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Dilemmas in the International Regulatory Framework for Transboundary Pollution Transfer

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Abstract. In the globalized context, transboundary pollution transfer is a significant environmental issue between developed and developing countries. This paper, through case analysis, focuses on two typical phenomena: unauthorized hazardous waste transfer and transnational corporations' legal pollution discharge exploiting legal loopholes. It uncovers the legal disputes arising therefrom. The root causes lie in the "soft law" nature and judicial challenges of international environmental law, such as WTO jurisdictional barriers, transnational corporations' liability evasion, and developed countries' rule - making dominance, which have worsened developing countries' passivity. Consequently, this paper proposes systematic countermeasures to promote global environmental equity, sustainable development, and to support the protection of developing countries' environmental rights.

Keywords: Transboundary Pollution Transfer, International Environmental Law, Environmental Justice, Soft Law, Transnational Corporations

1. Introduction

1.1. Significance of the research

Globalization has made pollution transfer from developed to developing countries a critical environmental issue, essentially exploiting the latter's environmental rights. This exacerbates global environmental injustice and reveals flaws in international environmental law. My study analyzes transboundary pollution's forms and regulatory gaps, proposing systematic solutions to advance environmental justice and support developing countries (including China).

1.2. Literature review

1.2.1. Related research on the definition of transboundary pollution transfer

Foreign scholars often analyze transboundary pollution transfer from a global ecosystem perspective. For example, American scholar David N. Pellow in Resisting Global Toxics: Transnational Movements for Environmental Justice identifies it as developed regions shifting toxic waste burdens to developing regions for economic gain. He emphasizes its links to race and class, viewing it as an extension of traditional colonialism in environmental practice [1].

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Chinese scholars focus more on how China can avoid becoming a victim of transboundary pollution transfer. For instance, Wang Jilong in Cross-cultural Perspective on Problems and Solutions of Environmental Journalism in China uses Apple's environmental pollution cases in China to demonstrate that such transfers represent a pattern where multinational corporations exploit legal loopholes in developing countries to relocate high-pollution industries for maximum economic benefit [2].

1.2.2. Research on transboundary pollution transfer and the distinction between "legal trade" and "illegal dumping"

Foreign scholars often analyze the drivers of cross-border pollution transfer. For example, Jason W. Moore's Capitalism in the Web of Life: Ecology and the Accumulation of Capital attributes it to capitalism's exploitation of "cheap nature" for capital growth [3].

Chinese scholars focus more on the concrete impacts of transboundary pollution transfer on China's environment. For instance, Yu Kaihong in Governance Mechanisms of Ecological Poverty Issues notes that eco-colonial policies by developed capitalist countries toward China have caused environmental degradation and resource overexploitation, further exacerbating China's eco-poverty [4].

In the author's opinion, the research divergence stems from developed and developing countries' distinct roles in transboundary pollution transfer. Developed countries, as the "offenders", focus on the motives and try to justify it. Developing countries, as the "victims", focus on the harm to draw international attention.

After reading the literature, the author found that scholars focus on international environmental law to distinguish between "legal trade" and "illegal dumping". The Basel Convention details hazardous waste types, transfer procedures, and licensing. Compliant transfers qualify as legal trade, while violations are illegal dumping. However, ambiguities in waste definition, procedural flaws, and inaccurate assessments can blur this line, posing a key challenge in regulating transboundary pollution.

1.2.3. Research on the "soft-law trend" in international environmental law

Foreign scholars note the Paris Agreement's tendency toward "soft law". Daniel Bodansky in The Paris Agreement: A New Hope for Climate Change? observes that its use of "should" instead of "shall" weakens binding force [5]. Philippe Sands in Principles of International Environmental Law argues that international environmental law relies on the "consent of the state" principle, making it largely "soft law" that hinders effective environmental solutions [6].

Domestic scholars also criticize that international environmental law insufficiently regulates transboundary pollution transfer. In the book International Environmental Policies and Governance, Zhu Yuan notes that conventions' vague phrases, like "as far as possible" and "to the maximum extent possible", can cause uncertain implementation [7].

Some believe the "soft-law trend" in international environmental law, though potentially ineffective in curbing pollution transfer from developed nations, has its merits. It allows for flexible balancing of different countries' interests and promotes international environmental cooperation. He Zhipeng and Sun Lu, in How International Soft Law is Possible: An Environmental Perspective, note that international soft law is significant in environmental and other fields, with sufficient flexibility to swiftly adapt to changes in the international community's environment [8].

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1.2.4. Academic proposals for developing countries to address transboundary pollution transfer

International scholars like David N. Pellow, in his book Resisting Global Toxics: Transnational Movements for Environmental Justice, advocate for a global environmental justice movement to counter transboundary pollution transfer. He calls for collaboration among governments, NGOs, and community groups worldwide to form transnational environmental justice alliances [1].

Domestic scholars mainly suggest improving domestic laws and international cooperation. Yu Kaihong's Research on the Governance Mechanisms of Ecological Poverty Issues proposes that developing countries cooperate more in international environmental governance to establish fair rules and combat eco - colonialism [4]. Also, Ministry of Ecology and Environment, PRC has issued regulations. In its Reply to Proposal No. 1340 of the Fifth Session of the 13th National People's Congress, it stressed improving hazardous waste transfer management and strengthening environmental management throughout the waste's entire process [9].

However, in the author's view, these plans face three challenges. Firstly, global environmental justice movements raise awareness but can't drive real change in international environmental policies or reverse the soft-law trend. Secondly, developing countries are limited by economic, technological, and legal factors, making it hard to quickly enhance their capabilities. Thirdly, developed countries often block reforms against their interests, leading to frequent resistance against developing countries' proposals.

1.3. Research approach and innovations of this paper

Existing studies on transboundary pollution transfer are mostly superficial. Using literature and case analysis methods, this paper systematically explores the issue in three parts. Its innovativeness lies in revealing the hidden nature of transnational corporations' pollution transfer and the shortcomings of international environmental laws and regulations, and proposing innovative countermeasures like building a transnational environmental justice alliance to help developing countries enhance their voice.

2. The phenomenon of transboundary pollution transfer and its legal controversies

Under economic globalization, transboundary pollution transfer has worsened. Pollution transfer mainly occurs in two ways: one is the illegal transfer of hazardous waste without consent, often via smuggling. The other is developing countries initially accepting transnational pollution, but as policies evolve and enforcement strengthens, they become aware of the ecological threats and enhance supervision. The author will specifically analyze legal controversies with cases in the following parts.

2.1. Typical case analysis of transboundary pollution transfer

2.1.1. Transboundary movements of hazardous wastes without consent

In 2013 - 2014, a Canadian company exported 103 containers of "recyclable plastics" to the Philippines, which actually included a large amount of garbage, fraudulently transferring polluting waste without the Philippines' consent. The Philippines accused Canada of violating the Basel Convention and repeatedly requested the waste be returned. Canada finally did so in May 2019 under international pressure [10]. Canada's actions infringed on the Philippines' sovereignty to

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decide whether to accept the waste. As an international community member, Canada should have protected the global environment and ensured its exported waste didn't seriously pollute the importing country. However, Canada failed to fulfill its transnational environmental responsibilities, causing serious damage to the Philippines' environment.

In addition, this case shows the incompleteness of the international legal system. The Basel Convention, which manages hazardous waste movements, has loopholes in plastic waste regulation. The Canadian company exploited this by exporting garbage as "recyclable plastic", evading the Basel Convention's rules. Canada's delay in repatriating the waste also reveals weaknesses in international environmental supervision and enforcement.

2.1.2. Relationship between transnational corporations' legal pollution emissions and developing countries' legal policies

China's plastic waste imports are a typical example of this type of transnational pollution transfer. Driven by raw material demands and low-cost labor, China became the world's largest plastic waste importer. However, growing environmental concerns and public awareness revealed the hazards of "foreign garbage" imports. In 2017, China implemented The Implementation Plan for Prohibiting the Entry of Foreign Garbage and Advancing the Reform of the Solid Waste Import Administration System, banning such imports entirely and enforcing strict crackdowns on violations [11].

In this scenario, transnational corporations legally shift polluting industries to developing nations, exploiting their lower environmental standards to bypass international law constraints. Despite being formally legal, this worsens global environmental inequality and shows corporate irresponsibility.

2.2. Legal controversies behind the phenomenon of transboundary pollution transfer

Complex legal disputes underlie transboundary pollution transfer. The author thinks they mainly involve three aspects: national sovereignty, transnational environmental responsibility, and the inadequacy of the international legal regulation.

2.2.1. National sovereignty

In non-consensual cross-border pollution transfers, the act directly violates the importing state's sovereignty. Under fundamental international law principles, states possess exclusive jurisdiction within their sovereign territory, including regulatory authority over natural resources and environment. When exporting states impose waste upon importers without inquiring about consent, this constitutes a novel form of sovereignty coercion.

2.2.2. Transnational environmental responsibility

As key members of the international community, states must ensure their activities don't harm others' environments and avoid exporting pollution wastes. But due to the insufficient binding force and supervision of current international environmental law, states can exploit loopholes to transfer pollution wastes and evade responsibility. Determining state responsibility is complex. Some scholars advocate fault-based responsibility, while others support strict liability [12].

In addition to this, transnational corporations also play a key role in transboundary pollution transfer. They often use complex corporate structures and legal arrangements to evade responsibility, making it hard for victims to obtain legal redress. While some international treaties set environmental standards for these corporations, the lack of strong enforcement mechanisms means

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these rules are often not effectively implemented, and corporations can avoid environmental responsibility.

2.2.3. The inadequacy of the international legal regulation

Weak enforcement and binding force in international law are key reasons for frequent transboundary pollution transfer. First, vague provisions in international environmental law, like the Basel Convention's reliance on domestic definitions of "hazardous wastes", create varying standards that impede enforcement. Second, environmental conventions rely on voluntary compliance without punitive measures. Although the Basel Convention bans illegal hazardous waste transfers, gray trade persists due to ineffective international sanctions. Thus, these regulatory gaps pose operational challenges to controlling such transfers.

3. Analysis of the causes of legal controversies over transboundary pollution transfer

Having reviewed typical cases and legal disputes in previous part, this part will reveal the systemic and structural reasons for the disputes from the perspective of the regulatory dilemmas of international environmental law and the practical obstacles of judicial practice.

3.1. Regulatory dilemmas of international environmental law

3.1.1. Fragmentation of regulatory frameworks

The fragmentation of the regulatory system of international environmental law is mainly reflected in the following two aspects:

Firstly, there are conflicts among international treaty rules. On one hand, international environmental law focuses on environmental risks. For example, the Basel Convention regulates dangerous waste environmental risks, while the WTO emphasizes trade liberalization, regarding waste trade as goods flow, which causes conflicts between environmental and trade aspects. On the other hand, within international environmental law, there are numerous multilateral environmental agreements. However, there is a lack of coordination mechanisms among them. Treaties like the Kyoto Protocol and the Paris Agreement deal with specific environmental problems respectively, and the rules may not be compatible with each other [13].

Secondly, the institutional framework for addressing international environmental issues is overlapped. International organizations have an overlap in functions. Many organizations have jurisdiction over the same environmental issue. For example, plastic pollution involves UNEP, IMO and the Basel Convention. Also, international environmental dispute settlement mechanisms are scattered. The same environmental issue may be brought to different judicial bodies. For example, transboundary waste transfer involves international environmental law and trade law, which have different dispute settlement institutions. This can lead to different judgments for the same case.

3.1.2. "Soft-law trend" of enforcement mechanisms

International environmental conventions generally rely on "soft compliance mechanisms" that lack binding power over nations. On the one hand, they depend on countries' voluntary commitments, such as the Paris Agreement's "Nationally Determined Contributions" (NDCs), which lack unified emission - reduction targets and punishment mechanisms [14]. On the other hand, enforcement also

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lacks coercive power. For example, in Canada's garbage export case, the Basel Convention lacks sanctions, leading to Canada delaying garbage return for six years without punishment.

3.2. Practical obstacles in judicial practice

3.2.1. The role of transnational corporations

Transnational corporations play an important role in transboundary pollution transfer. On the one hand, in order to pursue economic interests, transnational corporations often transfer highly polluting industries to developing countries with lower environmental standards, so they are the "perpetrators" of transboundary pollution transfer. On the other hand, transnational corporations utilize their complex corporate structures and legal arrangements to avoid environmental liabilities, and are the "duty evaders" of transboundary pollution transfer.

Furthermore, there are significant obstacles to holding transnational corporations accountable. At the international level, as the International Court of Justice only handles disputes between nations, local residents affected by pollution cannot sue these corporations directly. At the domestic level, host countries often lose jurisdiction due to the "forum shopping" strategy of multinational corporations. Additionally, most host countries, being developing nations, lack the technical and forensic judicial capabilities to establish a causal relationship between pollution damage and the actions of these corporations, resulting in a broken evidence chain.

3.2.2. Developed countries' dominance in international environmental law-making

Developed countries often use their economic power to control international environmental affairs and push for rules that favor themselves. For instance, during the Basel Convention's revision, they blocked the inclusion of plastic waste as hazardous waste until 2019. This delay was essentially to preserve the space for arbitrage for their plastic exports [11].

This dominance is evident not only in the creation of international environmental law, but also in its enforcement and oversight mechanisms. Developed countries, with significant influence in international environmental organizations, can impact implementation, weaken unfavorable rule enforcement, and exert more pressure on developing countries.

4. Countermeasures to resolve legal controversies on transboundary pollution transfer

Based on the above analysis of the causes, the author thinks it's now crucial to propose systematic solutions from three aspects: the renewal of the international legal system, the reconstruction of accountability mechanisms, and the empowerment of developing countries.

4.1. Promoting the improvement and "hard lawization" of the international environmental law system

4.1.1. Addressing the fragmentation of international environmental law

To address the fragmentation of international environmental law noted earlier, the author proposes two solutions. First, establish a "Coordinating Committee on International Environmental Law" to identify conflicting terms between international environmental treaties and WTO rules, balance waste trade and environmental protection, issue a "Joint Declaration on the Interpretation of Treaties" to prioritize environmental goals over WTO trade liberalization, and integrate existing

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treaties into a comprehensive environmental law code [15]. Second, revise the Basel Convention annex to list emerging pollutants like “plastic waste” and “e-waste” as “hazardous wastes”, preventing developed countries from pollution - shifting through ambiguous definitions.

4.1.2. Strengthening the binding force of international environmental law

To address the soft-law issue in international environmental law, the author proposes two solutions: adding binding obligation clauses to new conventions to specify states’ environmental duties and liability for violations [16]. For example, the phrase “parties should take action” in the Paris Agreement should be replaced by “parties shall fulfill its emission reduction obligations”, and a mechanism for penalizing violations should be put in place. And drawing on the International Tribunal for the Law of the Sea’s experience to establish a permanent international environmental law tribunal for transboundary pollution disputes. Additionally, an “International Environmental Monitoring Bureau” with independent investigation power should be created to combine ex-ante supervision with ex-post adjudication for preventive control.

4.2. Building and strengthening transnational environmental accountability mechanisms

4.2.1. Clarify the subject and scope of responsibility

In transboundary pollution disputes, accurately identifying liability is crucial. To address the responsibility of transnational corporations, the author suggests an international convention to hold transnational corporations accountable for environmental damage and require parent companies to answer for overseas subsidiaries’ pollution, preventing evasion via the corporate veil doctrine. Polluted nations or NGOs should also be able to directly sue transnational corporations in certain cases. To address the responsibility of State, States should bear “strict liability” for transboundary pollution by enterprises or individuals under their jurisdiction. Even without involvement in the pollution transfer, they must exercise “due diligence” in overseeing subsidiaries. If supervision fails and pollution occurs, they should be liable [17]. If the parent company exercises “due diligence” and the transnational corporation is the direct polluter, the parent company only bears “supplementary liability”, compensating if the transnational corporations cannot.

4.2.2. Establish effective mechanisms for transboundary environmental evidence collection and judicial cooperation

To address developing countries’ challenges in obtaining evidence for transboundary pollution disputes, a global environmental data hub integrating customs and other records via modern tech should be established to track and store pollutant waste flows. Additionally, a transnational environmental judicial assistance body should be set up, or multilateral pacts should allow victim countries to issue investigation orders to parent countries of transnational corporations to gather relevant evidence.

4.3. Enhancing developing countries’ voice and capacity in environmental governance

4.3.1. Technical support from developed countries to developing countries

Developed countries ought to transform their pledged technological assistance to developing countries into legal obligations. They could set up specialized environmental management funds,

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sign mutual - aid agreements, donate eco - friendly equipment and technologies, and team up with universities to train top - notch environmental management professionals. In addition, it is advisable to establish a global environmental technology bank. Developed countries can invest their environmental technologies in this bank, which developing countries can then apply to use as needed.

4.3.2. Establishment of regional synergistic governance modes among developing countries

Since developed countries often use their international dominance to control international law - making, individual developing countries can't effectively resist them. Thus, developing countries need to amplify their governance capacity via regional union to shift away from the current uneven power dynamic where single developing countries confront developed ones. They can establish a regional collaborative governance model through multilateral agreements, hold regular regional environment ministerial conferences to consult on environmental governance and formulate strategic plans [18]. If it is hard to set up an international environmental court, a regional one can be created first. Also, a blacklist of polluting enterprises can be made based on multinationals' violation records, barring those that refuse to take responsibility from entering the regional joint market.

5. Conclusion

Significant global environmental governance challenges like transboundary pollution transfer need international cooperation. This paper, via typical case analysis, shows how developed countries exploit regulatory loopholes and power monopolies to shift environmental costs, highlights three key obstacles in international environmental law and governance, and suggests systematic solutions. Tackling this issue is of dual strategic importance for China, both domestically and internationally. However, due to deep - seated obstacles such as sovereignty concerns, political will of developed countries, and interest balancing in regional cooperation, breaking the deadlock demands further international exploration in practice.

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