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Enforcement of marine environmental law against marine pollution from land-based sources in China

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Serious marine pollution has posed significant challenges to both the theory and practice of China's marine environmental law enforcement. The entry into force of the revised Marine Environment Protection Law of China provides an opportunity to examine how China enforces marine environmental law to prevent harmful consequences of land-based marine pollution and protect marine rights and interests. This article begins with a discussion of the legal authorities responsible for marine environmental law enforcement in China, based on specific indicators, and then focuses on relevant jurisdictional issues, including jurisdictional waters of China and the exercise of such jurisdiction. Additionally, the article discusses the resolution of disputes arising from enforcement actions against marine pollution from both domestic and international legal perspectives.

KEYWORDS

marine environmental law enforcement, marine pollution from land-based sources, coast guard agencies, enforcement dispute settlement, compulsory conciliation

1 Introduction

Maritime law enforcement encompasses a wide range of activities across multiple domains (Pei, 2016) (pp.132). It involves specialized agencies tasked with enforcing maritime laws, exercising their statutory authority to protect the state's various maritime rights and interests in accordance with the law (Li and Xiong, 2022) (pp.1), and it also involves legal provisions at both the domestic and international levels (Kwast, 2008) (pp.54). The enforcement of marine environmental law is one aspect of maritime law enforcement (Cui, 2022) (pp.60). It refers to activities aimed at maintaining and improving the quality of the marine environment. This includes preventing and penalizing illegal dumping at sea, unauthorized discharge outlets, excessive pollutant discharges, fishery-related pollution, and non-compliance with environmental impact assessment reports for construction projects. Administrative measures are considered fundamental for implementing environmental laws and encouraging compliance, and they are often more efficient than civil and criminal penalties (Zhu, 2017) (pp.76).

The enforcement of marine environmental laws is significantly constrained by natural factors such as hydrological and meteorological conditions. The interconnected nature of the ocean, and the ambiguity of marine boundaries facilitate the occurrence of illegal activities across various sea areas. As a result, substantial challenges arise in detecting and identifying illegal activities, investigating and collecting evidence, and apprehending suspects. Most importantly, the consequences of such illegal activities can transcend the boundaries of coastal states, affecting neighboring and even distant regions. These challenges are most acutely manifested in the enforcement of marine environmental law against marine pollution from land-based sources.

Marine pollution from land-based sources (MPLBS) is caused by pollutants originating from land-based activities. The 1974 Convention for the Prevention of Marine Pollution from Land-based Sources defines MPLBS as follows:

Pollution of the maritime area (i) through watercourses; (ii) from the coast, including introduction through underwater or other pipelines; and (iii) from man-made structures placed under the jurisdiction of a Contracting Party within the area to which the present Convention applies (Convention, 1974).

Pollutants from land-based sources constitute main source of marine garbage, according to 2024 China Ecological Environment Status Bulletin, in jurisdictional waters of China, the average number of floating garbage on the sea is 87 per square kilometer, with plastic garbage accounting for 90.8%, followed by wooden products and paper products, accounting for 4.9% and 2.0% respectively. The average number of beach garbage is 59710 per square kilometer, with plastic garbage accounting for 85.6%, followed by paper products and glass, accounting for 5.2% and 2.6% respectively. The average number of underwater garbage is 5051 per square kilometer, with plastic garbage accounting for 94.5%, followed by wooden waste accounting for 4.1% (Ministry of Ecology and Environment of China, 2024) (pp.81).

In addition, in 2024, the total discharge of sewage from 457 direct discharge sources into the sea is approximately 7955.98 million tons. Among them, comprehensive pollution sources have the highest discharge of sewage, followed by industrial pollution sources, and domestic pollution sources have the lowest discharge (Ministry of Ecology and Environment of China, 2024) (pp.89).

In practice, a typical example of MPLBS is the spread of pollutants caused by illegal ocean discharges. The Fukushima nuclear incident, which occurred in 2011, was one of the two most severe nuclear disasters in history. It was classified at level 7—the highest level—indicating “a major release of radioactive material with widespread health and environmental effects” (IEEE Spectrum, 2011).

In the early stages of the incident, there was a leak of nuclear materials into the surrounding sea areas (IAEA, 2014). The international community did not harshly blame Japan due to the *force majeure* caused by earthquakes and tsunamis which led to the nuclear material leaks (Hasegawa et al., 2016) (pp.237). However, this disaster was exacerbated by Japan's subsequent discharge of

contaminated water into the ocean. On April 13, 2021, Japan announced the Basic Policy on the Handling of Radioactive Water Stored at the Fukushima Daiichi Nuclear Power Station (the Policy) (The Government of Japan, 2021), and decided to discharge the contaminated water into the sea subject to domestic regulatory approvals (IAEA, 2021). The Policy also announced a plan to treat the radioactive water using the Advanced Liquid Processing System (ALPS) before its release, as reported by Tokyo Electric Power Company (TEPCO) (IAEA Report 1, 2022).

So far, Japan's discharge of contaminated water has been a major concern for the international community. Japan and the International Atomic Energy Agency (IAEA) signed the Terms of Reference for IAEA Assistance to Japan in Reviewing the Safety Aspects of ALPS-Treated Water at TEPCO's Fukushima Daiichi Nuclear Power Station (the Reference) (IAEA Report 2, 2022). By monitoring and reviewing the ALPS plan and the relevant activities, the Reference aims to ensure that they conform to the international safety standards recognized by the IAEA.

There has been widespread concern that the discharge of contaminated water could have profound impacts on the oceans and adjacent coastal states. It has been stated that radioactive elements, such as tritium, in the discharged water will adversely affect marine biological resources and seawater quality in China and other states (Ren and Niu, 2022) (pp.62). It has also been argued that Japan's discharge of contaminated water contravenes the basic obligations of State Parties under the United Nations Convention on the Law of the Sea (UNCLOS) (UNCLOS, 1982). Japan decided to proceed without consulting potentially affected states in accordance with Article 210(5) (Guan and Wang, 2022) (pp.19). If adverse impacts can be proven and confirmed based on adequate evidence, issues related to the enforcement of China's marine environmental law will arise. Besides legal authorities and scope limitations of enforcement, the appropriate agencies authorized to carry out enforcement also deserve discussion. When disputes occur during environmental enforcement, how to settle them peacefully merits attention. The Marine Environment Protection Law of China (MEPL) (Chinese Law, 2024) was revised and adopted on October 24, 2023, and came into force on January 1, 2024. It establishes the legal basis for the enforcement of marine environmental law against MPLBS and provides responses to these issues.

2 Legal authorities

Regarding MPLBS combat, the international community seems to face a dilemma: on one side, international law can have transnational legal effects, though there lacks of a complete international legal framework regulating MPLBS. On the other side, domestic laws have relatively complete provisions but no extra-jurisdiction over MPLBS occurred within territories of other states. In fact, the advantages of international and domestic law can be combined to provide effective regime for MPLBS control. If the authority of a state's domestic marine environmental law can be justified as consistent with international law, state can enforce its domestic marine environmental law against MPLBS within its

jurisdictional waters. The jurisdictional waters can be identified based on domestic law as long as it is conformity with international law.

China's authority to enforce its marine environmental laws derives from state sovereignty and can be justified by satisfying three criteria: first, the prevention of marine nuclear pollution is explicitly established by international law; second, China's marine environmental law enforcement authorities are stipulated in relevant domestic laws that conform to international law, including treaties to which China has acceded and generally binding customs; third, enforcement against marine pollution safeguards China's practical interests and prevents further harm.

2.1 Prevention of MPLBS under UNCLOS

A state is primarily responsible for maintaining the safety of its people's lives, property, and environment, and secondarily for preventing possible transboundary damage (Guo, 2021). Based on judicial practices, notably the 1949 *Corfu Channel Case* (Corfu Channel) and the 1957 *Lake Lanoux Arbitration* (Lac Lanoux Arbitration, 1957), the no-harm principle—which prohibits states from discharging harmful substances into the sea if they are likely affect another state—has existed in customary international law since 1957 (Seo, 2021) (pp.58).

Because of its transboundary and international feature, MPLBS should be regulated under international legal regime. Nevertheless, *status quo* is lack of a specific worldwide international treaty for MPLBS control. As a result, only some universal conventions, the UNCLOS primarily, and rules of customary international law concerning general issues of marine environment protection could be applicable. They have settled fundamental duties of states to prevent and control marine pollution from any sources based on the consciousness of human community with a shared future.

As the constitution of the law of the sea (Koh, 1983), UNCLOS establishes the fundamental principle of protecting the marine environment and preventing any pollution of the ocean. In other words, regarding marine environmental issues, the primary general and applicable international treaty is UNCLOS, especially Part XII, which addresses the protection of the marine environment (Kim, 2021) (pp.253). Sovereign states have the right to utilize marine resources, but these rights are limited to protect the marine environment (Hu and Li, 2022) (pp.67). Indeed, UNCLOS, regarded as the most important and comprehensive international environmental agreement in existence, has had a symbiotic relationship with the development of international environmental law in general (Fayette, 2001) (pp.157).

Part XII of UNCLOS focuses on not only MPLBS, but generally on protection and preservation of marine environment. Articles 192 to 206 firstly set general obligation of member states to prevent, reduce and control of marine pollution from any sources. Article 192 stipulates the general obligation of State Parties, more detailed obligations are listed in Article 194, divided into three categories: first, State Parties must take all measures, including the best

practical means, to prevent, reduce and control pollution of the marine environment from any source; second, State Parties should refrain from conducting activities under their jurisdiction or control that cause pollution damage to other states and their environments; third, State Parties have a duty to take measures to address all sources of marine environmental pollution, primarily the release of persistent harmful or toxic substances from land-based sources. Article 194 (3)(d) specifies that the discharge of toxic and harmful substances from land and the discharge of nuclear-contaminated water containing radioactive substances into the ocean must be prevented. Based on Article 207 and other relevant articles under UNLOCS, any State Party is obligated to protect and preserve the marine environment, and cooperate with neighboring states and international organizations in regulating the discharge of land-based pollutants into the ocean. More importantly, Article 195 establishes the duty not to transfer damage or hazards, nor to transform one type of pollution into another type.

In taking measures to prevent, reduce, and control marine environmental pollution, states must act to avoid transferring, directly or indirectly, damage or hazards from one area to another [area] or transforming one type of pollution into another [type].

Furthermore, the obligation of State Parties to conduct environmental assessments also deserves attention. Environmental assessment under UNCLOS is an obligation undertaken by states planning to implement activities (Dong, 2022) (pp.85). According to Articles 204(1) and 206, the environmental assessment obligations of member states become clear and specific. First, if the ongoing or planned activities of one state may cause significant marine environmental damage, that state is required to conduct an environmental assessment in consultation with other relevant coastal states, provided all involved states are UNCLOS members. Second, if activities controlled by one UNCLOS State Party cause serious marine environmental damage on the high seas or in marine areas outside national jurisdiction, the state must fulfill the obligation to conduct an environmental assessment. Third, states must publish reports of the results of such assessments to all states under Article 205.

It is obvious that these provisions establish the fundamental obligations of member states to protect marine environment and refrain from discharging and dumping pollutants to ocean. However, these provisions are too general and vague to guide states. UNCLOS does not provide a complete legal framework for MPLBS control; furthermore, more maneuverable framework would depend on future progress that is not predictable.

In fact, it is not true that UNCLOS does not provide any provision specifically regulating MPLBS. Article 207 introduces member states' duties of MPLBS control, including adopting domestic laws, establishing international rules and take necessary measures to reduce, prevent and control MPLBS. However, this provision is till vague and imprecise. Although this provision is far away from ideal legal framework of MPLBS combat, it still provides legal sources for member states implementing their domestic laws to control MPLBS and punish violations, as long as their domestic laws are consistent with their international obligations.

2.2 Consistency between domestic and international law

The MEPL was adopted within the framework of international law, and its contents are consistent with international law. The purpose of the MEPL, as stated in Article 1, is to “protect and improve the marine environment, conserve marine resources, prevent pollution damage, guarantee ecological security and public health, and safeguard the state’s marine rights and interests. “This law further develops and clarifies the responsibilities of the ecological environment management departments regarding marine environmental protection (Wang and Duan, 2019) (pp.20).

The MEPL proposes “land-sea coordination and comprehensive governance” as a basic principle, strengthening institutional coordination in planning, and standardizing monitoring systems between land and sea (Ministry of Ecology and Environment of China, 2023). It consolidates departmental and local responsibilities, clarifies the division of duties, and improves institutional mechanisms (Maritime Safety Administration of China, 2023). Under the MEPL, different regulations and solutions are provided for various types of marine pollution, with a focus on prominent issues, pollutant emissions control, and prevention of marine garbage pollution (Sina News, 2023).

Regarding the discharge of contaminated water, Article 46 of the MEPL requires that the discharge of land-based pollutants into the sea strictly comply with state or local standards and relevant regulations. “Land-based pollutants” are defined, according to Article 120, as pollutants discharged from land-based sources that cause or may cause marine environmental pollution. Furthermore, Article 51 prohibits the discharge of radioactive wastewater into any sea area in a manner that pollutes the marine environment and damages marine ecology. The term “discharge” is defined as acts of draining pollutants into the sea by dumping, spilling, releasing, gushing, or pouring activities.

Based on these articles, the discharge of land-based pollutants, especially contaminated water from land into the sea, constitutes a violation of the MEPL. However, the most challenging issue is whether the MEPL is applicable if the contaminated water is discharged from the land of other states rather than China. This issue actually turns back to the classic relationship between international law and domestic law. International law could be implemented beyond national borders, but domestic law can only be effectively within the territory of a state. a legal link should be established to extend legal effects of a state’s domestic law beyond its boundary. Article 2 of the MEPL provides such link. According Article 2, the MEPL applies to sea areas under China’s jurisdiction. In other words, the MEPL is applicable to marine pollution and ecological damage occurring within China’s jurisdictional sea area, even if they originate outside China. More importantly, Article 123 of the MEPL emphasizes that marine environmental protection treaties to which China is a party shall take precedence if the provisions conflict with relevant articles of the MEPL, except for provisions China has reserved.

2.3 Protecting state interests and preventing further injuries

The enforcement of marine environmental law by coastal states is authorized by domestic law in harmony with international law and reflects the necessity of protecting state interests and preventing further harmful consequences of marine pollution, regardless of whether the pollution is caused by national or foreign individuals, vessels, or institutions.

The definition of “pollution damage to the marine environment” in MEPL Article 120(1) illustrates the harmful consequences of marine pollution to coastal states, including:

any direct or indirect introduction of substances or energy into the marine environment resulting in deleterious effects such as harm to marine living resources, hazards to human health, hindrance to fishing and other legitimate operations at sea, impairment of seawater quality, and degradation of environmental quality.

The global ecosystem is closely interconnected, and the causal chain of environmental hazards is complex, making cross-border pollution control difficult (Pan, 2021) (pp.79). Discharge of pollutants from land into the ocean affects global fish migration, offshore fishing, human health, ecological security, and other aspects (Mei et al., 2023). Marine pollution not only constitutes a violation of international law but also fundamentally infringes on China’s marine rights and interests. However, proving causality in cross-border environmental pollution damage has always been difficult, and with the special nature of nuclear pollution, determining causality is even more challenging (Zhang, 2022) (pp.112).

Therefore, international law has established legal principles and specific obligations for states to prohibit marine pollution in all its forms, including MPLBS. These rules are also stipulated and reflected in Chinese domestic law. The enforcement of these rules against MPLBS ensures China’s national interests and prevents future harmful consequences.

3 Jurisdiction and jurisdictional waters

Besides legal authorities, China’s jurisdiction over marine environmental law enforcement against MPLBS should be clearly defined. More specifically, it should also be clarified in which marine areas such enforcement can be exercised.

3.1 Jurisdiction of China

The marine environment, in relation to activities at sea or on the seabed, involves states exercising jurisdiction over those activities within their maritime jurisdictional competence (Morris, 2021) (pp.118). China’s jurisdiction over marine environmental protection against marine pollution can first be established based on the territorial principle.

According to this foundational principle for determining state jurisdiction, if it can be proven that illegal conduct occurred within a state's territory, that state may exercise territorial jurisdiction. The effects doctrine further distinguishes between active and passive territoriality (also referred to as subjective and objective territoriality) (Szigeti, 2017) (pp.379). Subjective territoriality refers to an act or event occurring within a state's territory. Under this principle, the state where the offense is committed has jurisdiction. Conversely, objective territoriality refers to an act or event that occurs outside the state's territory but has effects within it. The objective territoriality principle asserts that a state has jurisdiction where the offense is completed and its effect are felt. This principle "establishes the jurisdiction of the state to prosecute and punish for crimes commenced outside the state but consummated within its territory (Buxbaum, 2009) (pp.638)".

States typically adopt different territorial principles and criteria to determine whether illegal conduct has occurred within their territory, thereby establishing jurisdiction. Uniquely, China adopts both active and passive territoriality. In Chinese domestic law, the "place of infringement" includes both the location where the infringing act was committed and the location where its consequences occurred. A clear example of this is Article 6 of the Chinese Criminal Law (Criminal Law, 2024), which states that when either the act or its consequence occurs within Chinese territory, the crime is deemed to have been committed within China, thereby justifying Chinese jurisdiction.

This approach is also reflected in the MEPL. Article 2 affirms China's jurisdiction over environmental pollution and ecological damage not only in waters under its jurisdiction but also in certain situation beyond it. The MEPL applies to China's internal waters, territorial sea, exclusive economic zone (EEZ) and continental shelf, as well as all other sea areas under China's jurisdiction (Zou and Zhang, 2017) (pp.254). Specifically, China may exercise jurisdiction under the MEPL in the following three scenarios:

1. Navigation, exploration, exploitation, production, tourism, scientific research, or other activities conducted by entities and individuals within waters under China's jurisdiction. Regardless of whether these activities have already caused environmental pollution, China has jurisdiction as long as they occur within its jurisdictional waters. In other words, the establishment of jurisdiction within China's maritime territory does not require that pollution has actually occurred. The MEPL performs a dual function supervising and penalizing marine pollution.
2. Operations on coastal land that result in marine environmental pollution or ecological damage. These activities may not occur directly in the ocean but originate on land. However, due to their impact on the marine environment, they fall under the regulation of the MEPL. In fact, even without explicit MEPL provisions, China can still assert jurisdiction under other relevant domestic laws based on the principle of territorial jurisdiction.
3. Activities conducted outside the waters under China's jurisdiction that cause marine environmental pollution or

ecological damage within those waters. This provision effectively establishes China's extraterritorial jurisdiction. It aligns with the principle of protective jurisdiction, which allows a state to assert jurisdiction over acts committed abroad (Staal, 1961) (pp.428). When those acts harm the state's vital national interests. This means that, in addition to territorial jurisdiction, China can also invoke protective jurisdiction in the context of marine environmental protection.

To sum up, the MEPL should be applied within the waters under Chinese jurisdiction, as stated in Article 2. All activities within these jurisdictional waters must be supervised and regulated. Meanwhile, the MEPL is also applicable to activities that take place in coastal areas or beyond China's jurisdictional waters if such activities cause, or may cause marine pollution or ecological damage within waters under China's jurisdiction. As stipulated in Article 31 of the MEPL, if environmental pollution or ecological damage in a sea area under China's jurisdiction is caused, or is likely to be caused by activities outside of China, the relevant departments and agencies have the authority to take necessary measures. This principle is further confirmed by Article 12(10) of the China Coast Guard Law (CGL) (Chinese Law, 2021), which states that, in accordance with Chinese laws and the international treaties to which China is a party, relevant law enforcement tasks may also be carried out beyond the China's jurisdictional water.

3.2 Chinese jurisdictional waters

Enforcement jurisdiction can be established and justified; however, its practical implementation remains subject to objective factors such as state sovereignty, territorial boundaries, state territory, and jurisdictional waters. Therefore, certain conditions must be met to exercise enforcement jurisdiction. The means of enforcement may include direct law enforcement targeting the violator, or indirect enforcement involving actions taken against assets located within China's territory, particularly after obtaining a court judgment.

In general, enforcement jurisdiction over MPLBS derives from China's broader jurisdiction over marine environmental protection, and reflected in the concrete responsibilities prescribed in relevant domestic legislation.

The CGL explicitly grants enforcement jurisdiction to the Coast Guard Agencies (CGAs). According to Article 12 (6), CGAs are responsible for:

Conducting supervisory inspections of marine engineering construction projects, marine pollution damage caused by waste dumping, and the protection and use of the seaward side of nature reserves' coastlines; investigating and punishing violations; and participating in the emergency response and investigation of marine environmental pollution incidents, within their scope of authority.

Additionally, Article 3 of the CGL provides that CGAs undertake maritime rights protection and law enforcement

activities on and over waters under China's jurisdiction. Thus, enforcement jurisdiction should be exercised and implemented within China's jurisdictional waters.

The term "waters under the jurisdiction of China" (or "jurisdictional waters") is not only used in the MEPL and CGL, but also appears in laws such as the Maritime Traffic Safety Law of the People's Republic of China (Chinese Law, 2016). Based on provisions in Chinese domestic law and existing state practice, it can be inferred that jurisdictional waters include China's internal waters, territorial sea, contiguous zone (for specific regulatory matters), and the EEZ under certain circumstances.

The current legal regime balances the freedom of navigation with a wide range of functional jurisdictional powers that coastal states may exercise, including over foreign vessels under certain conditions (Kwast, 2008) (pp.53). Since internal waters and the territorial sea are part of a state's sovereign territory, China's marine environmental enforcement agencies are fully entitled to exercise jurisdiction directly over entities responsible for discharging nuclear-contaminated water into the sea (Articles 2 and 8 of UNCLOS). In such cases, both the responsible entities and their assets located within China's internal waters and territorial sea may become subjects of enforcement jurisdiction.

However, enforcement jurisdiction in the EEZ can be more controversial. The EEZ is a maritime zone established by the UNCLOS to balance coastal states' economic rights—especially over natural resources—with the navigational rights of other states. The rights of coastal states in the EEZ are therefore tempered by legal limitations (Zhang and Xie, 2023). As one scholar has noted, "The EEZ is governed by an artificially created regime that requires striking a delicate balance between coastal state interests in conserving and managing natural resources and the interests of other states in traditional navigational freedoms" (Shearer, 1998) (pp.436).

According to Article 56(1)(b) of UNCLOS, in the EEZ, a coastal state has jurisdiction regarding the protection and preservation of the marine environment. To this end, coastal states are entitled to formulate and enforce domestic laws and regulations, including those that address land-based marine pollution, as provided in Article 207. When a state fails to fulfill its obligations under UNCLOS to protect the marine environment from land-based sources of pollution, it is considered to be in breach of international law (Jesus, 2023) (pp.1010). Correspondingly, Article 213 of UNLOS obliges states to enforce their domestic laws and adopt appropriate regulations to implement international rules and standards to prevent, deduce, and control MPLBS.

To give effect to UNCLOS, China adopted the Law on the Exclusive Economic Zone and the Continental Shelf of People's Republic of China (Chinese Law, 1998). Under Articles 1 and 2, China exercises sovereign rights and jurisdiction over its EEZ, extending 200 nautical miles from the baselines, in order to protect national marine rights and interests. Article 3 echoes Article 56(1)(b) of UNCLOS, providing that China has exclusive jurisdiction over the protection and preservation of the marine environment in its EEZ. Furthermore, Article 10 explicitly authorizes China to take all necessary measures to prevent,

reduce and control marine pollution within its EEZ. Therefore, the EEZ can be understood as falling within the jurisdictional waters of China for the purpose of marine environmental protection. Accordingly, marine environmental laws should be enforced in this zone as well. A one legal scholar puts it, "The existence and development of this legal concept itself is an objective legislative fact" (Cheng, 2021) (pp.101).

3.3 Exercise of jurisdiction

The enforcement jurisdiction and the agencies responsible have been stipulated in both the CGL and MEPL. These two domestic laws collectively address enforcement issues related to MPLBS, covering both substantive and procedural dimensions. The MEPL provides that acts causing marine environmental pollution within China's jurisdictional waters fall under China's jurisdiction. In contrast, the CGL establishes a maritime administrative law enforcement framework with features resembling those of a maritime police force. Although both laws clearly specify the responsibilities, enforcement measures, and procedures, the CGL affirms that the enforcement authority, as granted by domestic law and consistent with international law—and arising from China's jurisdiction—shall be exercised by Chinese CGAs.

China implements an environmental protection management system that combines the overall coordination of environmental protection by administrative departments with the specific responsibilities of other relevant departments (Yu, 2022) (pp.18). Relevant maritime departments and agencies in China may exercise their enforcement powers under UNCLOS within the scope prescribed by domestic laws, in accordance with their respective mandates (Duan and Qu, 2019) (pp.669). Over the course of China's maritime law enforcement development, enforcement agencies and their authorities have undergone significant adjustments and transformations.

The Coast Guard Law of China (CGL) was adopted and entered into force on February 1, 2021. The promulgation of this law marked the completion of reforms to China's maritime law enforcement agencies, ushering in a new era of clearly defined authorities and responsibilities. The CGL clarifies the organizational and command structure, enhances mechanisms for safeguarding maritime rights and conducting law enforcement, and implements measures to ensure effective performance of duties (Li, 2023) (pp.69).

According to Article 2 of the CGL, CGAs—including the China Coast Guard and its various units under the Chinese Armed Police Force—shall uniformly perform the duties of maritime rights protection and law enforcement. The institutional rules governing the CGAs, including their powers, responsibilities, tasks, and the use of police equipment and weapons, have been established. As noted, "There is no doubt that the CGL is a comprehensive law governing maritime rights protection and law enforcement" (Zhang, 2021) (pp.5).

Under the CGL, the CGAs, under the leadership of the Central Military Commission and endowed with strong enforcement capacity, undertake comprehensive responsibilities for maritime

rights protection and law enforcement. These include general maritime administrative law enforcement, criminal law enforcement, and foreign related maritime rights protection (Chen and Bai, 2023) (pp.105). This comprehensive mandate provides the CGAs with professional advantages in marine environmental protection and related supervision.

A systematic framework for maritime law enforcement powers concerning the protection of the marine ecological environment has been established (Xiang and Lv, 2023) (pp.94). According to Article 5 of the CGL, the responsibilities of CGAs include protecting the marine ecological environment, and preventing, halting, and punishing illegal and criminal activities at sea. The revised MEPL authorizes the CGAs to conduct supervisory inspections of pollution damage to the marine environment caused by the dumping of wastes into the sea, and to carry out investigations and penalties for such violations. It also authorizes their participation in emergency response, and the investigation and handling of marine environmental pollution accidents.

As the main enforcement force of marine environmental law, CGAs have achieved significant enforcement efficacy. In 2024, CGAs made great effort to improve the level of legal and standardized construction of maritime law enforcement, ensuring the safety and stability of the jurisdictional waters. Throughout the year, 19700 effective calls were received and handled, an increase of 11.6% year-on-year, and 5668 cases were investigated and handled, an increase of 0.35% year-on-year (China Coast Guard, 2025).

According to Article 3 of the MEPL, marine environmental protection shall follow the principles of prioritizing protection, emphasizing prevention, controlling pollution at the source, and enforcing accountability for environmental damage. Under these principles, the powers regarding marine environmental law enforcement granted to the CGAs under Article 4 of the MEPL can be categorized into three areas: investigating and preserving evidence of pollution, punishing violations, and managing pollution accidents. These authorities are also reflected in relevant provisions of the CGL.

CGAs are authorized to conduct supervisory inspections of marine pollution damage caused by dumping of wastes, as stipulated in Article 12(6) of the CGL. Additionally, Article 23(2) of the CGL affirms the right to supervise and inspect maritime production and operation sites in accordance with laws and regulations on marine environmental protection.

Article 30 of the MEPL allows supervisory and administrative agencies responsible for marine environmental protection to seal or impound vessel, facilities, equipment, or related items if serious marine environmental pollution or ecological damage has occurred or may occur, or if relevant evidence might be destroyed or concealed. This provision corresponds to Article 24 of the CGL, which authorizes CGAs to board, inspect, intercept, or pursue vessels when necessary for administrative law enforcement. Furthermore, Article 25 of the CGL empowers CGAs to designate temporary maritime warning zones in waters under China's jurisdiction to restrict or prohibit the passage or stay of vessels and personnel in order to protect the marine environment.

As provided in Article 12(6) of the CGL, CGAs are empowered to punish violations within the scope of their duties. Article 23(1)

further clarifies that violations of laws, regulations, or departmental rules related to marine environmental protection may be subject to administrative punishment and administrative compulsion, introducing the application of administrative penalties in marine environmental enforcement. Under Chinese administrative law, such punishment and compulsion may include restrictions on personal liberty, fines, and other forms of administrative sanctions.

Moreover, as coast guard units of the People's Armed Police Force, as stipulated in Article 2 of the CGL, CGAs may exercise coercive powers in maritime law. However, depending on the nature of maritime law enforcement activities, the use of force or weapons should be classified as police force rather than military force (Wang and Jing, 2023) (pp.52). Unlike military-type coast guards, paramilitary coast guards are considered a civilian service (Kim, 2020) (pp.11).

In 2024, in order to actively accomplish the rectification of marine resources and environmental issues, CGAs jointly carried out the "Blue Sea" special law enforcement action with other relevant departments, continuously strengthening inspection and supervision, punishing violations such as illegal occupation of sea areas, illegal dumping of waste, and endangering precious and endangered wildlife, investigating more than 17000 important areas, key targets, and major projects, an increase of 42% year-on-year, and seizing more than 250 cases of illegal mining of sea sand, illegal use of sea, illegal dumping of waste, and threats to the safety of submarine cable pipelines. More than 20 cases involving precious and endangered wild animals were seized, with over 1200 live corals and more than 12700 seahorses seized (China Coast Guard, 2025).

Article 12(6) of the CGL empowers CGAs to participate in emergency response efforts, as well as the investigation and handling of marine environmental pollution accidents. In addition, Article 64 identifies the participation of CGAs in handling foreign-related maritime emergencies and managing maritime crises as a core responsibility within the framework of international cooperation.

The authority of CGAs in managing pollution accidents is further reinforced by Article 27 of the MEPL, which requires entities or individuals responsible for causing marine environmental pollution to report the incident to the competent department or agency responsible for marine environmental supervision and treatment.

On December 10, 2020, Zhejiang Zoushan Coast Guard Bureau found that two construction ships were dumping waste into the sea when patrolling the sea area near the West Wharf, Dinghai District, Zoushan City. The coast guard enforcement officers immediately boarded the suspected ship for inspection. It was found that the two construction ships dumped about 400 cubic meters of dredged materials without dumping permit, and violated Article 55 of the MEPL, which states that "no unit shall dump any waste into the waters under the jurisdiction of the China without the approval of the national marine administrative department." Zoushan Coast Guard Bureau made an administrative penalty decision, ordering the parties involved to cease the illegal activities and imposing a fine of RMB 140,000. It is the first maritime administrative case handled by Zoushan Coast Guard Bureau since the implementation of the CGL (Safety Zoushan, 2021).

4 Settlement of disputes

The enforcement activities of CGAs against MPLBS may provoke disputes at both domestic and international levels, depending on the legal principles and rules involved. If a dispute arises from the enforcement of domestic marine environmental laws—typically concerning the legitimacy and legality of the enforcement authority within China’s domestic legal framework—such disputes should be resolved through the remedies and dispute settlement procedures provided under Chinese domestic law. On the contrary, if dispute arises from challenges to China’s enforcement authority over MPLBS under the international legal framework, particularly regarding China’s jurisdiction over marine environmental protection in specific maritime zones, then it becomes necessary to resort to international dispute settlement mechanism for resolution.

4.1 Domestic dispute settlement methods and remedy procedures

Disputes arising from the enforcement actions of the CGAs in the prevention and control of MPLBS may involve jurisdictional issues as well as legal concerns related to enforcement procedures and outcomes. These disputes typically involve the interpretation and application of the CGL, the MEPL, and other relevant domestic laws. At their core, such disputes raise questions about whether the CGAs have been duly authorized under domestic law and whether their enforcement actions have been conducted legally and appropriately.

The authority of the CGAs to enforce marine environmental laws against MPLBS is stipulated in the CGL, and their enforcement actions are administrative in nature. Therefore, domestic dispute resolution mechanisms and legal remedies applicable to unlawful or improper administrative acts are also applicable. In these cases, according to Article 69 of the CGL, the enforcement actions of the CGAs are subject to the supervision of procuratorial authorities and oversight authorities within the armed forces. Additionally, the supervisory and accountability mechanism provided under Article 71 of the CGL, which apply across various levels of the CGA hierarchy, offer further avenues for dispute resolution. Beyond internal supervision procedure, any organization or individual dissatisfied with a CGA’s enforcement action has the right to apply for administrative reconsideration to the higher-level authority of that CGA, in accordance with the Administrative Reconsideration Law of China (Chinese Law, 1999). They also have the right to file administrative litigation in a Chinese domestic court with proper jurisdiction under the Administrative Litigation Law of China (Chinese Law, 1990).

4.2 International dispute settlement methods

When disputes concern whether Chinese marine environmental law is inconsistent with international law—including treaty

provisions to which China is a party, as well as customary international law—international dispute settlement mechanism should be invoked. Specifically, when China’s authority and jurisdiction in enforcing marine environmental law against MPLBS are challenged, the interpretation legal rules—primarily those under UNCLOS—will be brought into question. For example, in relation to Japan’s discharge of contaminated water, disputes between China and Japan arising from the enforcement of marine environmental law should be solved through the dispute settlement mechanism provided under UNCLOS.

In line with the fundamental principle of the peaceful settlement of international disputes, UNCLOS establishes a comprehensive dispute resolution mechanism encompassing both legal and political methods. According to Article 279, this mechanism applies to all disputes concerning the interpretation and application of the Convention. Political methods include negotiation, consultation, and exchange of views as stipulated in Article 283, as well as mediation under Article 284. Legal methods include arbitration as provided in Article 287(1)(c)(d), Annex VII, and Annex VIII, as well as judicial proceedings under Articles 186, 187, 287, and Annex VI. Conciliation is also included, functioning as a political method and, in some cases, a mandatory precondition to judicial or arbitral settlement (Burdeau, 2017) (pp.15). In addition to general conciliation under Article 284 and Section 1 of Annex V, compulsory conciliation is provided under Articles 297 (2)(b), 297(3)(b), 298(1)(a)(i), and Section 2 of Annex V. When the relevant requirements are met and the dispute falls within a specified category, any party may unilaterally initiate the conciliation process without the consent of the other party. Although the procedure may be initiated unilaterally, the report produced by the conciliation commission is not legally binding.

For a long time, the international community held high expectations for resolving disputes through legal mechanism, political negotiations, and mediation. However, it was not until the 2018 *Timor—Leste v. Australia Compulsory Conciliation Case* that compulsory conciliation attracted substantive attention. That case prompted states to explore the mechanism’s advantages, distinctive features, legal basis, and procedural framework. With the growing incidence of marine pollution and ecological damage, compulsory conciliation now represents a flexible alternative for dispute solution. Combining autonomy and coercion, it is more acceptable to states than other compulsory methods because it respects state sovereignty while still ensuring structured resolution. Moreover, the operation of compulsory conciliation under UNCLOS is subject to strict procedural provisions, thereby insulating the process from excessive political, economic, or diplomatic influence. This makes it a valuable tool in resolving international marine environmental disputes.

According to UNCLOS, besides the initiation of compulsory conciliation based on the agreement of disputing states, three types of disputes are subject to compulsory conciliation: marine scientific research in the exclusive economic zone and continental shelf (Articles 246 and 253), fisheries disputes and obligations to maintain living resources in the exclusive economic zone (Article 297), and delimitation disputes over maritime boundaries, historical

bays, or sovereignty (Article 298). These disputes concern different maritime issues and involve varying rights and obligations of the state parties. However, they share similarities: all involve breaches of specific obligations of the state parties under UNCLOS, and states are expected to refine and concretize these obligations through domestic legislation (Moravcsik, 1997) (pp.513).

In this process, state parties exercise discretion to formulate domestic rules and standards based on treaty obligations and national conditions, ensuring the effective implementation of treaty obligations. There exists a crucial transitional zone between UNCLOS obligations and their actual implementation by contracting parties. Within this zone, contracting parties may exercise discretion to first establish domestic rules and standards based on treaty obligations and national interests, and then fulfill their treaty obligations by implementing these rules and standards. Thus, these domestic rules and standards can, to some extent, serve as a link between the treaty text and the actual fulfillment of treaty obligations. In other words, the transitional zone consists of domestic rules and standards formulated at the discretion of contracting parties, which act as a bridge connecting treaty provisions and objective reality. Furthermore, according to Article 297(3)(c) of UNCLOS, even if a state fulfills its treaty obligations under international supervision, no organization or tribunal shall deprive or replace its discretionary power.

The exercise of discretionary power is also evident in disputes arising from marine environmental pollution. Part XII of UNCLOS, especially Article 192, requires state parties to establish and implement domestic laws and regulations to prevent and control marine environmental pollution, including land-based sources. These provisions do not set specific mandatory standards; Article 210(6) only requires that the effectiveness of national rules and standards be no less than that of international rules and standards. Moreover, Article 207 emphasizes that when formulating rules and standards, contracting parties should take into account internationally recognized rules, standards, practices, and procedures. These standards are reflected in many treaty provisions drafted by the International Maritime Organization (IMO) (Tsuruta, 2009) (pp.382), including the 1972 Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (London Convention) (Convention, 1972) and the 1996 Protocol to the 1972 London Convention on the Dumping of Waste into the Sea (London Protocol) (Protocol, 1996). To fulfill their obligation to protect the marine environment, states should establish goals, rules, and specific procedures through domestic legislation in accordance with these international rules and standards. Within this framework, the discretion of the state plays an important role in seeking appropriate indicators and variables to develop rules and standards that comply with domestic laws and regulations.

Besides the exercise of discretion by state parties, there is another commonality reflected in the necessity of quickly resolving disputes related to MPLBS. Such disputes closely relate to the security and interests of all relevant states, and their escalation may threaten regional and international peace and

security. Based on these commonalities, compulsory conciliation can also be applied to disputes over marine environmental pollution. Compulsory conciliation operates flexibly while embodying coercive features. Once initiated by any conflicting party, the procedure continues regardless of the intention of the other party's intention. The application of compulsory conciliation also enhances the efficiency of dispute settlement.

Regarding the disputes arise from the discharge of contaminated water by Japan, the primary challenge China and other neighboring states face is to confirm they have suffered damages. If evidence is enough to prove the existence of the damages, the dispute can be resorted to compulsory conciliation. Either China or Japan, in accordance with Article 1 of UNCLOS Annex V, can submit the disputes to conciliation. And according to Article 12, "the failure of any party to reply to notification of institution of proceedings shall not constitute a bar to the proceedings." Under Article 3 of Annex V, once the procedure is activated, the conciliation commission consisting of five conciliators will be constituted, based on appointment of China and Japan. Each party appoints two conciliators and the Secretary-General of the UN will be requested to make the appointment if either party failed to do so on time. Four conciliators appoint a fifth conciliator as the chairman, and the conciliation commission is established. In accordance with Article 4 of Annex V, the conciliation commission determines its own procedures. More importantly, Article 13 asserts that "a disagreement as to whether a conciliation commission acting [under section 2] has competence shall be decided by the commission." Articles 7 and 8 of Annex V of UNCLOS require the conciliation commission to submit its report within 12 months of its constitution and to terminate the conciliation proceedings thereafter. So that the disputes can be promptly sorted out and resolved without any delay.

The functions of commission are authorized in Article 6 of Annex V, including hearing the parties, examining their claims and objections, and making proposals to the conflicting parties. However, in order to facilitate and enhance the settlement of disputes, at least in the settlement of disputes related to the contaminated water discharge, the authorities of commission should be expended appropriately. For instance, the commission should have right to set up and send working groups consisting of experts to investigate if the discharged water is radioactive. Moreover, the commission may have the authority to suggest China and Japan replace dispute settlement methods if necessary. Since the conciliation is not a court or tribunal, if the disputes concern to interpretation and implementation of UNCLOS and other relevant international treaties, it is proper to submit them to judicial institutes for settlement.

As one predominant characteristic, the report made by the commission is not binding upon the conflicting parties in accordance with Article 7(2) of Annex V. Nevertheless, in order to fulfill the obligation of settling disputes peacefully for both China and Japan, under Article 2(3) of the UN Charter and Article 297 of UNCLOS, the effectiveness of conciliation report should be strengthened. At a minimum, China and Japan should refrain from inconsistent activities with the report unless they decide to

resort to other dispute solution methods. Cooperating with other institution, like ICJ, ITLOS, arbitral courts, *ad hoc* tribunals, will benefits for implementing the report.

5 Conclusion

In order to fulfill their international legal obligations to protect the environment, achieve sustainable development goals, enhance their international image, and better safeguard their current and future interests, states are actively exploring common approaches to marine environmental protection (Zhang, 2020) (pp.70). However, corresponding to the rapid advancement of technology and the expansion of human activities, marine pollution caused by land-based sources (MPLBS) has become severe threat to the marine environment. For member states of international treaties and conventions related to marine environmental protection, the obligations to prevent and control marine pollution must be fulfilled in good faith (Chen and Lin, 2021) (pp.56). Due to the lack of a specific universal convention regulating MPLBS and the weakness of enforcement mechanism in international law, states currently reply primarily on their domestic laws to address MPLBS control.

This phenomenon triggered a series of controversial issues regarding the enforcement of domestic environmental laws against MPLBS. These issues include questions related to legal authority, jurisdiction, enforcement agencies, dispute settlement mechanism, and more. The discharge of contaminated water by Japan is a prime example. While the discharge may not cause obvious symptoms of radiation sickness in the short term (Luo, 2023) (pp.102). It highlights the failure of the existing international environmental framework to adequately regulate the most significant nuclear incident in nearly three decades (Ghorbi, 2012) (pp.504), and it poses a serious threat to global biodiversity and ecological security (Duan et al., 2024) (pp.123).

In recent years, China has revised and adopted a series of domestic laws directly or indirectly related to marine environmental protection and law enforcement, including the Marine Environmental Protection Law (MEPL), the Coast Guard Law (CGL), and the Law on the Conservation of Fishes and Special Islands (LCFSI). Based on these domestic laws, China has the authority to strengthen the enforcement of marine environmental laws against MPLBS. This authority is justified by the fulfillment of three conditions: clear stipulations in domestic law, consistency with international legal rules, and the purpose of protecting national interests and preventing future damage. With regard to MPLBS incidents occurring outside waters under China's jurisdiction, if the pollution extends into to China's jurisdictional waters and causes damage or harmful consequences to China, China has the jurisdiction to enforce its domestic marine environmental laws in response. However, such jurisdiction must be exercised within China's jurisdictional waters and in accordance with both domestic and international legal principles. Depending on the legal status of different maritime zones, the exercise and

implementation of this jurisdiction may vary, including direct enforcement actions against the responsible party, or indirect measures targeting the responsible party's assets located within the Chinese jurisdictional waters.

According to the CGL and MEPL, China's Coast Guard Agencies (CGAs), functioning as maritime police, are designated as the competent authorities to enforce marine environmental laws against MPLBS. In the event of disputes arising from the enforcement actions of CGAs, appropriate resolution mechanism—including domestic legal remedies and compulsory conciliation—may be pursued, depending on the nature of the issues involved. In particular, compulsory conciliation offers distinct advantages in resolving disputes related to the enforcement of marine environmental laws against MPLBS.

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The original contributions presented in the study are included in the article/supplementary material. Further inquiries can be directed to the corresponding author/s.

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