The influence and strategy on the dilemma of transnational environmental damage to the state responsibility on the current energetic situation

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Abstract. This paper mainly analyzes the difficulties of transnational environmental damage to state responsibility: it is difficult to establish the causal relationship between the cause and effect, to identify the polluters, to quantify the damage, and to improve the supporting legal measures. This paper analyzes the impact of the above predicament on the energy situation, and puts forward some methods to improve it: propose to construct a unified legal norm system for transnational environmental damage and state responsibility, and improve the early warning mechanism of environmental pollution in order to prevent it before happening, provide effective and sufficient financial support, etc.

1. The dilemma of transnational environmental damage to state responsibility

Although the system of national responsibility can facilitate timely and adequate compensation for transnational environmental damage in the event of transnational environmental damage, in most international countries, most countries are reluctant to cause liability problems caused by transnational environmental damage, especially due to private behavior. The damage has risen to the national level, and many factors have hindered the implementation of this system. The cross-border water pollution problem of the Lancang River and the Mekong River mentioned in the above section will be taken as an example to analyze and explain the current difficulties of the national responsibility system for transnational environmental damage [1].

The dilemmas of the state responsibility system reflected in this incident mainly include:

1.1. Proof of cause and effect

First of all, we must prove that there is a causal relationship between the alleged act and the damage. This is a major obstacle, which is mainly due to the following reasons: (1) There is usually a certain amount of pollution between the source and the damaged area. In this case, the contaminants flowed along with the water and caused damage to non-polluted areas. This made it difficult to determine the necessary relationship between the two. (2) Because of the special nature of environmental pollution, people cannot anticipate the fact of damage that may occur when the alleged act occurs, because pollution may not appear until after the act has occurred. (3) The alleged act does not always lead to environmental damage. For example, river water abundance, flood season or dry season will affect the severity of the consequences caused by the dumping of waste, so it is difficult to determine the difference. Whether the alleged conduct under the conditions caused the current damage facts. (4) The complexity of the pollution causes. In this case, the water pollution may be caused by the discharge of
sewage upstream, or the discharge of pollutants from the cargo ship, or it may due to agricultural irrigation.

1.2. Identify polluters
For long-distance pollution, due to technical reasons, it is basically impossible to determine the true legal meaning of the polluters. Even for short-distance pollution, it will be difficult to determine the polluters. The “One Belt and One Road” strategy involves more than 60 countries along the route. The railways carry goods and commodities of various countries. There are factories established by countries along the rivers, and ships of various countries are sailing on the sea. The pollution caused by a ship may be within the scope permitted by law, but the total amount of pollution cannot be underestimated. In this case, how to identify the polluter has also become an important issue [2].

1.3. Quantification of damage
Although in the previous chapter, the intrinsic value of life was explained using the Hande formula, the Hande formulae have drawbacks in practical application— it is difficult to quantify itself. Because in real life, it is difficult for people to accurately calculate the probability of an accident and the loss that the accident will cause. This increases the difficulty of applying this formula.

1.4. Lack of legal system
Due to the deep-seated "sovereignty principle" and the conflicts of interest between different countries or national associations, there are few existing international treaties that stipulate the responsibility of the state, removing the Space Responsibility Convention of 1972 and the 1978 prohibition of military or The use of the "Environmental Change Technology Treaty for any other hostile purpose does not basically provide for the issue of State responsibility, or simply states that a State may assume national responsibility for transnational environmental damage only if it fails to perform its duty of care, such as the "UN Convention on the Law of the Sea" The lack of theory will lead to many practical difficulties.

This dilemma is particularly evident in this case. First of all, in terms of domestic law, with the exception of China, Thailand, and Vietnam, other countries do not even have a basic environmental protection system [3]. Therefore, it is more difficult to protect rivers from the perspective of domestic legislation. Secondly, internationally, the Mekong River Commission is the only coordinating agency in the middle and lower reaches of the country. However, the nature of its consultants has determined its limited functions. Moreover, China and Myanmar have not joined the agency and its authority has been greatly reduced.

Therefore, for decades, the relevant countries in the basin have been in a state of constant controversy over the ecological and environmental pollution in the Lancang-Mekong River Basin. This will inevitably affect the friendly relations between China and coastal countries. Against this background, the implementation of the “One Belt and One Road” strategy will inevitably face more obstacles. Therefore, it is particularly important to improve the system of national responsibility.

2. The perfection of transnational environmental damage state responsibility system

2.1. Constructing a unified legal norm SYSTEM for transnational environmental damage and state responsibility
The “One Belt and One Road” initiative will inevitably involve more transnational environmental damage issues. The current unsound status of international laws and regulations will obviously create obstacles to the peaceful resolution of these issues. Therefore, the relevant countries should establish unified and corresponding departments. Organize the construction of a unified legal system.

The unified formulation of the forms of responsibility for state responsibility and the quantification of environmental damage will, from an economic point of view, greatly reduce transaction costs and promote the increase of social benefits

However, the construction of a unified legal norm system will also generate a lot of costs. Therefore,
before the establishment of this system, we must carry out a cost-benefit analysis of the legislation.

$$Z = C - V$$  \hspace{1cm} (1)

Among them, $Z$ represents net income, $C$ is the cost of the rule of law, and $V$ represents the return of the rule of law. If $Z > 0$, this indicates that the net income for constructing this legal normative system is positive, indicating that this system should be constructed; but if $Z < 0$ then the net income is negative and this system should not be constructed.

- The cost of the rule of law

The definition of “cost” in western economics is defined by microeconomics. In economics, economic costs include explicit costs and implicit costs. Among them, dominant costs are accounting costs, while hidden costs are in production. The value of the owning inputs used in the process and in the business activities [4].

The “rule of law costs” is a concept that intersects law and economics and refers to the cost of the rule of law and its operation. From the perspective of economics, the nature of the cost of the rule of law is an “input”, and this input includes both explicit and implicit investment, and it includes both tangible and intangible inputs. Tangible inputs refer to those that can be quantified and calculated. Intangible inputs refer to those that cannot be quantified or easily quantified, such as the degree of realization of civil rights, the hypothesis of public facilities, etc.

$$C = \alpha + \beta + \chi + \delta$$  \hspace{1cm} (2)

Among them, $\alpha$ shows the cost of investment in the legislative sector, $\beta$ shows the cost of law enforcement, $\chi$ shows the cost of the judicial process, $\delta$ shows and the cost of compliance.

In terms of legislation, costs mainly include: collection of legislative information, legislative data and expenditures for the formation of legislative drafts; expenditures for investigations; expenditures for expert consultations and argumentation expenses; expenditures for opinions such as hearings, symposia, and online public solicitation opinions; Production of regulations, texts, publication and dissemination of laws and regulations; spending on other human, material, and financial resources; social costs of legislation, reduction of economic indicators due to legislation, increased unemployment, changes in the lifestyle habits of residents caused by legislation Wait.

For the latter part of the law enforcement, judicial and law-abiding links, it also requires a lot of cost. For example, it is necessary to organize an international law enforcement team and an international judicial team to maintain the cost of the normal operation of these teams (such as the payment of salaries to public servants, the cost of office space and office supplies, etc.), and also to invest in the law enforcement process [5]. The issues such as forensic investigation and appraisal, the cost of judicial proceedings, and the promotion of laws and regulations in relevant countries and enterprises are expenses incurred.

During the implementation of the “One Belt and One Road” strategy, we have involved more than 60 countries and regions along the route. Among these countries, developing countries have developed countries, Asian countries, and European countries also have African countries. The interests of different countries require different countries to conduct long-term games. Therefore, the cost of establishing a convention that can be jointly adhered to is huge, because in addition to the normal legislative costs, the establishment of international conventions also needs to take into account the language differences between countries, cultural differences, political interests and a series of related issues.

- Benefit of the rule of law

Only by comparing costs and benefits can we really guide legislation

$$V = \epsilon + \phi + \varphi + \gamma$$  \hspace{1cm} (3)

Among them, $\epsilon$ expresses the impact of constructing a legal normative system on the characteristics of the law, $\Phi$ shows the impact on the economy, $\varphi$ expresses the impact on society, and $\gamma$ shows the impact on politics.
Specifically, the impact of constructing a legal normative system on the characteristics of the law is mainly referred to as legal value effectiveness, legal authority effectiveness, and legal form effectiveness. For example, legislation can achieve the beliefs pursued by laws such as freedom and equality, and legislation can strengthen the authority of the law; The main impact of the economy is that the legislation can promote the growth of trade along the “Belt and Road” countries and increase the total economic volume; impacts on society include legislation that promotes social harmony and promotes sustainable development; the impact on politics mainly refers to legislation. It can promote better communication between countries along the “One Belt and One Road” and can guarantee the implementation of the “One Belt and One Road” strategy.

2.2. Promoting the perfection and implementation of the state responsibility system in cooperation
All countries should first fulfill their own obligations and take concrete actions to promote the realization of the system of state responsibility. In specific practices, all countries should carry out environmental cooperation in the spirit of fulfilling their obligations. For example, countries should cooperate in the formulation of environmental standards, cooperate in the improvement of environmental impact research and evaluation systems, and cooperate in the exchange of environmental information.

2.3. Establish a sound early warning mechanism and evaluation mechanism for environmental pollution
Perfect environmental pollution warning and evaluation mechanisms are important for early assessment and monitoring of environmental pollution. Scientifically and rationally judge pollution behaviors early in their development and take appropriate measures to prevent them from causing serious consequences. Because of the special nature of environmental damage (which can hardly be restored to the original state), prevention in advance is far more meaningful than compensation when it comes to damaged areas [6].

2.4. Perfecting the fund protection system for transnational environmental damage and state responsibility
Once transnational environmental damage occurs, it will have a very wide impact. With the development of globalization, the earth will become increasingly “small,” and the countries involved in transnational environmental damage will no longer be limited to accident-prone and victimized countries, but gradually expanding to the world, in this social context, the burden of state responsibility often requires a lot of financial support. Therefore, it is necessary to establish and improve relevant financial guarantee systems to ensure that victims who have been harmed by transnational environmental damage can receive timely and adequate compensation, and at the same time, to protect and protect the environment and reduce the scope of influence in the event of transnational environmental damage. First, cross-border environmental damage liability insurance can be established. The purpose of cross-border environmental damage liability insurance is to diversify the risks of cross-border environmental damage caused by hazardous activities and compensate victims in a timely and effective manner. In view of the characteristics of transnational environmental damage, compulsory liability insurance is a major component of the transnational environmental damage liability insurance system. Second, establish and improve the transnational environmental damage compensation fund system. The fund system can provide relief to parts of the traditional relief that cannot be remedied.

3. Influence on current energy situation
Renewable energy is an important component of the global energy system. By early 2013, 127 countries around the world had introduced and formulated renewable energy development policies, with developing countries and emerging economies exceeding 2/3. Investment in renewable energy construction to achieve green economic development has become a common goal of all countries. Compared with the environmental damage caused by traditional one-off energy such as coal and
petroleum, renewable energy, and nuclear energy are of great significance to environmental protection and energy security. However, the utilization and development of this new energy, such as nuclear power, often require high technical support and are accompanied by a certain degree of technical support. However, the pollution problems caused by the new energy development and the corresponding legal protection system are not perfect, and the blame has become a shadow on the heads of countries. The lack of such a system can easily undermine the enthusiasm of countries that cooperate in energy, or exacerbate tensions between countries after the outbreak of pollution problems. Under the current environment, in order to establish a perfect international energy cooperation system and promote the development of green energy, it is inseparable from the perfect mechanism of national liability compensation for transnational environmental damage.

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