

Research on Soft Law Governance of Marine Plastic Pollution

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Abstract: Marine plastic pollution has become a major environmental issue threatening global ecological security. Its cross-regional and mobile characteristics determine the necessity of international cooperation for governance. Soft law, as an important governance tool in the field of international law, plays a crucial role in supplementing rules and promoting cooperation in the governance of marine plastic pollution. This article takes the soft law governance of marine plastic pollution as the research object. By reviewing the core definition and governance theories of soft law, analyzing the current status of soft law practices at the global and regional levels, and dissecting the current practical challenges in governance, this article ultimately proposes specific paths for optimizing soft law and transforming it into hard law. This article strives to provide readers with a systematic and comprehensive understanding.

1. Introduction

Marine plastic pollution has evolved into a global ecological crisis, with hundreds of millions of tons of plastic waste entering the marine ecosystem every year. These marine plastics decompose into microplastics under the influence of ultraviolet radiation and wave impact, and penetrate through the food chain into all aspects of the ecological cycle, posing a serious threat to the marine environment and human health. As a typical cross-border environmental issue, the spread of marine plastic pollution is not restricted by national borders and requires joint governance by the international community.

Currently, in the international governance system, soft law, with its advantages such as simple formulation process, flexible adjustment, and low cost, has become an important means for the governance of marine plastic pollution. However, the inherent non-mandatory nature of soft law also leads to challenges in the effectiveness of governance. Therefore, a systematic study of the theoretical logic, practical status, existing problems, and optimization paths of soft law governance of marine plastic pollution is of great theoretical value and practical significance for improving the global environmental governance system and enhancing the effectiveness of marine plastic pollution governance.

2. Theoretical Basis of Soft Law Governance for Marine Plastic Pollution

2.1. Definition of Soft Law

Soft law generally refers to a rule system that lacks mandatory national enforcement power and needs to be formulated by multiple stakeholders. Soft law achieves its normative goals through voluntary compliance by entities and social supervision. The core feature of soft law is the diversity of its formulation entities, including non-state actors such as international organizations, regional cooperation mechanisms, industry associations, and business alliances, as well as state authorities. The normative form of soft law is flexible, taking various forms such as declarations, initiatives, and action plans. Soft law does not strictly follow the legislative process. In terms of implementation guarantees, soft law is non-mandatory and relies on informal means such as value recognition, reputation mechanisms, and interest incentives to ensure implementation. Soft law differs from hard law that relies on state coercion to ensure implementation. Soft law focuses more on achieving governance goals through consensus building, behavior guidance, and process constraints. Soft law has unique advantages in addressing complex environmental issues across regions^[1]. In the field of marine plastic pollution governance, soft law includes global norms such as the "Clean Ocean" initiative initiated by the United Nations Environment Programme, as well as action frameworks reached through regional cooperation mechanisms. Additionally, it encompasses multi-level rules such as industry self-regulation standards and corporate social responsibility commitments, forming a diversified normative system.

2.2. The Theoretical Basis of Soft Law Governance

The theoretical support for soft law governance of marine plastic pollution deeply aligns with the core principles of international environmental law. These principles form the legal basis for the design and implementation of soft law norms and also provide value guidance for global collaborative governance.

Firstly, the principle of common but differentiated responsibilities. This principle is the cornerstone of international environmental law, emphasizing that all countries, regardless of their wealth or poverty, have a shared responsibility to protect the global environment. However, the responsibility should be treated differently based on factors such as each country's economic development level. The causes of marine plastic pollution are extremely complex. Developed countries generated a large amount of plastic waste during their industrialization process and transferred the risk of plastic pollution through trade and other means. Developing countries, constrained by technology and funds, have relatively weak governance capabilities. The flexibility of the soft law governance model precisely meets the requirements of this principle. On the one hand, through global soft law documents, the consensus for joint governance by all countries is consolidated, and it is clearly stipulated that all countries need to participate in actions such as reducing plastic use and recycling. On the other hand, developing countries are allowed to formulate differentiated implementation paths based on their own national conditions, while soft law provisions with initiative clauses are used to promote developed countries to fulfill their responsibilities through technical assistance, financial support, etc.

Secondly, the principle of risk prevention. This principle requires that before environmental damage occurs, even if the causal relationship between the pollution behavior and the damage consequences has not been fully confirmed by scientific evidence, all countries should take preventive measures to avoid potential hazards. The harm of marine plastic pollution is concealed, long-term, and irreversible. The impact of microplastics on the marine ecosystem and human health still has many scientific gaps that have not been fully explored, but the trend of pollution expansion

is very clear. The formulation of hard law often requires a thorough scientific demonstration as a prerequisite, and the legislative cycle is long, making it difficult to respond quickly to risks. However, soft law does not require strict legislative procedures and can promptly introduce preventive norms based on existing scientific knowledge, such as the initiative proposed by the United Nations Environment Programme on limiting the use of disposable plastics and establishing a monitoring and early warning mechanism. This is a direct embodiment of the principle of risk prevention and has made valuable contributions to global governance.

Finally, the principle of international cooperation. International environmental law clearly regards international cooperation as a necessary means to address cross-border environmental issues and requires countries to collaborate in information sharing and technology transfer. The cross-border mobility of marine plastic pollution determines that the governance actions of a single country are difficult to be effective. Plastic waste can cross borders through ocean currents, trade, etc., resulting in a situation where one country's pollution leads to multiple countries' suffering. Soft law governance is characterized by the participation of multiple entities, breaking the barriers of national sovereignty. In the context of the principle of international cooperation, not only does it promote governments of various countries to carry out joint law enforcement through regional soft law mechanisms, but it also incorporates non-state actors such as international organizations, industry associations, and research institutions to participate in rule-making^[2].

3. The Practice Situation of Soft Law Governance of Marine Plastic Pollution

3.1. Practice Situation at the Regional Level

The EU Marine Strategy Framework Directive was officially adopted in 2008 and is the core soft law document in the field of EU marine environmental protection. The core objective of the EU Marine Strategy Framework Directive is to ensure that all EU sea areas achieve a good environmental status by 2020. It clearly sets the nature and quantity of marine debris as a key evaluation indicator that does not cause harm to the coastal and marine environment. The directive retains the flexibility of soft law in its implementation mechanism, allowing member states to formulate differentiated implementation plans based on their own sea area characteristics. At the same time, it ensures the effectiveness of governance through regular monitoring, assessment, and information sharing mechanisms. Moreover, the directive emphasizes the need for member states to strengthen cross-border cooperation and conduct joint monitoring and joint clean-up actions for cross-border marine plastic waste, and simultaneously promote the coordinated construction of the plastic waste recycling system within the region, in order to break through the key links of integrated land-sea governance and promote the systematic restoration of the marine environment in EU sea areas.

In 2019, ASEAN signed the "ASEAN Framework on Action on Marine Debris" in Bangkok. It is the core soft law document formulated by ASEAN based on the regional marine pollution governance needs. The establishment of the "ASEAN Framework on Action on Marine Debris" marks ASEAN's first collective response to marine plastic pollution issues on a regional organization level. China and the member states of the Association of Southeast Asian Nations are both the core regions for global plastic production and consumption, and are also regarded as key areas of concern for marine plastic pollution. In addressing marine plastic waste, both sides face equally urgent governance needs, and the related actions have always been closely watched by the international community. Undoubtedly, deepening cooperation between China and ASEAN in the field of marine plastic pollution governance will inject crucial impetus and contribute significantly to the global process of marine plastic waste governance. Compared to other soft laws, the "ASEAN Framework on Action on Marine Debris" places greater emphasis on inclusiveness and feasibility,

allowing member states to independently choose implementation paths based on their own capabilities. The "ASEAN Framework on Action on Marine Debris" emphasizes policy dialogue and information sharing among member states, encourages countries to incorporate marine garbage governance into their national environmental policies, and establish cross-border pollution joint prevention and control mechanisms. In terms of capacity building, in response to the significant differences in development levels among ASEAN member states, the "ASEAN Framework on Action on Marine Debris" focuses on promoting technology transfer and experience exchange to help underdeveloped countries enhance their waste management and marine garbage cleanup capabilities. In terms of public participation, the "ASEAN Framework on Action on Marine Debris" advocates enhancing public awareness of marine protection through education and publicity activities, creating a public participation-oriented governance atmosphere.

3.2. Current Practice at the Global Level

The Honolulu Strategy: A Global Framework for Prevention and Management of Marine Debris was jointly led by the United Nations Environment Programme and the National Oceanic and Atmospheric Administration of the United States in 2011. As an important soft law document in the field of marine waste management, it provides a non-binding but guidance-oriented systematic planning framework for countries to jointly respond to the issue. The core objective is to alleviate the damage caused by plastic waste to the marine ecosystem, reduce the potential threat to human health, and minimize the economic losses in related industries such as fishing and tourism. The Strategy clearly sets three core directions. The first is to reduce the inflow of land-based waste into the sea. The second is to reduce marine-based waste. The third is to clean up existing marine waste.

In September 2015, the United Nations Sustainable Development Summit adopted the "2030 Agenda for Sustainable Development", which pointed out the direction for the governance of marine plastic waste. This global agreement, as a non-legally binding soft law document, is based on the common well-being of humanity and provides a unified value guideline and action framework for countries to formulate development strategies and carry out international cooperation. The agenda concisely proposed 17 sustainable development goals, covering key areas such as poverty eradication, climate change response, and environmental protection. It has constructed a comprehensive global blueprint for sustainable development. Among these, the 14th goal clearly sets preventing and significantly reducing various types of marine pollution as a core task. The goal particularly focuses on the global problem of marine plastic pollution and calls on all countries to take systematic measures in aspects such as source control on land, source governance at sea, and clearance of existing pollution, injecting synergy-driven governance momentum into global marine ecological protection and restoration.

4. The Realistic Challenges of Soft Law Governance for Marine Plastic Pollution

4.1. Lack of Mandatory Constraints

Soft law lacks mandatory constraints, making the implementation effect uncertain. The lack of mandatory constraints is the most fundamental difference between soft law and hard law, and it is also the first challenge it encounters in governing marine plastic pollution. From a legal perspective, soft law documents such as the "EU Marine Strategy Framework Directive" and the "Honolulu Strategy" in the field of marine plastic pollution can only be implemented based on the voluntary commitment of the participating parties, and there are no legal penalties or accountability measures. During actual implementation, the plastic waste recycling targets, plastic restriction and reduction standards, and microplastic monitoring tasks required in the soft law often become moral

responsibilities or industry self-discipline requirements for the participating parties. Essentially, there is no mandatory constraint for marine plastic pollution governance. For sovereign states, if they strictly abide by the provisions of soft law, they need to invest a large amount of governance funds. Or the governance process may conflict with their own industries and economic interests, and then the country is likely to lower the implementation standards or even abandon the relevant provisions^[3]. For enterprises and other market entities, the requirements in the soft law such as green production and reduction of plastic use are not linked to serious consequences. Enterprises, in pursuit of maximum profits, are likely to have situations where they ostensibly comply but actually do not implement. This execution method without mandatory guarantee makes the governance effect of soft law particularly unstable. This leads to an unbalanced situation in global marine plastic pollution governance, where some regions manage well while others remain unmanaged.

4.2. Ambiguous Content of Soft Law

Soft law generally has the problems of ambiguous content and a large space for interpretation, which weakens the normativity and operability of soft law governance. In the formulation of soft law documents regarding marine plastic pollution, to accommodate the development levels and governance capabilities of different countries, the provisions are often limited to principles. These issues leave a large degree of flexibility for the interpretation and implementation of the clauses. On one hand, in the definition of key concepts, there is no unified standard for soft law. For example, for degradable plastics in pollution sources, there are still no clear unified degradation conditions and detection standards, as well as how to be considered environmentally harmless. Due to the unclear definition of concepts related to marine plastic pollution governance, it directly leads to different countries and regions not having a unified standard when monitoring plastic pollution and assessing the effectiveness of governance. The data on marine plastic pollution among different countries cannot be recognized and recognized mutually, and thus a precise global assessment system for marine plastic pollution cannot be established. On the other hand, when stipulating responsibilities and obligations, soft law often uses vague expressions such as "reasonable reduction" and "active promotion", rather than specific indicators. For example, some soft laws only require contracting parties to gradually reduce the proportion of disposable plastics, but do not specify how much to reduce each year, when to complete it, or what standards to use for assessment. Regarding the control of cross-border transfer of plastic waste, only a principle of strengthening information notification is required, without specifying who is responsible, what specific regulatory process to follow. Such ambiguous expressions, although allowing more countries to accept soft law and expanding its application scope, seriously reduce its normativity and operability. Participants can interpret the clauses differently based on their own interests and even exploit loopholes to evade responsibility, resulting in the inability of soft law to form a unified governance model in practical application, and the governance effect being greatly reduced.

4.3. Too Many Participants

The entities involved in addressing marine plastic pollution are numerous, including sovereign states, international organizations, and non-governmental organizations, among others. Coordinating among these entities regarding marine plastic pollution governance requires a significant amount of cost. From the perspective of the participants, for instance, international institutions such as the United Nations Environment Programme, the International Maritime Organization, and regional marine convention organizations have all issued soft law documents on marine plastic pollution. The governance focuses of these documents vary. The soft law of the United Nations Environment Programme is more inclined towards global-level policy coordination

and framework establishment, while the documents of the International Maritime Organization mainly cover plastic waste generated by ships, and the soft law of the regional marine convention organizations better meets the governance needs of specific sea areas. These soft law documents led by different entities lack effective connection methods, which makes the implementation process complex and affects the efficiency of governance. At the same time, sovereign states and non-governmental organizations also formulate their own soft law norms from their own positions, such as voluntary plastic reduction initiatives at the national level and plastic recycling standards of industry associations. These norms further exacerbate the chaos of the governance system. From the perspective of the coordination mechanism, the interests and demands of different entities vary greatly. Developed countries hope to set strict plastic pollution control standards through soft law to promote global unified governance. Developing countries are more concerned about who will bear the governance costs, whether technical support can be obtained, and advocate formulating different governance plans based on their own development levels. Non-governmental organizations emphasize stricter environmental protection standards and public participation. Due to the absence of an authoritative coordination institution, it is difficult for each entity to reach consensus in the implementation, supervision, and evaluation of soft law, and even shift the blame onto each other. For example, in the governance of cross-border plastic waste transfer, the waste-exporting countries and the waste-importing countries often argue fiercely over issues such as responsibility division and governance funding. This coordination problem among the entities makes the soft law governance of marine plastic pollution unable to form a systematic synergy and cannot build a complete chain governance system for marine plastic pollution^[4]. Ultimately, it limits the improvement of governance effectiveness.

5. Optimization Path for Soft Law Governance of Marine Plastic Pollution

5.1. Establish a Constraint Guarantee Mechanism

Soft law lacks legal coercive force, but it does not mean that it can only rely on voluntary compliance. We can transform mature soft law into hard law by making it more stringent. On one hand, we can upgrade the mature and effective rules in soft law into legally binding hard law provisions. For example, regulations on the monitoring scope of marine microplastics can be upgraded into legally binding hard law provisions. Once written into law, they will have mandatory force. Those who do not comply will be subject to penalties. Conversely, those governance requirements that cannot reach a consensus temporarily can be piloted in a small scope in the form of soft law. Once the conditions are ripe, they can be transformed into hard law. This approach is more gradual and stable. On the other hand, the participating countries should establish visible reward and punishment mechanisms. The participating countries should regularly disclose the progress of governance, such as how much plastic reduction has been achieved and whether there has been illegal transfer of waste. Then, a third-party institution can assess it, and finally, the results should be made public. For those who do well, priority support will be given in international cooperation projects. For those who merely talk without taking action and are perfunctory, pressure can be exerted through public exposure and other means, using real benefits to guide everyone to actively fulfill their responsibilities.

5.2. Clarify Content and Standards

The issue of overly general content in soft laws exists. The core solution to this problem is to make the rules clear and easy to implement. First, the standards for key concepts need to be unified. This can be led by authoritative institutions such as the United Nations Environment Programme

and the International Maritime Organization, clarifying the inconsistent concepts that arise in the governance of marine plastic pollution. This way, when various countries collect data and conduct monitoring, there will be a unified approach, and there will be no disputes over different interpretations. Secondly, vague requirements should be transformed into quantitative indicators. The law should clearly stipulate how much reduction in the use of disposable plastic products should be achieved each year, what procedures should be followed for cross-border waste transfer, and who should bear the responsibility. For example, regarding ship plastic waste, the law should directly specify the collection rate that needs to be reached and the requirement for transporting the waste to the shore within a certain period of time. Finally, operational manuals should be issued to complement the soft laws. Enterprises and regulatory agencies can immediately know the specific steps and procedures, completely solving the problem of ineffective implementation^[5].

5.3. Building a Cooperation Platform

The excessive number of participants in the governance process has led to the inefficiency of marine plastic pollution control. The key to solving this problem is to establish a coordinated system. First, a specialized global coordination agency for marine plastic pollution control should be established. This can be led by the United Nations, and a soft law governance coordination committee for marine plastic pollution can be formed, including the United Nations Environment Programme, the International Maritime Organization, and various regional marine convention organizations. This agency is responsible for sorting out existing soft law documents, resolving conflicts in the terms, and formulating a unified governance framework. Second, strengthen regional-level collaborative cooperation. Neighboring coastal countries can cooperate and formulate regional soft law supplementary agreements based on the pollution situation in their respective sea areas. For example, they can jointly conduct monitoring, share information on the transfer of plastic waste, jointly combat illegal dumping of waste, and make the governance more relevant to reality. Third, open up channels for participation at the national and social levels. The government should translate the requirements of soft laws into domestic policies. Only by working together can we contribute the greatest strength to marine plastic pollution control.

6. Conclusion

In conclusion, the soft law governance of marine plastic pollution, due to its flexibility and inclusiveness, has become an important component of the global environmental governance system. Soft law has played an irreplaceable role in building consensus and promoting actions. Although the current practice of soft law governance of marine plastic pollution at the global and regional levels has achieved certain progress, it still faces challenges such as insufficient binding force and fragmented governance. The transformation of soft law into hard law is an important direction for improving the governance system, but this process needs to take into account the development needs of different countries and avoid excessive coercion that may trigger resistance in governance. In the future, the soft law governance of marine plastic pollution will continue to seek a balance between flexibility and binding force, providing a feasible path to enhance the effectiveness of global marine plastic pollution governance. The ultimate effect of this path will depend on the joint collaboration and long-term investment of the international community.

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