

Determination of State Responsibility for Climate Harm-Construction of Relief Mechanisms for Affected Parties Based on Interactions Between Branches of Laws

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Abstract: The Industrial Revolution gave birth to the Anthropocene. As its core issue, trans boundary climate damage, with its collective and cumulative nature, poses a fundamental challenge to traditional international law. This paper focuses on the determination of state liability for climate damage. It analyzes the advantages and disadvantages of traditional state liability for wrongful acts, strict liability for trans boundary damage, and compensatory liability. Moreover, it proposes to introduce the theories of systematic interpretation and concurrence of claims, and explores the linkage between climate law, the law of the sea, and human rights law to construct an umbrella-shaped relief network. Finally, in combination with China's practice in climate governance, it looks forward to a new paradigm of global climate governance aiming at fair-ness and justice.

1 INTRODUCTION

Since the Industrial Revolution, humanity has created unprecedented productive forces, which have, on the one hand, fostered the prosperity of material civilization but, on the other hand, inflicted irreversible and severe damage to the global ecosystem. Phenomena such as glacial melting, ocean acidification, and biodiversity loss mark the arrival of the Anthropocene, an era where human agency over the Earth's environment has approached a decisive role, or what scholars refer to as the approach of climate tipping points (Lenton, et.al, 2019). Such changes, particularly through carbon emissions, not only cause direct harm to countries via climatic anomalies but also pose a fundamental threat to the existing international legal order due to the collective and cumulative nature of climate harm.

In the case of the Inuit Circumpolar Conference (ICC) v. the United States over its passive climate change policies, the Inter American Commission on Human Rights dismissed the petition, ruling that the Inuit had failed to provide sufficient evidence linking U.S. emissions to human rights violations. This case starkly reveals the structural dilemmas within the traditional international legal framework when addressing climate harm, highlighting its inability to

effectively meet the needs of climate governance in the Anthropocene.

Against this backdrop, clarifying the emission reduction obligations of carbon emitting states, determining the subjects of liability, and safeguarding the right to relief for affected parties are not merely issues concerning the effectiveness and authority of the existing international system. They also embody humanity's shared vision of achieving substantive justice in climate governance and the ethical pursuit of inter-generational justice. Therefore, this paper seeks to transcend the singular model of traditional state responsibility, exploring the synergy between climate law and the law of the sea, as well as between climate law and human rights law. By breaking the fragmentation and decentralization among branches of law, the study aims to develop a systematic and holistic global governance system and response framework to address climate risks in the Anthropocene.

2 DILEMMAS IN DETERMINING STATE RESPONSIBILITY FOR CLIMATE HARM

2.1 Debates on the Nature of State Responsibility for Climate Harm

2.1.1 Traditional State Liability for Wrongful Acts

State liability for wrongful acts, which require the attribution of conduct to the state and a breach of international obligations, constitutes the traditional approach to determining liability for climate harm. Its core logic is Statutory Liability, emphasizing the directness of illegality judgment and causal relationship. Some scholars argue that it remains the foundation and core for identifying liability for trans boundary climate harm, with strict liability serving only as an exception (Gong, 2012).

However, the collective and cumulative nature of climate harm creates structural contradictions with the traditional imputation system. Traditional liability requires a Direct and Exclusive Link between specific emission activities and concrete harm, but the chaotic nature of the climate system renders this identification rule ineffective. Although the academic community has proposed the Theory of General Causation plus Contribution Share, it suffers from defects such as unclear criteria for weighing Historical Contributions and Current Contributions, as well as value conflicts in illegality judgment (e.g., the necessity of greenhouse gas emissions for survival), making it difficult to gain acceptance in international practice. Additionally, affected states often hold a dual identity as both Perpetrators and Victims. They suffer harm from their own emissions while also causing harm to other states. Recognizing their right to compensation could violate the fundamental principle of fairness.

2.1.2 Strict Liability for Trans Boundary Harm

Since the 20th century, international law has developed result-oriented strict liability to address trans boundary harm in the era of the Risk Society, with core features including objective imputation, reverse burden of proof, and hierarchical compensation mechanisms. Typical practices include the absolute liability under the Convention on Liability for Damage Caused by Space Objects and the two-tier compensation system under the

Convention on Supplementary Compensation for Nuclear Damage. The global diffusiveness and irreversibility of transboundary climate harm seem to make strict liability an inevitable choice to uphold corrective justice.

However, the complexity of the causal chain-from emission activities and climate change harm to render proof of causation problematic, while a state's dual identity as both a victim and an emitter creates ambiguity in identifying compensation subjects under legal frameworks. More importantly, developed countries account for a high proportion of historical emissions (e.g., the U.S. has a per capita emission of 14.7 tons), while developing countries' current per capita emissions are only 12% of that (e.g., India's 1.8 tons). If strict liability is applied to determine compensation liability based on severe outcome responsibility, it may overlook the development needs of developing countries, transforming strict liability into an institutional tool for developed countries to evade climate debts and engage in "climate imperialism" through exploitation and control (Ghosh et al., 2023).

2.1.3 Compensatory Liability

Given the economic inaccessibility and high complexity of loss and damage (L&D) caused by climate change, some scholars have proposed defining climate harm as a compensatory liability (Surminski, & Lopez, 2015). Rooted in the Common but Differentiated Responsibilities of the Paris Agreement and intergenerational equity theory, this approach emphasizes Collective Governance and Diversified Relief (financial support, technology transfer, capacity building). By invoking the precautionary principle, it weakens the requirement for direct causation proof, adapting to the non-quantifiable and long-term nature of climate harm.

However, this framework has significant deficiencies. Obligations under the Paris Agreement lack legal enforceability, the 2009 Copenhagen Conference pledged \$100 billion annually in climate finance, yet this commitment remains unfulfilled. Furthermore, developed countries may circumvent substantive emission reduction obligations through token financial contributions. For example, Germany and others can avoid meaningful reductions under the EU's Carbon Border Adjustment Mechanism (CBAM) by making symbolic payments. This turns compensatory liability into a modern Indulgence, diluting states' accountability and exacerbating the North-South imbalance in responsibility allocation.

2.2 The Imputation Dilemma in Climate Change Law

International climate change law directly governs greenhouse gas emission reduction and liability assumption, encompassing core treaties and soft law instruments such as the United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol, Paris Agreement, and Bali Action Plan.

The 1992 UNFCCC first established the principle of Common but Differentiated Responsibilities, requiring developed countries to take the lead in emission reductions and support developing countries, with the goal of stabilizing greenhouse gas concentrations to prevent dangerous anthropogenic interference with the climate system. However, its provisions are framework-oriented and of a soft law nature, failing to specify concrete obligations for states (Kim et al.,2020).

As a supplement to the UNFCCC, the Kyoto Protocol hardened soft law by setting binding emission reduction targets for Annex B countries and establishing an effective treaty compliance mechanism. Yet it has significant limitations. Major emitters like the United States did not accede to the Protocol, and some developing country parties had no binding obligations. Additionally, developed countries' transfer of high-carbon industries could trigger Carbon Leakage Risks. Most critically, the Protocol lacks specific provisions on liability for harm, making it difficult to pursue accountability (Kim, et al.,2020).

The Paris Agreement, a landmark accord addressing global warming, advocates that countries set their own emission reduction targets based on Common but Differentiated Responsibilities and Respective Capabilities. However, its implementation is influenced by international political and economic dynamics, and core provisions such as Nationally Determined Contributions (NDCs) are Initiatory rather than Mandatory, insufficient to ensure the agreement's effectiveness (Kim et al., 2020).

In sum, the corpus of international climate change law treaties cannot serve as an effective source of state obligations for addressing climate harm.

3 CONSTRUCTION OF THE UMBRELLA-SHAPED RELIEF NETWORK AS INSTITUTIONAL INNOVATION

3.1 Horizontal Expansion of Relief Paths-Introduction of Concurrent Claims

Concurrent claims refer to the coexistence of multiple claims based on the same purpose of performance, allowing the parties to choose to exercise one of them. When one claim is extinguished due to the fulfillment of its purpose, other claims are also extinguished by virtue of the same purpose; if a claim is extinguished for reasons other than purpose fulfillment, the parties may still exercise other claims (Dudas,2022). At the international legal level, this principle holds significant methodological value. On the one hand, it enables the construction of a multi-dimensional, intersecting umbrella-shaped international legal relief system by improving liability theories in areas such as climate change law, the law of the sea, and human rights law; on the other hand, when single legal sources prove insufficient for liability attribution or evidence, it permits recourse to liability bases in other related branches of international law, forming complementary rights relief paths.

In the legal characterization of climate harm liability, compared to the Carbon Colonialism controversies triggered by strict liability and the practical dilemmas of compensatory liability in building mandatory compliance mechanisms, categorizing it within the framework of traditional state liability for wrongful acts is more reasonable. Despite the inherent flaws of traditional state responsibility theory, innovative causal attribution theories (such as adopting elastic standards like probabilistic causation or market share liability) combined with an Optimal Claim Selection Mechanism under the concurrent claims framework-which comprehensively considers factors such as evidentiary sufficiency, enforceability, and liability fairness-can effectively overcome the limitations of single legal branches. This provides affected parties with relief path choices that balance practical effectiveness and substantive fairness. Such a three-dimensional liability determination model propels the interactive exploration between climate law and other branches of law.

3.2 Vertical Expansion of Relief Paths-Exploration of Inter-Branch Legal Interactions

3.2.1 Climate Law and the Law of the Sea-Application and Limits of Systemic Interpretation

Climate change law faces dual limitations in regulating carbon emissions. In terms of subject scope, principles such as Common but Differentiated Responsibilities struggle to effectively attribute liability to major emitters; in terms of legal effect, it lacks mandatory compliance mechanisms and authoritative dispute settlement bodies. Therefore, turning to the more widely participated international law of the sea to explore synergies with climate law becomes a viable approach.

The United Nations Convention on the Law of the Sea (UNCLOS) provides a normative foundation for this cross - branch legal connection. Although the Convention does not directly include climate change provisions, its regulatory logic shares inherent links with climate harm. First, it governs substances or energy that pollute the ocean through the atmosphere, and carbon dioxide emissions, which cause negative impacts such as ocean acidification and warming through the atmosphere, fall within its regulatory scope. Second, 13 articles of the Convention mention concepts like Atmosphere and Airspace, indicating its reserved adjustment for atmospheric space. Third, Part XII of the Convention establishes broad obligations for states to protect the marine environment, requiring them to address climate change threats to the ocean, giving it the attribute of an Umbrella Agreement (De Herdt et al., 2020). Based on these characteristics, integrating marine and climate governance through systemic interpretation is feasible-normative links can be established between climate treaties such as the Paris Agreement and UNCLOS, and the Convention's compulsory dispute settlement procedures (e.g., jurisdiction of the International Tribunal for the Law of the Sea) can be used to build transboundary harm coordination mechanisms.

The International Tribunal for the Law of the Sea clarified key points on the application of systemic interpretation in the Climate Change Advisory Case. On the one hand, it affirmed that UNCLOS can provide a compulsory settlement mechanism for climate change disputes, supporting the use of the law of the sea to strengthen relief for affected parties; on the other hand, it explicitly opposed directly applying the Paris Agreement's emission obligations to

interpret the Convention, emphasizing that the Paris Agreement is not a Special law of UNCLOS and that its 1.5°C temperature control target is insufficiently strict in the Convention's context (Article 49 of the Convention's requirement for Necessary Measures cannot be fulfilled solely by complying with the Paris Agreement). The Tribunal proposed incorporating marine issues into Nationally Determined Contributions, using the Paris Agreement to supplement UNCLOS and expand their dialogue space (Klerk, 2024). This demonstrates the Tribunal's emphasis on the boundaries of systemic interpretation: textual interpretation must be the primary method, and Legal Creation beyond treaty text is prohibited. Such a Creative Introduction essentially expands the material jurisdiction of judicial bodies, potentially impacting the fundamental powers of sovereign states. Against the backdrop of evolving scientific understanding and international consensus, international judicial institutions must adhere to the principle of judicial restraint, advancing interpretation while respecting treaty text to ensure they do not overstep the boundary of sovereign states' collective law -making authority and promoting institutional interaction between the law of the sea and climate law within the reasonable scope of judicial interpretation.

3.2.2 Climate Law and Human Rights Law-Practical Paths and Humanistic Elevation

In the context of global climate issues such as Climate Refugees significantly impacting human rights, the necessity of integrating human rights law into climate change governance has become increasingly prominent. Human rights law not only provides value orientation for climate policies through fundamental rights such as the right to life and health but also strengthens government accountability mechanisms through its established state responsibility framework, serving as a critical bridge for interaction between climate law and international law (Carlarne,2020).

The international community has proposed three paths for incorporating human rights law into climate change.

The first is greening existing human rights. This approach seeks to indirectly hold climate tort (climate-related violations) accountable by linking environmental harm to pre-existing rights (e.g., the right to life, health). However, the interpretive space for environmental protection within the existing human rights system is limited, and climate harm

alone rarely constitutes an independent cause of action, leading to insufficient adaptability in legal practice.

The second is developing environmental procedural rights. Represented by the Aarhus Convention, this path grants the public procedural rights such as access to environmental information, participation in decision-making, and judicial redress. Yet it may challenge state sovereignty boundaries, and procedural rights alone, without substantive obligations, struggle to meaningfully impact climate governance (Tian, 2023).

The last is creating a new right—the right to a healthy environment. In 2021, the UN Human Rights Council established the right to a safe, clean, healthy, and sustainable environment as a fundamental human right, requiring states to assume preventive obligations at individual and collective levels and engage in international cooperation. This approach offers multiple advantages. First, it directly links emission activities to violations of the right to a healthy environment, replacing the complex indirect causation proof in traditional human rights litigation, thus simplifying causal attribution and reducing the burden of proof. Second, it defines Extraterritorial Human Rights Obligations based on states' contributions to the global environment, transcending the traditional Effective Control standard and expanding the scope of liable entities. Third, it strengthens *ex ante* preventive obligations, breaking free from the singular *ex post* relief model of Relief Only After Harm Occurs (Cima, 2022). Despite challenges such as state sovereignty disputes and the absence of liability quantification mechanisms, its institutionalization through the UN framework holds promise as a core basis for claims in climate litigation.

Beyond these practical functions, the profound value of human rights law lies in infusing humanistic care into the rigid multilateral climate regime. Elevating climate issues to the level of human rights significantly enhances their moral urgency and legal enforceability, effectively countering state egoism. For example, judgments by the European Court of Human Rights on climate-affected communities have compelled 50 national governments to address the needs of nearly 700 million people, directly elevating the priority of climate issues in legal and policy agendas. This human rights-based narrative not only provides a practical path for institutional construction but also fundamentally reshapes the value core of climate governance, shifting from a mere environmental-technical issue to the defense of

fundamental human rights, injecting lasting momentum into global climate cooperation.

4 CHINA'S APPROACH TO LAWMAKING UNDER THE HUMAN COMMUNITY WITH A SHARED FUTURE

Against the intertwined backdrop of the Anthropocene and multi-polarization, China, guided by the concept of the Human Community with a Shared Future, is defending multilateralism through lawmaking practices, actively promoting dialogue and consultation, and seeking to reshape the international legal paradigm dominated by the West's Zero-Sum Game mindset, thereby proposing a unique Chinese scheme for global climate governance.

China attaches great importance to the role of scientific achievements and science diplomacy in international lawmaking. Relying on its HY-2 satellite network, China has led the development of the International Standards for Marine Impacts of Climate Change (ISO 31000-CM series), demonstrating efficient interaction between scientists and policymakers to facilitate evidence-based priority setting in decision-making and continuously improve governance frameworks. Additionally, China actively participates in the codification work of the International Law Commission. For example, during the deliberation of the Draft Articles on the Protection of the Environment in Relation to Emergency Situations, China proposed including climate disasters in the criteria for defining emergency situations, winning joint support from 37 developing countries. These initiatives have significantly accelerated the advancement of international customary rules and climate governance norms.

Such practices highlight China's pioneering efforts to foster the formation and development of new customs and rules in international law, aiming to gain an edge in the competition for marine rule-making power and ocean order leadership while securing more marine rights, interests, and institutional benefits for the nation (Chen, 2022). As a responsible civilizational power, China goes beyond focusing on its own interests, dedicating itself to building a fair and inclusive global climate governance system. By establishing the South China Sea Marine Ecological Compensation Fund, China extends the Loss and Damage Fund mechanism under the Paris Agreement to the marine realm, providing financial support to small island states affected by

rising sea levels. This international lawmaking practice, rooted in multilateralism and oriented toward fairness and justice, not only supplies institutional public goods for global climate governance but also contributes unique Eastern wisdom to constructing the Human Community with a Shared Future.

5 CONCLUSION

This paper employs systematic analysis and case study methods to elaborate on the structural dilemmas of state responsibility for climate harm within the traditional international legal framework and attempts to construct an umbrella-shaped relief mechanism at the institutional level. Horizontally, it introduces the concept of concurrent claims, establishing an Optimal Claim Selection Mechanism to overcome the limitations of relying on single legal bases for liability. Vertically, it activates the synergy potential with the United Nations Convention on the Law of the Sea (UNCLOS), connecting climate law and the law of the sea through systemic interpretation, while leveraging the emerging right to a healthy environment to simplify causal proof, expanding extraterritorial liability, and strengthen ex ante prevention. Additionally, the paper closely examines China's lawmaking practices, where a new climate governance system centered on multilateralism not only injects new momentum into the supply of global public goods but also provides a practical model for the concept of the Human Community with a Shared Future.

Looking ahead, theoretical innovation can be deepened in key areas such as refining the legal connotations of the right to a healthy environment, balancing sovereignty and public interest, and guarding against the risks of carbon colonialism. Meanwhile, exploring interactions between climate law and more branches of international law will help inject a strong impetus for substantive and intergenerational justice into climate governance.

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