted legal liability categories, while current theoretical research remains fragmented and insufficiently focused.

Existing studies have explored specific dimensions: some delve into the scope of responsibility for soil pollution remediation (Cho, 2005) or improving statute of limitations rules for environmental litigation (Globerman and Schwindt, 1995); some have analyzed the relationship between soil pollution prevention and control in China and promoting sustainable use of agricultural land from the perspectives of legislation and judiciary (Feng et al., 2025); some have introduced the formulation and implementation of the *Soil and Environmental Protection Act* (SECA) in South Korea (Yoon, 2015); some are studying the criminal responsibility or legal framework for soil pollution in Western Europe, Russia and Ukraine (Movchan and Kamensky, 2024; Yakovlev, 2022; Ciobanu, 2013) or Spain's soil

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pollution control measures (Ramón and Lull, 2019); some have also analyzed issues such as land ownership, land use, and land degradation in Pakistan (Niazi, 2003) or compared the compensation liability for damages caused by soil pollution to individuals in some European countries (Betlem and Faure, 1998); some focus on the issues such as land tenure security or soil pollution and agriculture in sub Saharan Africa (Chigbu and Babalola, 2025; Tindwa and Singh, 2023); some explore the main causes of land pollution in Nigeria and the land pollution remediation strategies adopted (Sam et al., 2022) or the legal policies for soil pollution prevention and control in the Kingdom of Saudi Arabia (Hegazy et al., 2024). Overall, constrained by space or subject limitations, most existing studies fail to provide in-depth arguments regarding the legal theories and normative principles underpinning liability for soil pollution. Furthermore, current research has not adequately explored the positioning and configuration of legal liability for soil pollution within the broader framework of environmental law. It is precisely this gap that constitutes the primary objective of this study: to build upon the aforementioned research, striving to summarize insights and address these deficiencies.

As the first comprehensive exploration of retroactivity, litigation time limits, hierarchical prioritization of liable entities, typological coordination of responsibilities, and judicial safeguards for soil pollution liability, this study constructs a tripartite systematic argumentation spanning effectiveness, accountability, and litigation mechanisms. Its contributions hold significant theoretical and practical value for both codifying *Ecological Environment Code* and advancing environmental law enforcement and judicial application. Specifically, on the one hand, this studyr clarifies the functional positioning and content logic of legal liability for soil pollution in the *Ecological Environment Code*, thus filling the research gap of previous single perspective to a certain extent. On the other hand, it responds to the current dilemma of the Changzhou toxic land case retrial, clarifies the responsibility sequence and types of the Xinbei district government and three chemical plants, and proposes a public-private collaborative mechanism for soil pollution remediation, providing some reference for the retrial of the Supreme People's Court.

1. The Introduction of Changzhou Poison Land Case: Case Review

The methodological significance of case analysis far surpasses that of a simple "exemplification" technique. It constitutes a core method with profound epistemological value and strategic research importance across numerous fields such as social sciences, management, law, and education. The Changzhou toxic land case serves as an epitome of the practical challenges in establishing legal liability for soil pollution in China. Having remained unresolved for nearly a decade, it warrants in-depth investigation into the implicit legal liability propositions it embodies. This constitutes the primary rationale for employing case analysis methodology in this study. On the whole, from the initiation of the environmental civil public interest litigation by environmental organizations in 2016 to the Supreme People's Court's commencement of the case's retrial in August 2022, the issues surrounding legal liability for soil pollution in the Changzhou toxic land case have remained complex and challenging.

In May 2016, the Friends of Nature and the China Biodiversity Conservation and Green Development Foundation filed an environmental civil public interest lawsuit, demanding that three defendant chemical companies assume environmental legal liability under three categories: (1) eliminating environmental pollution and bearing remediation costs, with monetary compensation substituting physical remediation if restoration proved infeasible; (2) issuing a public apology; and (3) covering litigation expenses, including appraisal and assessment fees. Regrettably, while the Jiangsu Provincial Intermediate People's Court acknowledged that the defendants' pollution posed risks to public interests, it dismissed all claims in its judgment (Changzhou Intermediate People's Court, 2016). The court ruled that the government's ongoing remediation efforts negated the defendants' liability and deemed the plaintiffs' evidence insufficient to meet the stringent "clear and convincing" standard for proving environmental torts.

Following the first-instance judgment, the Friends of Nature and the China Biodiversity Conservation and Green Development Foundation appealed to the Jiangsu Provincial High People's

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Court in 2017. The second-instance court confirmed the ongoing contamination of soil and groundwater alongside the government's remediation efforts, framing two core disputes: whether the respondents were liable for environmental pollution torts, requiring examination of corporate ownership restructuring, land reserve agreements, and historical factors to determine their legal status; and whether they should assume environmental risk control and remediation obligations, involving the prioritization and interaction between polluter liability and governmental duties, including cost-transfer feasibility. In Judgment No. 232, Su Min Zhong (2017), the court adopted a compromise by distinguishing these liabilities: while affirming the respondents' tort liability, it exempted them from remediation obligations due to ongoing government efforts, ordering only symbolic remedies—public apologies in national media and appellants' burden of legal fees—while paradoxically avoiding substantive remediation costs (Jiangsu Higher People's Court, 2017). This reasoning raised jurisprudential contradictions: if polluters were legally liable, why exempt them from remediation, thereby obscuring the nature of environmental liability? If contamination persisted, why exclude polluters from shared fiscal responsibility, failing to clarify the interplay between governmental and polluter duties? By dismissing remediation costs as "uncertain", the court arguably prioritized procedural rigidity over public interest, leaving unresolved how polluter accountability aligns with sustainable governance principles.

In early 2019, the Friends of Nature and China Biodiversity Conservation and Green Development Foundation petitioned the Supreme People's Court for a retrial, citing unclear fundamental facts and erroneous application of law. In March 2020, the Supreme People's Court accepted the case for review, commenced trial proceedings in August 2022, and the matter has currently remained under adjudication (Duo, 2022).

2. The Practical Dilemma of Legal Responsibility for Soil Pollution

The Changzhou toxic land case, a legally intricate case in China's environmental liability domain, has remained unresolved for over seven years since environmental NGOs initiated litigation, enduring first-instance, second-instance, and retrial proceedings without conclusion. Its practical dilemmas reflect systemic issues in soil pollution liability theory, legislation, and practice. Building on the factual reconstruction and legal analysis of the Changzhou toxic land case, the core issues in soil pollution liability can be systematically differentiated and examined, primarily manifested in retroactivity of law, statute of limitations, and liability determination. On one hand, the principle of non-retroactivity remains ambiguously regulated, with uncertainties over whether the three-year litigation time limit applies; on the other hand, the hierarchy of responsibility between public and private entities is undefined, while liability types and enforcement mechanisms remain diverse and intertwined.

2.1. The Myth of Legal Retroactivity and the Statute of Limitations

2.1.1. Incomplete Regulation of the Principle of Non-Retroactivity

Soil typically serves as a critical sink for terrestrial pollutants, and soil contamination exhibits multifaceted characteristics such as multi-source origins, cumulative effects, latency, persistence, unpredictability, and irreversibility. These attributes result in the temporal dislocation of legal facts in soil pollution cases, where evolving environmental legal relationships often span transitions between old and new laws, inevitably invoking foundational jurisprudential questions of retroactivity.

The Changzhou toxic land case, initiated in 2016 with its first-instance trial, entered retrial proceedings post-2022, with the entire litigation process yet to conclude. Throughout this period, issues have arisen regarding the application of newly enacted or revised laws, including the *Soil Pollution Prevention and Control Law*, the *Civil Code*, and the *Interpretation on Applying Punitive Damages in Ecological and Environmental Tort Disputes*. Both the first-instance and second-instance courts acknowledged the public-interest nature of the subject matter, recognizing that ecological and environmental benefits belong to all citizens. These benefits, characterized by their public, holistic, and spillover attributes, differ fundamentally from traditional private interests, necessitating special

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consideration of the increasing difficulty and cost of ecological remediation over time. In the retrial, the court must balance legal stability and environmental public interest, weighing the parties' litigation expectations and legal reliance. China lacks explicit provisions on whether the principle of non-retroactivity applies to judicial interpretations, with prevailing debates divided between retroactive application to the effective date of the interpreted law versus post-promulgation applicability. For procedural law, the principle of applying new procedural laws generally governs, except for jurisdictional finality, allowing ongoing cases to adopt the latest procedural interpretations.

2.1.2. Unclear Applicability Premises of the Three-Year Statute of Limitations

Article 66 of the *Environmental Protection Law* stipulates a three-year limitation period for environmental damage claims but fails to clarify its applicability to private-interest versus public-interest environmental cases. In private environmental tort cases, the *Civil Code* enumerates special circumstances exempt from statutory time limits. However, China lacks explicit provisions on the statute of limitations for environmental public interest litigation. In the Changzhou toxic case, the first-instance defendant Changyu company argued that the plaintiffs should have filed suit within three years of discovering the pollution, claiming the action was time-barred. The first-instance court sidestepped the statute of limitations issue, dismissing the claims based on ongoing governmental remediation. During the second instance, the respondents maintained the time-bar defense, but the appellate court ruled that the defendants failed to prove public disclosure of environmental damage reports, thereby deeming the action timely.

However, the appellate court's rationale for affirming compliance with the statute of limitations fails to withstand rigorous scrutiny. Had the three chemical plants proactively disclosed environmental damage through media within the three-year period, the second-instance judgment's logic would paradoxically preclude judicial accountability mechanisms against the polluters. This approach not only undermines timely redress of ecological interests but also encourages unethical practices where polluting entities exploit statutory time limits post-environmental harm. Furthermore, the mechanistic application of the three-year limitation rule conflates private-interest environmental tort litigation with public-interest environmental claims, imposing a uniform standard that risks oversimplification and obstructs comprehensive protection of ecological rights.

2.2. Practical Dilemmas in Legal Liability for Soil Pollution

2.2.1. The Disorderly Allocation of Responsibilities Between Public and Private Entities

Since the environmental protection organization filed an environmental civil public interest lawsuit in 2016, the Changzhou toxic land case has gone through first and second trials, and until August 2022, when the Supreme People's Court initiated a retrial of the case, the fundamental issue of the priority of environmental legal liability subjects has been in urgent need of clarification.

Compared to traditional legal responsibilities, environmental legal responsibilities are aimed at environmental interests with public attributes, requiring the government to play a leading role in environmental governance responsibilities and the supplementary role of judicial relief models. There is no unified theoretical basis for government environmental responsibility in academia, mainly existing in theories such as public goods theory and agency theory (Zhu, 2017). The government's environmental responsibility can be divided into its environmental supervision and governance functions, as well as the legal responsibility it should bear for not performing its duties in accordance with the law. It is fulfilled through environmental legislation, environmental administration, and environmental justice to fulfill its pre responsibility, and through civil liability, administrative liability, and criminal liability to pursue post responsibility (Zhu, 2017).

In the Changzhou toxic land case, one of the main legal disputes lies in the competition between the legal responsibility of private entities and the environmental responsibility of public power, that is, how to coordinate the relationship between the principle of liability for damages and the government's governance responsibility. In the Changzhou toxic land case, the government's risk

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control and ecological restoration of contaminated land should be considered as a duty based on public management and service functions. The second instance judgment also pointed out that the government's restoration behavior does not conflict with the principle of polluter responsibility. At this point, it is necessary to distinguish whether the government's repair actions belong to obligations or responsibilities. The former is more of a functional requirement granted by the law, while the latter is the responsibility that should be borne after violating obligations. At this level, regardless of the logical starting point, restoring the ecological environment seems to be an inevitable action of the government. However, it is mixed with the responsibility of polluters for remediation, so it cannot be generalized. Therefore, this is not only a theoretical issue involving the legal nature of the responsibility of polluters to repair and the responsibility of the government to repair, but also a technical issue of the implementation mechanism of the cooperation between public power and private entities to govern the environment.

2.2.2. Convergence of Environmental Legal Liability Types in Case Proceedings

In the case of environmental pollution in tengger desert that shocked China and foreign countries, it not only involves the responsibility of the polluter of the park company, but also fundamentally lies in the supervision of the environmental administrative authority. For the handling of administrative staff, in addition to disciplinary actions, criminal responsibility has also been pursued for staff suspected of dereliction of duty and dereliction of duty. In addition, in August 2023, lujiazui company filed a lawsuit against suzhou iron and steel group, third-party environmental assessment agencies, and administrative departments with the Jiangsu Provincial High People's Court, which also involved the ecological environment restoration responsibility of polluters, the joint liability of third-party environmental assessment agencies, and the national compensation responsibility for suzhou environmental administrative departments' illegal exercise of powers or inaction, including party and government sanctions, civil liability, administrative penalties, and criminal penalties.

The *Civil Code* and the *Interpretation on Several Issues Concerning the Application of Law in Ecological and Environmental Tort Dispute Cases* establish general civil liability mechanisms, such as restoration to original condition and public apology. Friends of Nature and the China Biodiversity Conservation and Green Development Foundation argued that the three chemical companies should bear obligations including ecological restoration, remediation costs, and public apology; however, the second-instance court upheld only the apology while omitting polluters' remediation duties or costs. Concurrently, the *Civil Code* and its judicial interpretations have extended punitive damages to ecological torts, innovating beyond traditional civil liability frameworks. Judicial activism in environmental governance has further diversified, as courts and procuratorates nationwide explore alternative restoration methods such as carbon sink purchases, labor substitution, reforestation, fish stock replenishment, and public education campaigns. Yet their legal basis and implementation hierarchy remain contested. For instance, articles 16 and 22 of the *Interpretation on Several Issues Concerning the Application of Law in Forest Resource Civil Disputes* recognize forestry carbon sinks as both security interests and substitutes for ecological compensation. While pioneering, such practices lack clarity in superior legal foundations, applicability criteria, and procedural standards.

3. The Legal Logic of Legal Liability for Soil Pollution

To address the practical dilemmas highlighted in the Changzhou toxic land case, the jurisprudential rationale underlying soil pollution liability can be articulated through three dimensions. Firstly, clarifying the principle of retroactivity and categorizing statute of limitations rules, while delineating their specialized application in soil pollution liability contexts. Secondly, establishing public-private collaboration in remediation by prioritizing administrative enforcement while leveraging private-law mechanisms as complementary tools. Thirdly, under the systematization of environmental litigation, defining the legal nature and normative hierarchy of environmental public interest litigation to ensure procedural coherence and substantive equity.

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3.1. Special Application of the Principle of Retroactivity and Statute of Limitations

3.1.1. The Principle of Retroactivity in Environmental Law

In jurisdictions such as the United States, legislative norms generally support retroactive application in determining liability for soil pollution remediation (Wang, 2020). But the *European Liability Directive* considers non retroactivity applicable to historical damages (Vozza, 2017). Legal facts are categorized as instantaneous or continuous, with social rule-of-law states prioritizing public interest protection. Consequently, the scope of retroactivity—traditionally a doctrine limiting new laws' temporal reach—is narrowed to align with societal welfare imperatives. The persistence of continuous facts creates an intermediate zone between retroactivity and non-retroactivity: "untrue retroactivity" , where new laws apply to concluded pre-enactment facts but produce prospective legal effects only. The German Federal Constitutional Court adopted this dichotomy of "true retroactivity" and "untrue retroactivity" in rulings under the revised *German Code of Civil Procedure* (Wang, 2020).

Current legal doctrine holds that "true retroactivity" should be prohibited in principle and permitted exceptionally to preserve legal stability and predictability, whereas "untrue retroactivity" should be permitted in principle and prohibited exceptionally to ensure the immediate effect of new laws. An absolute prohibition on retroactivity contravenes societal progress and lacks substantive fairness, necessitating exceptions where public interest justifies retroactive application to override citizens' legitimate expectations.In the context of soil pollution remediation liability, the complexity, latency, and prolonged nature of polluting acts or events—coupled with the multiplicity of polluters, contamination facts, and causal relationships—require that the totality of legal constitutive facts serve as the benchmark for retroactivity determinations. Regarding temporal demarcation in this field, the objective existence of pollution rather than its discovery should define the critical timeline. If pollution is discovered post-enactment of a new law, the law applies automatically without retroactivity concerns; if discovered pre-enactment, the legal constitutive facts ostensibly appear complete, suggesting non-retroactivity. However, if contamination persists into the post-enactment period, new constitutive facts supersede the ostensibly complete pre-enactment facts, creating conceptual gaps where subjective discovery dictates retroactivity applicability. This paradox unreasonably subordinates ecological protection to procedural formalism, undermining systemic equity.

3.1.2. Typological Differentiation of Statute of Limitations Rules

Article 196 of the *Civil Code* explicitly exempts claims for "cessation of infringement, removal of obstructions, and elimination of dangers" from the statute of limitations. This exception applies specifically to private-interest environmental liability, rooted in the nature of remedial claims in rem or absolute right claims under property law. Such claims target existing obstructions or imminent threats, precluding the possibility of creating a perceived "absence of rights" to third parties. Since no third party can reasonably develop legitimate expectations regarding the nonexistence of these property-related claims, their exemption from statutory time limits does not impair third-party assessments of the obligor's financial credibility. Meanwhile, article 179 of the *Civil Code* designates "issuing a public apology" as a form of civil liability and explicitly exempts it from the statute of limitations under article 995. This exemption arises from the inherent nature of remedies for personality rights infringements, such as apologies and reputation restoration, which protect personal dignity and spiritual interests—a principle underscored by their codification in "Book IV: Personality Rights" of the *Civil Code*.

Furthermore, articles 1234–1235 of the *Civil Code* pertain to public law liability and specialized environmental legal liabilities within civil law, corresponding to specialized environmental litigation such as environmental civil public interest litigation, ecological and environmental damage compensation litigation, and marine natural resources and ecological environment public interest litigation. These provisions must be distinguished from traditional environmental civil liability and private-interest litigation, as they are attributable to environmental harm and human harm,

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respectively. Comparatively, article 109 of the *German Civil Code* prescribes limitation periods of 10 to 30 years for non-personal injury damages, while the *Russian Federal Environmental Protection Law* establishes a maximum limitation period of 20 years. For citizens in affected areas suffering private environmental rights violations due to soil pollution, they may file environmental civil private-interest lawsuits seeking restoration to original condition and compensation for damages under traditional private law, subject to the standard three-year statute of limitations. Conversely, for public-interest environmental liability, differentiated treatment is required to construct a comprehensive, coherent, specific, and tiered system of limitation periods tailored to ecological and environmental litigation.

3.2. Soil Pollution Remediation System Under Public-Private Collaboration

3.2.1. Leveraging the Leading Role of Administrative Enforcement

Based on the fundamental principle of "polluter pays" in environmental law, the responsibilities of polluters to remediate ecosystems and compensate for ecological losses, as stipulated in articles 1234-1235 of the *Civil Code*, can be fulfilled through voluntary action, administrative enforcement, or judicial mechanisms. However, relying solely on administrative agencies is insufficient to address the complexity and long-term nature of ecological restoration. It is necessary to promote functional coordination between public and private law in ecological and environmental protection, requiring collaboration between public authorities and private societal entities. This is exemplified in practices such as consultations and remediation by third-party professional agencies, which align with the evolving trend of "privatization of public law" and "publicization of private law." The integrated development of public and private law grants administrative agencies dual flexibility in selecting both the responsible entities and the forms of action when safeguarding environmental public interests. This facilitates the rational allocation of the hierarchy of environmental legal liability, forms of liability, and types of litigation, thereby enhancing the institutional efficacy of environmental legal liability realization mechanisms.

Foreign legislative experiences also reflect the integrated development of public and private law. For instance, the United Kingdom explicitly allows administrative entities to negotiate ecological remediation with private entities through "Enforcement undertakings", while the United States' *Comprehensive Environmental Response, Compensation, and Liability Act (Superfund Act)* demonstrates synergistic integration of public and private law in implementing ecological damage liability mechanisms (Persico et al., 2020). Regarding "response actions", the Environmental Protection Agency (EPA) first attempts to reach settlement agreements with potentially responsible parties. If unsuccessful, it may resort to unilateral administrative orders or civil judicial injunctions. In practice, administrative orders are also often prioritized over litigation.

3.2.2. Realizing Public Law Obligations Through Private Law Mechanisms

Ecological and environmental remediation liability carries public law characteristics, yet its implementation may employ hybrid public-private mechanisms. Ecological damage encompasses ecological, environmental, and resource values, thereby distinguishing the protected interests of environmental legal liability from traditional personal injury, property damage, or emotional distress claims. Undeniably, ecological remediation obligations inherently belong to the public law domain, requiring administrative agency leadership and prioritized administrative enforcement. Under Dutch and U.S. legal frameworks, administrative agencies play a critical role in initiating and overseeing environmental remediation processes. Future systems should establish an ecological damage relief framework with public law as the foundation supplemented by private law. Specifically, through the "publicization of private law", environmental public law obligations are fulfilled via referral and transformation clauses in the *Civil Code* that leverage private law frameworks. Conversely, under the "privatization of public law", environmental public law obligations primarily

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utilize private law auxiliary means to better execute remediation responsibilities—a manifestation of public-private collaboration.

When mandatory administrative enforcement proves ineffective or reaches a deadlock, administrative authorities may proactively engage in consultations with polluters as the traditional regulatory model centered on "power control" and "dominance" no longer aligns with social governance innovation demands, necessitating a transition toward participatory governance and collaborative co-management rooted in deliberative democracy theory—a reflection of private law's autonomy principle achieved through bilateral agreements on ecological liability. While consultation agreements nominally position administrative agencies as equal parties, their public-interest nature evidenced by remediation obligations' public law attributes and parties' administrative identity requires alignment with environmental public interests. Failed or protracted negotiations oblige governments to promptly file ecological damage compensation lawsuits.

All in all, future frameworks ought to clarify administrative leadership, prosecutorial supervision, judicial safeguards, and neutral institutions' expertise, establishing comprehensive third-party remediation rules covering entity selection, implementation standards, and post-remediation evaluations while developing tiered remediation objectives—differentiating baseline restoration, human health risk thresholds, and ecological risk tolerances—to guide context-specific liability systems tailored to environmental characteristics.

3.3. Liability Mechanisms Under a Systematic Environmental Litigation Framework

3.3.1. Clarifying the Legal Nature of Environmental Public Interest Litigation

With the evolution of modern judicial activism, civil public interest litigation—as a form of social activism—advances distributive justice and reflects the expanding functional scope of civil litigation. China's 2017 amendments to the *Civil Procedure Law* incorporated procuratorial civil public interest litigation, while the *Judicial Interpretation on Environmental Civil Public Interest Litigation* progressively established preventive procuratorial civil public interest litigation mechanisms. In China, eligible plaintiffs include environmental NGOs and procuratorial organs, with NGOs holding priority over procuratorial bodies in initiating lawsuits. Nevertheless, regardless of the plaintiff, courts—as the de facto dominators of civil public interest litigation under current frameworks—retain strengthened judicial authority, exercising superficial "representational rights" to activate proceedings. For instance, article 9 of the *Judicial Interpretation on Environmental Civil Public Interest Litigation* confirms courts' dominant role in procedural oversight, indirectly distinguishing it from traditional litigant autonomy in civil cases. Similarly, article 18 of the *Interpretation on Procuratorial Public Interest Litigation* reinforces this judicial-centric model. This judicial dominance stems from the absence of substantive preclusion mechanisms for environmental NGOs or procuratorial organs when initiating civil public interest litigation, allowing it to operate parallel to administrative public interest litigation. In contrast, U.S. citizen suit provisions under environmental statutes mandate pre-litigation notice requirements and allow diligent enforcement by administrative agencies to preclude private actions, thereby positioning administrative power as the frontline guardian of public welfare (Craig, 2000).

Unlike remedial-focused civil public interest litigation, administrative public interest litigation safeguards public welfare through judicial oversight of governmental agencies, emphasizing preventive functions. The establishment of such lawsuits does not require actual harm as a prerequisite, as their purpose lies in averting potential damage. Since the 2017 amendment to the *Administrative Procedure Law* introduced administrative public interest litigation, developing refined objective litigation mechanisms has become a priority. Although preventive norms—as part of enhancing administrative public interest litigation—remain legislatively undefined, practice primarily achieves interaction between prosecutorial and administrative powers through pre-litigation procedures, using enforcement supervision to protect public interests. Indian public interest litigation similarly targets unlawful administrative actions and omissions, permitting lawsuits only against state entities when public interests are compromised, while German environmental NGOs' group litigation follows analogous principles.

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China's *Administrative Procedure Law* and its judicial interpretations institutionalize "procuratorial recommendations" as pre-litigation procedures for administrative public interest litigation, playing critical filtering roles in judicial practice—including preventive litigation addressing "significant risks of public interest harm." However, unclear boundaries between prosecutorial and administrative authority create uncertainties regarding the timing of prosecutorial intervention. This ambiguity stems from undefined scopes of "significant risks" and the inherent discretionary power of procuratorial organs, ultimately reflecting the unresolved functional positioning and division of responsibilities between these two powers. Premature prosecutorial involvement could disrupt administrative management of social order and activities, whereas delayed intervention might fail to timely safeguard public interests already facing substantial risks.

3.3.2. Clarifying the Hierarchical Priorities of Environmental Public Interest Litigation

While articles 16-17 of China's Provisions on the *Trial of Ecological and Environmental Damage Compensation Cases (Provisional)* prioritize ecological damage compensation litigation over civil public interest litigation, they omit clarification on its relationship with administrative public interest litigation. Similarly, legal instruments such as the *Judicial Interpretation on Procuratorial Public Interest Litigation* and the *Procuratorate Public Interest Case Handling Rules* lack explicit coordination mechanisms between civil and administrative public interest litigation. In practice, China's procuratorial public interest litigation system exhibits a "civil-centric, administrative-marginalized" imbalance. The institutional misalignment between administrative and judicial authority not only escalates procedural costs but also conflicts with constitutional mandates defining their respective roles. The resolution of 99.1% of public interest cases during pre-litigation phases highlights the indispensability of collaborative governance between procuratorial and administrative bodies in protecting public welfare (The Supreme People's Procuratorate, 2023). Procuratorial and judicial institutions should uphold administrative primacy by prioritizing preventive administrative public interest pre-litigation procedures—compelling agencies to proactively address environmental risks—while assigning civil public interest litigation a secondary, remedial function. This hierarchy, however, acknowledges that both litigation forms ultimately serve complementary roles in rectifying administrative enforcement failures. Notably, the U.S. system parallels this approach, treating environmental civil and administrative public interest litigation as supplementary safeguards while positioning regulatory enforcement as the primary mechanism—a tripartite framework emphasizing administrative leadership (Adelman and Glicksman, 2019).

As evidenced by the Ecological and Environmental Damage Compensation System Reform Plan and the Ecological and Environmental Damage Compensation Management Regulations, ecological damage compensation litigation operates as an institutional arrangement enabling administrative bodies to better execute constitutional environmental obligations under national policy mandates. Meanwhile, natural resource asset damage compensation litigation—grounded in state ownership of natural resources—diverges fundamentally from public interest litigation in remedial targets and standing bases. Consequently, it should be differentiated from ecological damage compensation litigation and established as a distinct litigation category, coexisting as a specialized judicial mechanism.

4. Two Aspects of Realizing Legal Responsibility for Soil Pollution: Rule and Practice

This paper rigorously analyzes the jurisprudential underpinnings of the case, offering normative and practical conclusions to construct liability realization pathways. On the one hand, leveraging the codification of the Ecological Environment Code, soil pollution liability provisions should be systematically positioned through coordinated effectiveness frameworks, comprehensive liability systems, and integrated litigation mechanisms to harmonize with other code chapters. On the other hand, addressing soil pollution's uniqueness requires optimizing the non-retroactivity principle with phased exceptions, applying differentiated statute of limitations rules as liability prerequisites, and clarifying the Xinbei district government's distinct responsibilities versus the three chemical plants.

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4.1. Normative Construction of Soil Pollution Legal Liability

4.1.1. Codification Positioning of Soil Pollution Legal Liability

The current academic discourse predominantly focuses on the codification methodology, structural framework, liability attributes, and positioning of the legal liability chapter within China's *Ecological Environment Code*, with insufficient attention to integrating soil pollution legal liability into the code. A consensus has formed that legal liabilities should be distributed across specialized chapters and general provisions. Soil pollution liability, as an intersection of the pollution control and legal liability chapters, necessitates systematic positioning. It prioritizes prevention in the pollutant source control subchapter based on the *Water Pollution Prevention and Control Law* and *Air Pollution Prevention and Control Law* and centering remediation in the soil pollution control subchapter grounded in the *Soil Pollution Prevention and Control Law*—provides critical guidance. This paper supports distinguishing soil pollution liability from other pollution obligations, reflecting legislative realities and its uniqueness in functional positioning, retroactivity principles, liable entity scope, and liability hierarchy. Additionally, coherence must be strengthened between the soil pollution liability subchapter and the code's general principles, legal liability, and other chapters through bridging norms, alongside harmonizing it with other pollution control subchapters.

4.1.2. Codification of Soil Pollution Legal Liability

Firstly, the non-retroactivity principle in soil pollution liability reflects not only the protection of public reliance interests but also the safeguarding of environmental rights, requiring balanced application through refined restrictive rules that differentiate liability types and retroactivity criteria. It is imperative to categorize retroactive liability subjects, scopes of retroactive liability, the nature and extent of polluting acts, and temporal boundaries of retroactivity, distinguishing between comprehensive versus partial retroactivity, phased retroactivity versus statute of limitations truncation, and highly hazardous toxic substances versus other pollutants, while refining liability caps, mitigation clauses, exemptions, and enhancing the retroactivity framework for soil pollution remediation obligations through judicial interpretations. Given soil pollution liability's uniqueness, the code should establish new statute of limitations rules based on a dualistic legal structure, improving supplementary provisions for subjective-objective determination of commencement points and interruption grounds, differentiating standing bases and applicable scopes between environmental public and private interest litigation, clarifying distinctions among plaintiffs (environmental NGOs, administrative agencies, procuratorates) and specialized litigation types (environmental civil public interest litigation, environmental administrative public interest litigation, ecological damage compensation litigation) to ensure liability precision and procedural-substantive alignment.

Secondly, codifying the *Ecological Environment Code* should clarify hierarchies: polluters bear primary liability, land users supplement, agencies safeguard, and procuratorates supervise, while developing rules for compensation recovery, liability transfers, land-type differentiation, soil reuse protocols, pollution assessments, risk evaluations, and remediation verification to systematize enforcement. The implementation of ecological remediation responsibilities requires establishing a tiered public-private collaboration mechanism within the *Ecological Environment Code*, clarifying administrative agencies' roles as coordinators, guarantors, and supervisors. Where identifiable responsible parties exist for ecological damage, priority should be given to environmental civil private interest litigation to hold polluters accountable for tort liabilities. For scenarios lacking directly responsible parties, the focus shifts to ecological remediation obligations and compensation liabilities. Given the public law nature of remediation duties, China's remedial hierarchy and judicial design must prioritize administrative efficiency, positioning administrative enforcement as the primary mechanism—a approach mirrored in Section 10 of *Germany's Environmental Damage Act* and the U.S. natural resource damage compensation system.

For example, the US Environmental Protection Agency has resolved negotiations with responsible parties through administrative rather than judicial actions in over 60% of cases (Judy and

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Probst, 2009). Administrative authorities, within statutory mandates, identify liable parties and damage facts through investigations, follow due process including notifications and hearings, and issue administrative orders requiring polluters to fulfill environmental obligations—ranging from ceasing violations to mitigating harms—complementing administrative penalties. Crucially, administrative enforcement should prioritize timely ecological restoration over punitive measures, assisting polluters through guidance, technical support, and funding rather than passive inaction. Ecological damage investigations, assessments, and remediation plans must comply with administrative technical standards and undergo regulatory oversight to ensure accountability and efficacy.

Finally, it is imperative to enhance the coordination between litigation norms in the legal liability chapter of the *Ecological Environment Code* and the *Civil Procedure Law*, *Administrative Procedure Law*, and relevant judicial interpretations. article 97 of the *Soil Pollution Prevention and Control Law* currently establishes referral clauses for environmental public interest litigation. The procuratorial civil public interest litigation, dominated by judicial authority, remains inherently ex-post remedial and supplementary to administrative enforcement, unlike administrative public interest litigation's role in proactive oversight. Administrative public interest litigation should foster constructive interaction between prosecutorial and administrative powers, balancing collaborative governance with proportionality. Concurrently, integrating ecological damage compensation consultations with civil public interest litigation while prioritizing damage compensation claims over public natural resource asset litigation is essential. Moving forward, the legal liability chapter should incorporate a dispute resolution section clarifying functional positioning and initiation hierarchies for environmental litigation types, improving coordination between civil and administrative dispute mechanisms, and harmonizing the *Ecological Environment Code* with procedural laws and forthcoming legislation like the *Procuratorial Public Interest Litigation Law*.

4.2. Practical Pathways for Soil Pollution Legal Liability

4.2.1. Identification of Soil Pollution Liability for Public Entities

The environmental liability of the Xinbei district government can be phased based on the pollution formation process, enabling stage-specific identification of statutory duty violations and corresponding environmental administrative liability in the Changzhou toxic land case.

Prior to the Contamination Incidents

Under articles 7(1) and 8(1) of the *Solid Waste Pollution Prevention and Control Law*, the Xinbei district government of Changzhou bore responsibility for solid waste pollution within its jurisdiction, with environmental authorities mandated to supervise and manage daily operations of the three chemical plants, as further specified in articles 5(1) and 6(1) of the *Soil Pollution Prevention and Control Law*, article 4(2) and articles 9(1) and 9(3) of the *Water Pollution Prevention and Control Law*. However, court findings in the Changzhou toxic land case revealed that the three chemical plants engaged in non-compliant production and waste management practices at their original sites, including illegal dumping of waste liquids during relocation that severely contaminated the soil, directly violating article 19 of the *Soil Pollution Prevention and Control Law*, article 85 of the *Water Pollution Prevention and Control Law*, and articles 5(2) and 20 of the *Solid Waste Pollution Prevention and Control Law*. These violations exposed administrative agencies' failure to fulfill routine supervisory duties, constituting actionable negligence in statutory oversight obligations.

Following the Contamination

The involved land parcel was acquired and physically transferred by the Xinbei land reserve center through negotiated storage in 2009. The *Land Reserve Management Measures* and *Jiangsu Provincial Land Reserve Management Implementation Measures* explicitly mandated regulatory authorities to verify, assess, and remediate land designated for reserve storage under the "reserve entry standards", while article 7 of the *Jiangsu State-Owned Land Reserve Measures* and article 13 of the *Changzhou Municipal Land Reserve*

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Management Measures required land reserve institutions to conduct ownership verification and commission evaluations. However, the Xinbei land reserve center raised no objections during the land transfer process, and the land administration departments, as administrative supervisory authorities, failed to fulfill their oversight duties in accordance with article 3 of both the *Jiangsu State-Owned Land Reserve Measures* and *Changzhou Municipal Land Reserve Management Measures*, unequivocally constituting administrative inaction. Administrative authorities imposed multiple penalties for excessive pollutant discharge, unauthorized operations without environmental approvals, and illegal hazardous waste storage and disposal. However, they neglected violations including the dumping, stockpiling, and abandoning of solid waste during the factories' relocation, as well as post-relocation leakage and residual toxic substances, failing to comprehensively address the plants' administrative liabilities. Measures were restricted to administrative penalties, excluding corrective actions such as rectification orders, remediation deadlines, or production suspension mandates, leaving ecological interests persistently damaged. The administrative authorities' fulfillment of duties and outcomes fell short of legal requirements, constituting incomplete administrative action.

During Pollution Remediation

Under the "polluter-pays principle" of the *Environmental Protection Law*, article 1234 of the *Civil Code*, and articles 94-95 of the *Soil Pollution Prevention and Control Law*, the three chemical plants, as primary responsible parties, should proactively assume soil pollution risk control and remediation obligations. In practice, they failed to conduct required remediation or submit remediation plans and effectiveness evaluations to ecological environment authorities for filing. Administrative agencies should have ordered corrective actions, supervised, and assisted the plants in remediation efforts. Should the plants prove incapable, the government could commission professional agencies to conduct remediation and later recover costs from them. However, authorities bypassed enforcing polluter-initiated remediation, directly implemented emergency measures, and failed to demand reimbursement for ecological restoration, compensation, or investigation, testing, appraisal, and assessment expenses—constituting an unlawful exercise of authority.

4.2.2. Identification of Soil Pollution Liability for Private Entities

The Qualifications of Liable Entities

Potential soil pollution liability subjects in this case primarily involve three chemical companies—the Changzhou municipal government and the Changzhou Xinbei land reservecenter. Under articles 45 to 48 of the *Soil Pollution Prevention and Control Law*, soil polluters bear the obligation to remediate environmental damage and cover costs for soil contamination investigations, assessments, remediation, and post-management. Remediation duties shift sequentially to land use right holders, local government departments, or relevant parties only when liable entities cannot be identified. In this case, although contamination at the site dates back to the 1970s when the three chemical enterprises operated as state-owned entities prior to restructuring, the persistent soil pollution and environmental harm post-restructuring remain indisputable. Therefore, the three chemical enterprises unequivocally qualify as liable entities for soil pollution. Under article 68 of the *Soil Pollution Prevention and Control Law*, the three chemical enterprises, as liable entities for soil pollution, remain responsible for remediation even after their land use rights are reclaimed by the government. Article 10 of the *Contaminated Land Soil Environmental Management Measures* clarifies that land transfer does not automatically transfer remediation liability unless mutually agreed, and the second-instance judgment explicitly states that government land reserves do not constitute statutory grounds for exemption or mitigation of liability. Therefore, the three chemical companies retain non-exempt liability.

Reasons for Exemption of Liability

The Changzhou toxic land case primarily involves polluters' environmental remediation obligations versus governmental environmental governance responsibilities, with the Xinbei land

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reserve center's liability temporarily excluded. The core issue lies in coordinating polluters' remediation duties with governmental governance obligations, which directly determines the allocation and recovery of ecological restoration costs. Polluters' remediation liability originates from the "polluter-pays" principle under article 5 of the *Environmental Protection Law*, the *Judicial Interpretation on Environmental Civil Public Interest Litigation*, and related statutes. Articles 1229 to 1233 of the *Civil Code* address private-interest disputes in environmental torts, while articles 1234 and 1235 establish ecological restoration obligations and compensation for environmental damage, essentially empowering the state to enforce polluters' legal liability through judicial authority to achieve ex post facto redress for public environmental interests.

In the Changzhou toxic land case, the government voluntarily undertook soil remediation obligations originally borne by the three chemical enterprises. Yet article 68 of the *Soil Pollution Prevention and Control Law* lacks provisions enabling the government to seek reimbursement from the original land use right holders, rendering the arrangement where the government foots the bill for corporate pollution legally and logically questionable. The appellees argued during the second instance that the below-market transfer price in the land reserve agreement indirectly reimbursed the government's remediation costs, thereby transferring liability. However, the judgment remains flawed: shifting remediation liability from polluters to the government through administrative agreements to offset public expenditures conflates the distinct legal nature of polluters' obligations and governmental duties.

The Classification of Liability Types

For the environmental legal obligations of Changlong company, Changyu company, and Huada company, distinctions can be drawn between traditional and specialized environmental liabilities based on their normative centrality: the former encompasses environmental civil liability and environmental administrative liability, while the latter refers specifically to soil pollution remediation obligations. Categorized by protected interests, environmental civil liability addresses private environmental interests, whereas environmental administrative liability and soil pollution remediation obligations safeguard public environmental interests. From a private-public law dichotomy, environmental civil tort liability falls under private law, while public law divides into administrative liability for violating environmental regulations and criminal liability for infringing legally protected environmental interests. Normatively, priority should be given to protecting judicial remedies for private parties harmed by pollution. For pollution lacking identifiable victims, the public law nature of soil remediation obligations requires administrative agencies to proactively engage in remediation through enforcement, guidance, and other measures to expedite ecological recovery. Should polluters prove incapable, authorities must assume interim remediation responsibilities and subsequently pursue accountability against the liable parties.

Additionally, the plants must cover losses from lost ecological services during the damage-remediation period, permanent ecological impairment, and related investigation and assessment costs. However, expecting full financial responsibility from the plants is often impractical, as governments frequently assume these burdens in practice. This underscores the urgent need to establish a national ecological restoration fund system and refine hybrid accountability mechanisms for environmental legal liabilities.

5. Conclusions

A review of the judgments in the Changzhou toxic land case reveals dilemmas in the field of soil pollution liability, including inadequate rules regarding the retroactivity of law and statutes of limitations, as well as unclear prioritization of liability between public and private entities. It thoroughly dissects the jurisprudential theories underlying the Changzhou case and proposes conclusions and policy recommendations from both normative and practical perspectives to construct a pathway for realizing legal liability for soil pollution. Leveraging the opportunity of compiling the *Ecological Environment Code*, the codified positioning of soil pollution liability should

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be clarified through three systematic dimensions—the effectiveness system, liability system, and litigation system—thereby promoting coordination between the soil pollution liability sub-chapter and other sub-chapters of the Code. Simultaneously, given the unique nature of soil pollution liability, the principle of non-retroactivity should be optimized and differentiated statute of limitations rules applied, which serve as prerequisites for establishing liability; subsequently, the environmental legal liabilities to be borne by the Xinbei district government and the three chemical factories must be distinguished and substantiated. By reflecting on the normative model versus practical challenges in the Changzhou case, the public-private collaborative mechanism for soil pollution remediation should be refined, with solutions provided across administrative enforcement, supervision and management, and judicial litigation.

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