Research on the Punitive Damages System in Eco-Environmental Procuratorial Public Interest Litigation

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Abstract: As an important judicial safeguard for eco-environmental governance, eco-environmental procuratorial public interest litigation relies on the punitive damages system as a key institutional design to strengthen penalties for environmental torts and prevent environmental harm. Although this system has been preliminarily established in China, its practical application faces dilemmas such as low adoption rates, prominent normative conflicts, and inconsistent discretion standards, which hinder the full realization of its punitive and preventive functions. Following a framework that proceeds from problem identification and theoretical discussion to practical analysis and proposed solutions, this study systematically examines pathways for improving the punitive damages system in eco-environmental procuratorial public interest litigation. Drawing on data from the Supreme People's Procuratorate, typical cases, and comparative law experiences, the analysis covers five dimensions: problem statement, theoretical foundations, practical review, rule reconstruction, and institutional optimization. This research aims to provide theoretical support and practical guidance for resolving practical dilemmas and enhancing institutional efficacy, thereby contributing to the modernization of the eco-environmental governance system and capacity.

Keywords: Ecological Environment; Procuratorial Public Interest Litigation; Punitive Damages; System Reconstruction; Public Interest Protection

1. Insufficient Institutional Efficacy and Practical Dilemmas

1.1 Introduction

Against the backdrop of China's advancing ecological civilization construction, eco-environmental procuratorial public interest litigation has emerged as a core judicial tool for environmental governance. The punitive damages system, as a critical mechanism to deter malicious environmental torts, has been gradually established in legislative and judicial practice in recent years. However, existing research and practice still face prominent gaps: on the one hand, most studies focus on the substantive legitimacy of punitive damages, while insufficient attention is paid to its procedural applicability and operational standards in procuratorial public interest litigation; on the other hand, there is a lack of systematic sorting and targeted rule reconstruction of practical dilemmas such as normative conflicts and inconsistent discretion standards in judicial application.

Existing scholarship has examined the application and calculation of punitive damages in environmental civil public interest litigation [1], the empirical disposition and institutional construction of damages [2], and the restricted application of punitive damages [3]. Other studies have focused on the expansion and control of judicial power in environmental civil public interest litigation [4], dilemmas in legal application and possible solutions [5], the special constitutive requirements for punitive damages in eco-environmental tort cases [6], and broader legislative choices concerning punitive damages [7]. Further research has discussed the functional logic and application rules of punitive damages for eco-environmental damage [8], the use of punitive damages in consumer public interest litigation as a comparable public-interest context [9], and the legitimacy of procuratorial authorities applying punitive damages in environmental civil public interest litigation [10].

This study adopts a research framework integrating theoretical demonstration, empirical review and comparative analysis. It draws on official data from the Supreme People's Procuratorate, typical judicial cases and comparative law experience such as the US CERCLA system, and systematically discusses

the optimization path of the punitive damages system from five dimensions: practical dilemmas, theoretical foundations, practical review, rule reconstruction and institutional support. The research not only helps to clarify the jurisprudential basis and functional positioning of the system, but also provides operable rule schemes for resolving application differences and unifying judicial standards, so as to provide theoretical support and practical reference for improving the efficacy of environmental public interest litigation and promoting the modernization of ecological environmental governance.

1.2 Governance Challenges in Addressing Eco-Environmental Damage

Damage to the eco-environment is concealed, latent and irreversible, placing high governance demands. The system of punitive damages is inherently slow and this does not seem to be addressing the current complex situation of environmental governance. In 2023, the Supreme People's Procuratorate released statistics indicating over 20,000 public interest litigation cases on ecological and environmental protection were handled by procuratorial bodies across the country in 2022. These cases involved air pollution, water pollution, soil pollution, and solid waste pollution, and they did help to advance the resolution of many ecological and environmental problems (Supreme People's Procuratorate [SPP], 2023) [11]. However, the use rate of punitive damages under these cases is still low. The hallmark of most cases remains to be the compensatory damages, which do little to offer institutional deterrence. Hence, some businesses see the liability to break laws as little and the liability to comply as great, and worth the effort is the discharge of pollutants and devastating development.

This is further illustrated by comparison of typical cases. The Changyi Chemical Enterprise Case in Shandong resulted in the illegal production and sale of low-quality fuel oil for a long time, including 800,000 tons in 2018 only (Weifang Intermediate People's Court, 2019) [12]. Its sulfur exceeded the standards by up to 985 times, causing serious pollution to the surrounding eco-environment. That enterprise also made up false materials to evade inspection of the environment. The procuratorial authorities have brought a public interest lawsuit and sought punitive damages. This eventually cost the enterprise RMB 30 million to restore the eco-environment and made up well for causing ecological damage, which strongly dissuaded other chemical enterprises in the local area. However, the Guizhou Heavy Metal Pollution Case during the same time was a case of a high level of heavy metal pollution of soil over a large area set apart by its two companies that did not hold heavy metal disposal business licenses (Guizhou Zunyi Intermediate People's Court, 2016) [13]. Disagreements surrounding the amounts to be counted as "losses of interim service functions" in the compensation base resulted in the case's remand for retrial despite the procuratorial authorities arguing for punishment. This not only prolonged the delay in the restoration of the eco-environment but also revealed the disparities in the application of punitive damages.

1.3 Institutional Coordination and Normative Conflicts

In addition to the low application rate, the punitive damages system also faces prominent normative conflicts in practice, mainly including the coordination problem between public law liability and punitive damages, as well as the legislative differences between national and local levels. These conflicts have led to disunity in the application of the system, affected the equal application of law, and restricted the full play of the punitive and preventive functions of the system. The specific manifestations and in-depth analysis of relevant normative conflicts will be elaborated in the section of rule application review.

2. Jurisprudential Legitimacy and Functional Positioning

In the context of the Procuratorial Public Interest Litigation for eco-environmental damages, the creation of this type of punitive damages is not simply an addition of legal responsibilities; it is based on a solid jurisprudential basis with a clear functional orientation. From two angles, the constitutional angle as well as the institutional characteristics of procuratorial public interest litigation, its legitimacy and necessity can be justified.

2.1 Justification of Legitimacy from the Constitutional Dimension

Constitutionally, the founding of a punitive damages system is consistent with the spirit of

the Constitution. Its legitimacy rests in the constitutional curtailment of fundamental rights (as well as filling in gaps in public law enforcement). From a different perspective, punitive damages safeguard ecological public interests and limit the "general freedom of action" of enterprises based on the principle of proportionality under Article 51 of the Constitution. While enterprises have constitutional freedoms in operation, their operation cannot affect the country or the public interest or the legitimate rights and interests of other people. Combining the theory of punishment with compensatory functions, the limitation of enterprises' operational freedom due to maliciously committing environmental torts can compensate for the ecological damage and provide effective deterrence. Such interferences are proportionate to the gravity of the unlawful behavior and the effects it produces, respecting the concept of proportionality, as demanded by the Constitution.

Conversely, the punitive compensation system could compensate for deficiencies in the eco-environmental governance provided by public law enforcement because there is a delay in realizing the penalties by public law. Eco-environmental damage is highly complex, requiring evidence gathering; it is often hidden and has large cross-regional effects. Executive agency law enforcement capacity is often severely limited in terms of agents, materials, and equipment, which means that there is often a delay in the detection and enforcement of environmental offenses. This means that there are environmental violators that slip past administrative-legal control and responsibility. As a remedy through the court system, with prosecutors representing the public interest, the punitive compensation system fills in the deficiencies in administrative enforcement and metes out harsh punishments for environmental misdeeds. In the Exxon Valdez oil spill case in the United States, courts imposed significant punitive damages that made the business liable to undertake ecological restoration obligations and thus highlighted the importance of the system in strengthening environmental governance.

2.2 Institutional Attributes of Procuratorial Public Interest Litigation

Considering the dual nature of public interest litigation and the particular nature of the eco-environmental damage, the implementation and justification of the system of punitive compensation become necessary. In public interest litigation an ecological case involves a "legal supervisor," with the public prosecutor playing the role of "representative of the public interest." The two roles in this situation make it necessary to improve punishment for environmental torts and procedural safeguards to minimize the potential for misuse of power in the punitive compensation regime. These procedures should act as fine-tuned ways of controlling the conduct of prosecutors with a balance of assurance of discharge and the duty to pursue guilty pleas and force cases to trial, either by setting up internal approval mechanisms or by creating external hearing procedures.

Eco-environmental procuratorial public interest litigation has unique characteristics compared to private interest litigation. These involve breaking away from the typical tort tradition concept of having a "direct interest" in order to set up the standing of procuratorial authorities as eligible plaintiffs. Eco-environmental damage has uncertainty about the number of victimized people and is indivisible; thus, it violates the public interests of a certain number of people in general. This is because if the original concept "direct interest" were strictly adhered to, no one could intervene in the name of the public interest, and damage to the eco-environment would not be amenable to remedy. Procuratorial bodies, as the state body that ensures legal supervision, have to protect the interests of the public above all on behalf of the state. Hence, the role played by their initiation of public interest litigation is that of safeguarding public interests, which does not require their participation to have an interest in the controversy. According to the various amendments made to the Civil Procedure Law and the Administrative Procedure Law in 2017, the procuratorial organs now explicitly have the authority to start environmental civil public interest litigation. This legitimized the procuratorial public interest litigation, which designates procuratorial organs as qualified plaintiffs in the name of the public, in claiming punitive damages and, in principle, established the difference between any litigation of public interest and private interest litigation.

3. Absence of Rules and Divergence in Application

Based on the study of judges' practice, the main

problems in the realization of eco-environmental procuratorial public interest litigation are a lack of specific provisions and the application of different standards. Such issues primarily occur at the level of conflict between legal principles as well as inequities in judicial discretion, greatly hampering the effectiveness of the system.

3.1 Conflicts Among Legal Norms

At present, there are prominent normative conflicts in China's eco-environmental public interest litigation punitive damages mechanism, which are mainly reflected in two aspects: the coordination of public and private law liabilities, and the divergence between national and local legislation.

In terms of public and private law liabilities, the combination of administrative penalties and punitive damages often leads to the problem of double punishment. In practice, enterprises that have been fined by administrative authorities may still face procuratorial public interest litigation claiming punitive damages, which frequently leads to a lack of proportionality in liability bearing and raises questions about the fairness of the system.

In terms of national and local legislative differences, some regions have formulated local regulations to support the punitive damages system, but these local provisions are separated from national legal norms, resulting in different judgments in similar cases. Local regulations in Inner Mongolia, Guizhou and other regions have clearly stipulated that procuratorial organs have the independent right to claim punitive damages in ecological and environmental public interest litigation. In Guizhou Province, procuratorial public interest litigation has covered a total of 65 civil cases involving punitive compensation for ecological and environmental damage, with the compensation amount exceeding RMB 2 million, all of which have been supported by the courts (Yan & Dai, n.d.) [14]. However, at the national level, only Article 1232 of the Civil Code of the People's Republic of China stipulates the applicable conditions of punitive damages for environmental torts, but does not provide a procedural basis for procuratorial organs to claim punitive damages in public interest litigation. The judicial interpretation issued by the Supreme People's Court stipulates that such cases shall be handled with reference to private interest litigation rules, but the lack of detailed operational guidelines has led to differences in the recognition of procuratorial standing and compensation standards among courts, seriously affecting the uniformity and authority of the law.

On top of the above macro-level normative conflicts, most of the discord among legal standards occurs with regard to standing and confusion about the source of damages, which have led to little unbiased information on how to use punitive damages. As to standing, Article 1232 of the Civil Code provides for the conditions of punitive damages in environmental torts but does not expressly rule on whether public interest environmental litigants prosecuted by procuratorial authorities have independent standing to seek punitive damages. According to relevant provisions of the Supreme People's Court's Interpretation of Several Questions on Applying Law to the Handling of Cases of Public Interest Litigation Instituted by the Procuratorial Organ, Article 12 of the aforesaid Interpretation stipulates that relevant provisions of law for the handling of private interest litigation cases apply mutatis mutandis. This has resulted in two different appellate decisions. However, some courts believe that the public interest can be represented by procuratorial authorities, and they can, therefore, obtain punitive damages by a process of reference from the private interest litigation. Others hold that since the Civil Code expressly does not allow for such claims, procuratorial authorities are not in a position to bring them, and so they are thrown out. The nature of this conflict is tacit and likely to disrupt the continuity of the rules and status quo and has led to a lack of consistency in their application.

Concerning the compensation base, in cases of punitive damages, damages are based on the actual damage. However, the system of current legal norms is deficient in defining the scope or criteria of determining actual damage and hence may lead to frequent disputes. In the Jiangsu Illegal Wastewater Discharge Case (Wuhan Zhuohang Jianghai Trading Co., Ltd.'s stealth discharge of oily wastewater), the company discharged untreated sewage from bilge water multiple times into the Yangtze River and the coastal waters, which infringed on the eco-environment (Nanjing Xuanwu District People's Court, 2020) [15]. The base for compensation should be the value of the losses incurred and costs of restoration, according to prosecutors. However, the court argued that

there were no objective restrictions on sampling and testing of actual damages resulting from the wastewater being leaked secretly; therefore, the only way of calculating the costs for the restoration was by applying the virtual governance cost method, whereas claims for interim damages were not backed. The type of compensation base was also a point of contention between the parties and extended the arbitral process. Judicial views on permanent damage also differ. Some jurisdictions use ecological damages that are irreparable as part of the base for the compensation; others do not include it in the base since it is challenging to value. This difference continues to add to the uncertainty of establishing a compensation base.

3.2 Imbalance in Judicial Discretion

Judicial discretion is also seen as another significant issue in the application of the punitive damages system, primarily manifested as inconsistency and disparity in multipliers and regions, which would make the equal application of law impossible and lack fairness. Although relevant judicial interpretations have set a reference range for punitive damages multipliers, there are still obvious differences in the grasp of discretion standards in judicial practice.

For example, in the civil public interest litigation case of ecological environment damage filed by Zhuhai Municipal People's Procuratorate of Guangdong Province against Liang Moumou and seven other defendants (Guiding Case No. 256 of the Supreme People's Procuratorate, Case No.: (2021) Yue 04 Min Chu No. 11) [16], the Zhuhai Intermediate People's Court made a judgment on November 9, 2022. The eight defendants illegally dumped construction waste and silt on the mountain for a long time, causing vegetation damage, soil pollution and permanent damage to part of the ecological environment. The court determined that the loss of ecological service functions during the period from damage occurrence to restoration completion was about RMB 27.04 million as the calculation base of punitive damages based on the judicial appraisal report. Considering the subjective fault of the defendants, the severity of the damage consequences and the situation of bearing the restoration responsibility, the court applied a multiplier of 2 times and finally sentenced the defendants to bear punitive damages of RMB 54.08 million in total. This case, as a nationally issued guiding case, clarifies the standard application of punitive damages in procuratorial public interest litigation, but it also reflects that in the absence of unified detailed rules, the determination of the base and multiplier of punitive damages still depends on the discretion of the court to a large extent.

For regional differences in standards, there is a lack of uniformity as to when courts will apply punitive damages and how courts are using their discretion. This has yielded a strong impression of a difference between decisions on similar cases. A more flexible criterion is adopted to define gross negligence in the Yangtze River Delta region because it has more advanced economic conditions and more powerful eco-environmental governance. As in the Zhejiang Electroplating Factory Case, where management was lenient, the electroplating wastewater seepage led to slight soil pollution. This was deemed by the court to be a case of gross negligence, and a punitive damages multiplier of 1.2 was applied. In contrast, the ecologically sensitive Northwest Region has a much higher cost of an environmental tort and a heightened standard for gross negligence. In the Shaanxi Mining Enterprise Case, the company lacked the necessary environmental permits and allowed mineral mining without permission to destroy a plantation of plants. This was deemed to be gross negligence, and the court awarded a punitive damages multiplier of 2. These regional differences reduce legal uniformity, expose enterprises to risk from varying laws, and lead to failure to develop a fair market environment.

4. Scope of Application and Calculation Standards

The fundamental way to solve the practical dilemmas of the system of punitive damages in eco-environmental procuratorial public interest litigation is to reconstruct the rules, explain the standard of applying and calculating the damages, and then make sure the same standard is followed in application. Based on the comparative law, such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of the USA, and China's judicial practice, rule reconstruction should pay attention to the narrowing of the conditions applicable to the rule and the establishment of a model for calculating compensation.

4.1 Narrowing the Conditions for Application

The applicable conditions and applicability range of punitive damages should be restricted, since by giving excessive punitive damages in the hands of injured parties, the power to prevent the unacceptable conduct from happening becomes redundant. As regards subjective fault, a difference between intent and gross negligence must be made. The differences in levels of punitive damages should match those found in the standards under the U.S. CERCLA. Full punitive damages should be available in cases of intentional environmental torts that are difficult to deter, like the malicious discharge of environmental contaminants, manipulation of environmental monitoring data, and false materials to be supervised. In a recent case, the Shandong Changyi Petrochemical Company has been found liable for the use of malicious methods to produce low-quality diesel fuel and for obstructing environmental inspections, so full punitive damages can be applied to the case. Where there has been gross negligence such as a lack of the basic environmental management duties that causes an environmental tort, the multiplier should be proportionately reduced to achieve a balance between deterrence and sustainable business so as to avoid excessive punishment.

As for conduct, the boundaries should be explicitly drawn between high-frequency and risky environmental torts on the one hand and general environmental violations on the other hand. Judicial practice indicates that punitive damages should be awarded for five types of high-risk conduct: illegal disposal or dumping of hazardous substances; ecological damage as a result of illegal stripping of peat or mineral resources; intentional or malicious discharge of toxic and harmful pollutants; falsification, manipulation of, or failure to display data showing environmental state for state supervision; and repeated tortious actions after the refusal to correct violations (after carrying out administrative penalties). Minor violations, e.g., exceedances of emission standards or failure to complete environmental filing procedures in due time, should not be sanctioned with punitive damages. Rather, only compensatory damages must be awarded to provide "precise deterrence."

4.2 Calculation Model for Damages

Effective operation of the economic damages calculation system is integral to the functioning of the punitive compensation system. The base amount and the multiplier should be set by a dynamic calculation model in order to enhance standards and limit over-generous judicial discretion. The priority of restoration should be upheld in determining the base amount. Timely remediation of the eco-environmental damage should be taken care of with a comprehensive approach. Restoration costs encompass costs for pollution control, ecological restoration, and vegetation recovery. In cases of irreparable damages like the permanent soil pollution and extinction of rare species, the virtual governance cost method is to be applied, and reasonable coefficients are to be used in relation to the type of damage, its magnitude, and the sensitivity of the environment. Multipliers should be adjustable dynamically depending on the nature of the tortfeasor, its subjective fault, the severity of the damage, and its willingness to correct violations. This mechanism should set baseline multipliers and adjustment factors for each tortfeasor so that punishment is commensurate and the deterrent and preventive tasks are adequately fulfilled.

5. Legislative Coordination and Supporting Mechanisms

5.1 At the Legislative Level

The institutional solution to problems of conflict and the uneven application of legislation is further down the road of optimization. Current ambiguities and conflicts in the law should be eliminated by introducing a special law on punitive compensation in the field of eco-environment, which should explicitly address the unique competence of the procuratorial authorities to bring about eco-environmental public interest litigation, the conditions for its application, the standards for calculating it, rules of burden of proof, and rules for enforcing it. An express provision in the law should be included that allows the procuratorial authorities, by virtue of their role representing the public interest, to pursue punitive damages without being channelled through private interest litigation provisions. It must also clarify the terms of the compensation floor and criteria to identify permanent harm and interregional jurisdiction to minimize disparity in decisions made in similar cases.

Second, public and private law liabilities should be resolved by setoff legislation to address the

issue of double punishment. Specifically, fines imposed by agencies in the executive branch under provisions of the environment law, as actions for environmental torts, can offset the amount of punitive damages in terms of a ratio not exceeding 50% of the amount of the fine. In other words, if it is punished with an administrative fine of two million yuan, one million yuan will be deducted from the punitive damages to be paid by the enterprise, and the remaining amount will be paid. This will prevent double punishment and maintain sufficient deterrence. At the same time, the coordination of the procedure of the imposition of administrative punishment and awarding of punitive damages should be made clearer. The executive branch agency, after invoking the flow of administrative fines, should as soon as possible refer the case leads to the procuratorial authorities to put the public interest litigation in motion in view of the law; in this way, the efficient linkage of the public liability and private liability of the violator is realized.

5.2 Judicial Level

Enhancing supporting mechanisms at the judicial level is crucial to ensuring the effective implementation of the punitive damages system. Firstly, a mechanism of "three trials in one" should be set up. Based on the actual experience of the Guizhou Environmental Protection Court, environmental public interest litigation should be integrated with criminal and administrative litigation and pursue integration to achieve efficient case adjudication. This enables all proceedings to take place at the same time and prevents parallel proceedings in the same case; it also saves institutional resources. In addition, it is designed to ensure the consistency of criminal sanctions, administrative sanctions, and compensatory damages and thus improve the efficacy of eco-environmental governance. As an illustration, in the pollution case of Wuhan Zhuohang Jianghai Trading Co., Ltd., criminal liability and administrative fines, as well as civil public interest litigations, may be heard on a consolidated basis so that all the related issues of criminal and civil liabilities can be heard in one case.

Secondly, a new outside assessment system should be employed to eliminate the burden of proof for the procuratorial authorities. The process of analyzing environmental damage and providing an assessment is highly technical and professional, and the procuratorial authorities have, in many places, inadequate professional technical support to fulfill their evidentiary burdens. In pursuing punitive damages, the authorities in charge of public prosecution should explicitly agree to commission third-party institutions, including the Chinese Research Academy of Environmental Sciences and professional judicial appraisal agencies, to prepare an ecological environmental damage appraisal and an eco-environmental compensation amount appraisal. It is considered that these reports will be important in determining the consequences of the damage and calculation of compensation. At the same time, a mechanism of accreditation and supervision for the third-party evaluation agencies should be set up so as to guarantee the authenticity and objectivity of evaluation reports. In the case of Xiangsheng Company in Tongren, Guizhou, the damage assessment report rendered by an independent assessment agency effectively mitigated the burden of proof of the procuratorial authorities regarding the amount of compensation. Moreover, a mechanism for the guarantee of appraisal cost should be put in place, such as by making the appraisal fees a part of the special funds for public interest litigation, so as to avoid financial difficulties in conducting appraisals.

6. Conclusion and Outlook

The punitive damages system within eco-environmental procuratorial public interest litigation is an important institutional design to enforce sanctions on eco-environmental torts, prevent the occurrence of environmental torts, and protect the public interest. It has a solid jurisprudential foundation and has an irreplaceable role in eco-environmental governance. In practice, however, this system has encountered problems such as a low level of application, obvious normative conflicts and imbalanced judicial discretion. The main challenges are related to the lack of clear rules and inadequate supporting mechanisms. The rules can be reconstructed to clarify the scope of application and the standards for calculation, so that precise sanctions can be achieved. Meanwhile, legislative coordination and support can solve normative conflicts and improve the efficiency of application. These measures will allow the punitive damages system to play its full punitive and preventive roles and help

modernize the eco-environmental governance system and capacity.

In the future, the improvement of the punitive compensation mechanism in the field of eco-environmental public interest litigation should be constantly explored and innovated according to the new situation and requirements of eco-environmental governance. On the other hand, it is necessary to consider the possibility of linking punitive compensation with carbon sink trading, using part of the punitive compensation funds to establish carbon sink indices, and using these indices for eco-environmental restoration and carbon emission reduction as a means to facilitate the synergy of ecological protection and low-carbon development. However, there should be a unified eco-environmental damage compensation fund at the national level, and the punitive compensation fund should be managed separately for specific purposes such as eco-environmental restoration, appraisal and assessment, public interest litigation, etc. for the efficient utilization of funds. At the same time, based on the characteristics of cross-regional environmental torts, it is necessary to establish a cooperative mechanism for punitive compensation in environmental public interest litigation, which can effectively solve the governance problems of environmental public interest litigation involving cross-regional subjects. It is hoped that the punitive damages system in eco-environmental procuratorial public interest litigation will become more developed and mature and offer better judicial protection for ecological environmental protection in China in the future.

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