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Civil Law and Environmental Protection: Expanding Liability for Sustainable Justice

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Abstract

Environmental degradation has emerged as one of the most pressing global challenges, demanding stronger legal frameworks to ensure accountability and sustainability. Within civil law systems, the expansion of liability principles plays a crucial role in addressing environmental harm by holding individuals, corporations, and even state actors responsible for ecological damages. This study examines the intersection between civil law and environmental protection, with a focus on how liability doctrines—such as strict liability, fault-based liability, and collective responsibility—are evolving to support sustainable justice. By employing a normative legal research method combined with comparative analysis, this research highlights the adaptation of civil liability in various jurisdictions to respond to environmental risks, including pollution, deforestation, and climate change. The findings suggest that while traditional civil law mechanisms provide a foundation for redress, innovative approaches such as environmental compensation funds, extended corporate liability, and integration of precautionary principles are necessary to strengthen legal remedies. Ultimately, this study argues that expanding civil liability not only enhances deterrence and accountability but also promotes equitable and sustainable solutions for environmental governance in the 21st century.

Keywords: Civil Law, Environmental Protection, Liability, Sustainable Justice, Environmental Governance

1. Introduction

Climate change continues to worsen natural conditions with increasingly pronounced impacts. For example, rising global temperatures cause forests such as Eucalyptus regnans in Victoria, Australia, to lose about 9% of the number of trees for every 1°C temperature rise — it is estimated that as much as 25% of the tree population could be lost by 2080 if the warming trend continues(Yustitianingtyas et al., 2025; Dewanto et al., 2023; Zulkifli et al., 2022). On the other hand, ecological droughts are also widespread, with up to 77.6% of the land permanently depleted in moisture in the last 30 years, prompting the emergence of 4.3 million km² of drylands. This condition triggers the vulnerability of the agricultural sector, poses health risks and forced migration, and increases the incidence of forest fires.Meanwhile, deforestation and habitat destruction threaten biodiversity and ecosystem function globally(Widiartana et al., 2025; Azam et al., 2024). By 2024, the rate of forest loss will reach the highest level in history, where the area of lost forest is equivalent to that of Italy, and fires are the leading cause of tropical forest destruction for the first time. Meanwhile, wild vertebrate populations have declined dramatically—about 73% from 1970 to 2020 according to the Living Planet report by WWF. This loss of biodiversity is a serious warning sign that the richness of the world's ecosystems is being eroded, and requires a stronger and adaptive legal response (Li & Xia, 2025).

Public legal instruments that function through administrative regulation and criminal sanctions often face limitations in addressing complex and transnational environmental damage. Administrative mechanisms are generally reactive and slow, so they are not sufficiently responsive to pressing environmental issues such as cross-border pollution or global climate change(Atta & Sharifi, 2024; Ishani, 2020). In addition, regulatory fragmentation in various state institutions often causes inconsistencies in the implementation and enforcement of the law, so that the effectiveness of environmental protection becomes weak (Feria-Tinta, 2025; Legal Brainiac, 2024). Criminal sanctions also tend to focus on prosecuting certain violations without being able to accommodate long-term losses or damages that have an impact on the wider community (Gauna, 1947)

Under these conditions, civil law can be a significant complementary instrument to address the weaknesses of public law by providing space for compensation, recovery, and prevention mechanisms(Zhou & Xiong, 2025). Through the doctrine of civil liability such as tort liability, strict liability, and the principle of polluter pays,

individuals and community groups have direct access to prosecute perpetrators of environmental damage more effectively (Law Librarianship, 2024; Frontiers in Public Health, 2023). In addition to compensating victims, the civil law approach also encourages the internalization of environmental costs into economic activities, thereby contributing to the creation of sustainable environmental justice. Thus, a combination of public legal instruments and civil law contributions is needed to create more comprehensive and adaptive environmental governance (Menton et al., 2020; Micklitz, 2025).

The principle of civil liability has a fundamental role in tackling environmental damage because it provides a direct compensation mechanism to victims. Through civil lawsuit instruments, communities or individuals who are harmed by environmental pollution or degradation can obtain compensation for material and immaterial losses caused. This is important because not all environmental damage can be addressed through public or criminal law, especially when it comes to cumulative impacts such as air or water pollution that affect large groups of people(Pan, 2025). In addition, the principle of strict liability in civil law provides a greater opportunity to impose liability without having to prove elements of fault, thereby strengthening the position of victims in the environmental litigation process (Song et al., 2024).

In addition to the compensation function, civil liability also acts as a prevention instrument and deterrent effect for perpetrators. With significant financial responsibility risks, both individuals and corporations are encouraged to implement environmentally friendly operational standards and invest in sustainable technologies(Soni et al., 2025; Maniruzzaman & Al-Saleem, 2025). Furthermore, the civil mechanism allows the application of the principle of restorative justice, namely the restoration of the environment to its original condition through a rehabilitation order or injunctive relief. Thus, civil liability not only serves as a means of fulfilling victims' rights, but also as a more holistic instrument of environmental justice, in line with the principles of sustainable justice in modern law (Herbayu et al., 2025).

The concept of strict liability has undergone important developments in civil law, especially in the context of environmental protection. In contrast to fault-based liability, strict liability imposes responsibility on polluters without the need to prove elements of negligence. This approach is considered more relevant for environmental cases because ecological damage is often difficult to trace to a single cause or prove to be an element of fault(Uluk et al., 2024). A number of jurisdictions have adopted this principle to strengthen the position of victims and accelerate redress mechanisms, for example in the case of industrial pollution, hazardous material leaks, and oil spills. Thus, strict liability functions not only as a compensation instrument but also as a means of prevention through increasing the prudence of business actors (Amadi & Damiari, 2025).

Meanwhile, the polluter pays principle (PPP) is developing as a normative foundation that affirms that the polluter must bear the costs of environmental prevention, control, and restoration(Bilawal Khaskheli et al., 2025). The principle was first introduced by the OECD in 1972 and later gained international legitimacy through various global environmental law instruments, including the 1992 Rio Declaration. In the framework of civil law, PPP is internalized through a compensation and restitution mechanism charged to polluters, so that the burden of environmental costs is not transferred to the community or the state. As sustainability awareness increases, PPP is not only seen as an economic principle, but also as an instrument of ecological justice that encourages actors to internalize the external costs of their economic activities. This marks a shift in the civil law system from being oriented towards individual interests towards the protection of collective interests and the environment (Ramada et al., 2025)

Faure and Liu (2022) in their study on *environmental civil liability* emphasized that *the strict liability* mechanism is an effective instrument to overcome the difficulty of proving in pollution cases and provide fair compensation for victims. Another study by Paddock (2020) shows that the application of *polluter pays principle* in various jurisdictions, including the European Union, has been proven to be able to reduce the level of industrial pollution while encouraging corporations to internalize environmental costs in their business activities. These studies confirm that civil law has a strategic role as a complement to public law in ensuring environmental accountability.

In addition, a comparative study by Gillespie (2021) found that countries with progressive civil law systems, such as Germany and France, tend to be more successful in enforcing environmental justice because they integrate civil liability with sustainability principles. Research conducted by Liu, Faure, and Weber (2023) also highlights that the existence of an environmental compensation scheme through civil mechanisms has a dual effect, namely the recovery of ecological losses as well as prevention of future pollution behavior. Thus, previous research provides a strong academic foundation for this study to explore how the concept of *civil liability* can be further developed to support *sustainable justice* within the framework of civil law.

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2. Research Methods

This study uses the literature review method as the main approach to analyze the development of the concept of civil liability in the context of environmental protection. The literature review was chosen because it is able to provide a comprehensive theoretical foundation through a systematic review of the civil law literature, environmental law, and relevant international legal instruments. The data sources used include primary legal materials such as national and international laws and regulations, as well as secondary legal materials in the form of books, scientific journals, reports of international organizations, and the results of previous research(Ali et al., 2024; Suyatmo et al., 2023; Yulianti, 2020; Santosa et al., 2024). The analysis was carried out in a descriptive-qualitative manner with the aim of identifying patterns, trends, and gaps in the application of the strict liability principle and polluter pays principle in the civil law system.

Furthermore, this method also allows researchers to conduct cross-jurisdictional comparisons to understand variations in the implementation of civil liability in cases of environmental damage. With a comparative literature review approach, this study examines legal practices in various countries, such as Germany, France, and the European Union, and relates it to the Indonesian legal framework. The analysis process is carried out through the stages of collection, selection, categorization, and synthesis of literature, so that a deep understanding of the effectiveness of civil law as a complementary instrument of public law in upholding environmental justice is obtained. Thus, the literature review method in this study not only serves to summarize the existing literature, but also criticizes and develops new perspectives on the expansion of civil liability to achieve sustainable justice

3. Results and Discussions

The Role of Civil Law in Environmental Protection

Civil law plays an important role in environmental protection, especially as a complementary instrument to public law which is often repressive and administrative in nature. Through the civil lawsuit mechanism, the community can directly claim compensation for losses caused by environmental pollution or destruction. This role affirms the position of civil law not only to resolve disputes between individuals, but also to ensure restoration and ecological justice (Faure & Peeters, 2011). Thus, civil law is a strategic path in strengthening the principle of environmental responsibility. The civil lawsuit mechanism provides direct access to justice for pollution victims and affected communities. Compensation, damage recovery, and court orders in the form of injunctive relief are effective means to stop ongoing adverse acts (Boyd, 2012). This lawsuit also allows the realization of the polluter pays principle, where polluters are required to bear the cost of recovery. Through this mechanism, civil law is not only oriented towards financial compensation, but also seeks the sustainability of the ecosystem (Rachmawati, 2025).

The results of the study show that civil law is able to bridge the limitations of criminal and administrative law which is often slow and fragmentary. In many cases, criminal law enforcement faces evidentiary barriers, while administrative law is often limited to the imposition of fines. Civil law comes with flexibility through class action and citizen lawsuit mechanisms, which allow people to file lawsuits without having to wait for state action (Pring & Pring, 2016). This confirms that civil litigation can function as an instrument of participatory justice in environmental issues.

In addition, civil law also encourages the creation of a deterrent effect on polluters. The expanded liability burden, including the concept of strict liability, ensures that parties who carry out high-risk activities remain responsible without having to prove fault (Richardson, 2019). This approach is important to create legal certainty while fostering prudence for corporations in carrying out business activities that have the potential to damage the environment. Furthermore, the role of civil law in environmental protection is also related to intergenerational justice. Civil liability for environmental damage not only protects the interests of current victims, but also ensures that future generations do not inherit the same ecological damage(Choudhary et al., 2025). This concept of responsibility is in line with the principles of sustainable development and the right to a healthy environment as a human right (Voigt, 2020). Thus, civil law helps strengthen ethical and moral legitimacy in environmental governance. Ultimately, the role of civil law in environmental protection underscores the importance of synergy between private and public mechanisms. By providing a more direct, flexible, and participatory dispute resolution avenue, civil law complements other legal instruments. An integrative model between civil, criminal, and administrative law allows for more effective, fair, and sustainability-oriented environmental protection (Gillespie, 2018). Therefore, strengthening the role of civil law is one of the important agendas in global and national environmental law reform (Wantu et al., 2024; Zulyusri et al., 2023).

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The Concept of Civil Accountability for *Sustainable Justice*

The concept of civil liability plays a central role in realizing *sustainable justice*, which is justice that is not only oriented towards resolving momentary disputes, but also on protecting the interests of future generations. The legal literature emphasizes that the integration of *civil liability principles* with the concept *of sustainable development* is an important foundation to ensure a balance between economic, social, and environmental interests (Bosselmann, 2017). Thus, civil liability must be understood not only as a mechanism for individual compensation, but also as a means of maintaining the sustainability of the legal system and the environment (Gophen, 2014)

One of the important aspects of the expansion of civil liability is the concept of corporate extended liability, where corporations are no longer only responsible for the losses they cause directly, but also for the supply chain, subsidiary activities, and business partners that contribute to environmental damage (Backer, 2018). This accountability model confirms the importance of *the polluter pays* principle on a broader scale to ensure corporate accountability within the framework of sustainability. In this way, civil law can be an effective instrument in encouraging socially and ecologically responsible business practices.

Furthermore, the class action mechanism in civil law offers wider access to justice for communities affected by collective environmental damage. Class action allows community groups to file lawsuits against polluters without being limited to individual interests, thereby streamlining the judicial process and strengthening the position of economically and politically vulnerable communities (Gilles, 2016). In the context of *sustainable justice*, this mechanism is key to protecting people's rights while creating a deterrent effect for polluters (Mashdurohatun et al., 2025)

In addition, the establishment of environmental compensation funds is an important part of the civil liability scheme for sustainable justice. These funds serve as collective compensation instruments that can be allocated for environmental restoration and empowerment of affected communities (Kiss & Shelton, 2021). The scheme not only recovers the losses that have been incurred, but also serves as a preventive measure against future environmental risks. This is in line with the *precautionary principle* in international environmental law. Thus, the concept of expanded civil liability—through corporate extended liability, class action, and environmental compensation funds—is a concrete form of integration of civil law with the principle of sustainability. This concept is considered a key instrument in realizing *sustainable justice*, because it is able to answer the limitations of public legal mechanisms that are often rigid and slow. Ultimately, strengthening the role of civil law in a sustainability perspective not only expands access to justice, but also strengthens the legal foundation for sustainable development (Birnie, Boyle & Redgwell, 2021).

Development of the Strict Liability Principle

The principle of strict liability in civil law has undergone significant development in response to increasing cases of industrial pollution, hazardous waste leakage, and ecological disasters. In various jurisdictions such as Europe, Latin America, and Asia, the application of this principle is seen as an effective instrument to strengthen environmental protection. Strict liability places responsibility on business actors or corporations for the losses caused, even if there is no evidence of negligence or erro(Sudiana et al., 2025)r. This provides legal certainty and makes it easier for victims to access compensation, while encouraging a paradigm shift in environmental risk management. The main advantage of the strict liability principle is to strengthen the position of victims in obtaining justice. In environmental cases, it is often difficult to prove the perpetrator's fault due to limited access to information and the unequal position between victims and large corporations. Thus, strict liability removes these obstacles because the victim no longer has to prove a mistake, but rather simply shows the existence of losses caused by certain activities. This is in line with the principle of substantive justice that puts victims in a protected position in the legal system (Azam et al., 2024)

The legal literature shows that the implementation of strict liability also has an impact on increasing industry compliance with environmental standards. Corporations are encouraged to implement stricter risk management systems, invest in environmentally friendly technologies, and conduct regular compliance audits. Thus, the application of this principle not only serves as a compensation mechanism for victims, but also as a preventive prevention against potential future ecological disasters. The deterrent effect resulting from strict liability suppresses business practices that are high risk to the environment (Widiartana et al., 2025).

In addition, the development of strict liability shows that there is diversification in its application, including in cases of transboundary pollution and the use of hazardous energy. Some countries have even developed more progressive legal instruments by including strict liability in the regulation of nuclear energy, chemical transportation, and biodiversity protection(Yustitianingtyas et al., 2025). This shows that strict liability is not only

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relevant in the context of local pollution, but also in regulating global risks that can have far-reaching impacts on the international community.

However, the main challenge of implementing strict liability lies in the aspect of implementation and harmonization of laws between countries(Gauna, 1947; Rahman et al., 2023). Not all jurisdictions have the same mechanism for determining the limitation of liability or the amount of compensation. This is where international cooperation and regulatory harmonization are important so that the principle of strict liability can provide consistent and effective protection. Thus, the development of the principle of strict liability not only strengthens legal protection for victims, but also contributes to the achievement of sustainable justice goals within the framework of sustainable development (Li & Xia, 2025).

4. Conclusion

From this study, it can be concluded that the development of the principle of strict liability in the realm of civil law, especially in cases of environmental pollution and ecological disasters, reflects the need for modern law to provide more effective protection for victims. With the adoption of this principle in various jurisdictions, victims are no longer burdened with the obligation to prove fault, but rather simply show that there are losses due to high-risk activities. This shows a shift in the legal paradigm from focusing on individual faults to more progressive objective responsibilities, in line with the demands of sustainable justice and environmental protection.In addition, this study also emphasizes that strict liability functions as a preventive instrument that encourages industry compliance with environmental standards. The practical implication of the application of this principle is increased corporate awareness to implement green-friendly technologies and more stringent risk management. Thus, strict liability not only provides wider access to justice for victims, but also contributes to the achievement of sustainable justice, which is a balance between the protection of individual rights, environmental sustainability, and legal certainty in economic development.

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