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# Legal advice on the Chinese compensatory fund system for oil pollution damage caused by ships from the perspective of marine environmental governance

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As one of the primary obstructive factors for marine environmental governance, the frequent occurrence of oil pollution damage caused by ships has resulted in the establishment of compensation funds, such as the Oil Spill Liability Trust Fund of the United States, Ship Oil Pollution Fund of Canada and International Oil Pollution Compensation Fund (IOPC). Frequently suffering from marine oil pollution, China has extended considerable effort in marine environmental governance. Following the introduction of the 'green principle' into the Civil Code, China attached increasing significance to the legislation including compensation for oil pollution damage caused by ships. China formally established a compensation fund in 2012, and the past decade has witnessed the burgeoning development of the Chinese Ship-source Oil Pollution Compensation Fund (CSOPC), in addition to several defects which impede the fund from achieving the goal of marine environmental governance. As a national fund that is independent of the IOPC, the CSOPC adopts several regulations that are distinctive from internationally recognized practice; for instance, not recognizing pure economic loss within the scope of compensation. Such unique parameters, though partially originating from the national conditions in China, have resulted in glaring defects, including incomplete compensation scope and inappropriate compensation measures. Given the above problems, this study endeavours to provide several legal recommendations from the perspective of macro policies for improving the top-level design of the system, enhancing oil pollution compensation capabilities, and promoting the internationalization process. The study proposes two potential regulatory paths for innovation; namely, enlarging the range of compensation and establishing an essential emergency fund. From the perspective of protecting the rights of the victims of oil pollution damage and safeguarding the public interests of the

ocean, this study puts forward relevant legal suggestions, which are expected to make valuable contributions to improving the compensation system for oil pollution damage caused by ships in China and promoting the governance of the marine environment.

#### KEYWORDS

legal advice, compensation for oil pollution damage caused by ships, oil pollution compensation fund, marine public interest, marine environmental governance

## 1 Introduction

China imported more than 10,000 barrels of crude oil per day in 2021, making the nation the largest crude oil importer in the world (Statista, 2022; CEIC, 2022). The massive demand for crude oil has promoted the prosperity of oil transportation by sea, resulting in a considerable amount of serious oil pollution damage caused by ships. On 20 August 1995, the Tuvalu tanker Tan Jia collided with the wharf at Guangzhou Port, resulting in 200 tonnes of crude oil spillover and heavy loss. As a result, the officials of the Ministry of Transportation of China signed a report on Opinions on Research Countermeasures to the then-minister, formally proposing the idea of using the international ship oil pollution compensation fund to solve the problem of ship oil pollution compensation in China and improve China's ability to address major ship oil spills for the first time. The Minister of Transportation subsequently issued instructions regarding countermeasures, establishing a key soft science research project entitled 'Research on Countermeasures to Establish China's Ship Oil Pollution Compensation Mechanism', representing the first exploratory macro countermeasures research on the establishment of a Chinese ship oil pollution compensation mechanism (CSOPC, 2017). In addition to growing attention from policymakers, social forces advocating China's construction of a compensation fund for oil pollution damage from ships and other marine environmental governance issues have also been influential (Chen et al., 2021). The CSOPC was established in 2012, published the Claims Manual (Provisional Edition), and added a new section to the Maritime Law (Draft for Comment) to provide the legal basis for compensation funds for pollution from ships in 2018. The above instruments symbolize the standardization of compensatory funds under Chinese domestic legislation. In 2020, the enactment of the Civil Code introduced the 'green principle' to the Chinese civil law system.<sup>1</sup> Chapter VII of the Civil Code

stipulates the liability for environmental pollution and ecological damage, according to which the tortfeasor shall assume the tort liability, and the authority specified by the state or the organization specified by law is entitled to require the tortfeasor to provide compensation when there is a violation of the provisions issued by the state that causes harm to the ecology and environment.<sup>2</sup> The Civil Code and Maritime Law represent the relationship between general and special law. The Civil Code serves as an authoritative legal document promoting the environmental governance function of the CSOPC as well as including protections such as the punitive compensation for victims of maritime oil spills, which may currently be beyond the CSOPC's legal framework.<sup>3</sup> The most recent CSOPC legal document is the revised Claims Manual and Guidance published in November 2022.

As the third largest national oil pollution fund in the world, the CSOPC has been running smoothly for 10 years while having an outstanding role in protecting the interests of victims of oil pollution damage. However, in comparison to the more mature

<sup>1</sup> Article 9 of the Civil Code of the People's Republic of China: 'The parties to civil legal relations shall conduct civil activities contributing to the conservation of resources and protection of the environment.'

<sup>2</sup> Article 1235 of the Civil Code of the People's Republic of China: 'Where a violation of the provisions issued by the state causes harm to the ecology and environment, the authority specified by the state or the organization specified by law shall have the right to require the tortfeasor to make compensation for the following losses and expenses: (1) The losses resulting from the loss of service functions from the time when damage is caused to the ecology and environment to the completion of remediation. (2) The losses resulting from permanent damage to ecological and environmental functions. (3) Expenses of investigation, authentication, and assessment of ecological and environmental damage. (4) Expenses of pollution removal and ecological and environmental remediation. (5) Reasonable expenses incurred to prevent the occurrence and aggravation of damage.'

<sup>3</sup> Article 1233 of the Civil Code of the People's Republic of China: 'Where environmental pollution or ecological damage is through the fault of a third party, the victim may require compensation from either the tortfeasor or the third party. After making compensation, the tortfeasor shall be entitled to be reimbursed by the third party.'

international compensation mechanism of the International Oil Pollution Compensation Fund (IOPC) and domestic compensation mechanisms such as the Oil Spill Liability Trust Fund (OSLTF) in the United States, the CSOPC still requires improvement (Yang and Zhu, 2017). From the perspective of marine environmental governance, in particular, the fund has not played its due role. Based on the marine environmental crises caused by ship-source oil pollution, the compensation provided by the CSOPC is far from adequate to meet the requirements of marine environmental governance. The defects of the Chinese compensation fund are multi-dimensional, most of which have been subject to long-standing investigation and continue to have an outstandingly negative role. For instance, by analyzing recent oil spill incidents, scholars have determined that China still lacks adequate capabilities to respond to open sea oil spills in many respects, including an inadequate amount of compensation and international cooperation (Xing and Zhu, 2022).

Noteworthy, the existing literature on the compensation for oil pollution damage caused by ships mainly focuses on the compensation for the victim's private interests. Early studies mainly introduced basic concepts related to the fund system (Liu, 2002; Liu et al., 1999) and compared funds worldwide (Song, 1999; Yang, 2006; Yu, 1993). Since the establishment of CSOPC, numerous articles have made general reviews of the CSOPC's operation, while identifying problems inter alia the inadequate compensation (Xue and Zhang, 2014). Accordingly, scholars have discussed several specific issues expected to enhance the compensation ability of the fund, for instance, reconstructing regulations on the sources of funds (Yan and Xu, 2016), establishing a reasonable oil pollution clean-up charge standard (Shuai and Lin, 2018), and expanding the compensation scope (Kang, 2014). For the time being, insufficient compensation remains to be the major obstructive factor to the satisfactory operation of CSOPC. This paper thus is going to focus on this issue based on previous research while partially modifying the existing conclusions pursuant to the latest revised Claims Manual of CSOPC. Furthermore, this paper notices that due to the continuous and widespread nature of marine environmental pollution in time and space, marine environmental pollution involves a large number of people and is dispersed in different regions, which not only seriously damages the rights of relevant parties, but also endangers the public interests of the sea. Nonetheless, the legal protection of marine public interest offered by CSOPC is often ignored by the existing works. Admittedly, some scholars have observed the significance of establishing an emergency fund that facilitates controlling pollution (Li and Hu, 2018) while the recent literature focuses on both victim compensation and pollution control functions of CSOPC (Cao and Chang, 2022). It is notable that, under the perspective of marine environmental governance, more issues bounding to protecting the public interests viz. the sustainable marine environment and

resources, for example, the promotion of public interest litigation, the coordination between CSOPC regulations and higher-hierarchy legal documents, and the cost on restoring fishery resources, are rarely or inadequately discussed before and therefore fall into the consideration of this paper.

Starting from the current circumstances and compensation fund legislation, this study examines the challenge of marine environmental governance caused by ship-source oil pollution damage and briefly introduces the CSOPC. Furthermore, this study focuses on existing problems in the scope of fund compensation that fail to compensate for the indirect losses and pure economic losses, also examining the problems of compensation measures in the CSOPC's applied sequential compensation model and the issue of marine public interest protection. Finally, this study proposes macro-level legal recommendations to improve the current legal system of marine oil pollution and judicial practice. In this regard, the proposed method for addressing this problem could be initiated from three directions, which include improving the top-level design of the system, enhancing the oil pollution compensation ability, and promoting the internationalization process. In addition, from the perspective of specific institutional design, expanding the scope of financial compensation and establishing an emergency mechanism are two issues that deserve attention. This study is expected to make a valuable contribution to constructing a compensation system for oil pollution damage caused by ships with Chinese characteristics and promoting governance of the marine environment that is aligned with international standards.

## 2 Current circumstances and legislation of oil pollution damage from ships

### 2.1 The urgent demand for marine environmental governance

A rising population and developing economy have posed persistent challenges to the bearing capacity of the marine environment. As noted by the United Nations, the resilience of coastal and marine ecosystems and their ability to provide key services will decline if comprehensive coordination and cross-sectoral approaches based on science are not adopted (United Nations, 2017). Considering these severe circumstances, the realization of marine environmental governance has become a subject of international consensus. Since the 1980s, a series of international conventions related to marine environmental governance have been continuously issued, represented by the United Nations Convention on the Law of the Sea. Various countries and regions have successively established marine environment governance mechanisms. As achieving the sustainability of social-ecological systems in a changing world

is considered a major contemporary global challenge (Robert et al., 2021), marine governance is a matter of priority among the international community.

After the reform and opening-up, China began to pay more attention to marine environmental protection, continuously improving marine environmental governance through legislation. Since the Marine Environmental Protection Law was promulgated in 1982, China's marine environmental governance policy system has become increasingly complete. Marine environmental governance has been regarded as an important national policy, and its integrity and implementation directly affect the establishment of maritime power and the realization of the Belt and Road Initiative strategy (Xu, 2018). Although China has exerted considerable effort to protect the marine environment, achieving effective governance remains a demanding issue. Among many obstacles, marine environmental pollution, particularly marine oil pollution caused by ships, has challenged the achievement of effective marine environmental governance.

Due to the standing government efforts and innovations in maritime technology, the number and volume of oil spills from tankers have plummeted since the 1970s and have largely stabilized at a low level. However, this significant reduction in spills is not equivalent to ultimate success. In 2021, the total volume of oil spilled by tankers was approximately 10,000 tonnes, as six oil spills of over 700 tonnes were recorded from tanker incidents (ITOPF, 2021). Notably, tankers are not the sole source of oil pollution, as various maritime vessels, including container ships, chemical carriers, general cargo ships, and passenger or cruise vessels, are also considered to be hazards (UN 2021). Multiple incidents that have occurred in recent years repeatedly indicate the seriousness of oil pollution from ships. For instance, the MV *Wakashio* oil spill that occurred on 25 July 2020 spilled an estimated 1,000 tonnes of oil into a lagoon where numerous environmentally sensitive species like corals, seagrass, and mangroves reside (Alan et al., 2021). Similarly, leaked oil from the '4.27' ship pollution accident in Qingdao in 2022 resulted in the destruction of more than 70% of the fish eggs in the surrounding waters, and it will take more than 10 years for the fishery resources to recover to the pre-pollution level (Qingdao "4 · 27" ship pollution accident investigation group, 2022).

Oil spills are an essential factor of consideration for realizing marine environmental control. Avoiding oil pollution accidents caused by ships and minimizing their impacts is considered to be an interdisciplinary issue, in which judicial efforts have a crucial role. As oil spills seriously damage fishing stocks and other forms of marine life, pollution from shipping raises several issues, including liability and compensation for pollution damage (UN, 2017). Oil pollution caused by ships also seriously damages the public interests of the sea. Due to the continuous and widespread nature of marine environmental pollution in time and space, Marine environmental pollution disputes involve a large number

of people and are dispersed in different regions, which seriously damages the national and social welfare. The damaged public interest is the most easily ignored, which is the so-called "tragedy of the commons". The challenge of marine environmental governance stimulated by maritime oil pollution accidents is in dire need of an appropriate mechanism of compensation.

## 2.2 Chinese ship-source oil pollution compensation fund

Although oil pollution damage caused by ships will result in huge economic losses and marine ecological devastation, shipowners, and their insurers or financial guarantors may be entitled to exemption from liability,<sup>4</sup> resulting in victims' inability to obtain full and effective compensation (Yang and Zhu, 2017). This dilemma stimulated the development of the ship oil pollution damage compensation fund system, requiring shipowners to share the risk and loss of oil pollution.

The compensation fund approach has become a common worldwide measure for addressing oil pollution damage caused by ships. Specifically, three main paths of compensation are accepted. First, most countries and regions in the world have accepted the international compensation system established by the International Convention on Civil Liability for Oil Pollution Damage (CLC1969) and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FC1971). This system was reaffirmed and expanded in compensation scope and limits by the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (1992 Fund Convention) and the International Convention on Civil Liability for Oil Pollution Damage, 1992 (CLC1992). The 1992 Fund Convention established an international organization known as the IOPC to supplement shipowners' liability and provide compensation to those affected by loss or damage resulting from oil pollution from tankers (Shuai, 2019). Second, some countries and regions, represented by the United States, have established compensation mechanisms relying solely on domestic legislation. The US Treasury established the OSLTF according to the Oil Pollution Act of 1990 (OPA1990), to supplement the liability of cargo owners (Wang, 2014). Finally, some countries or regions have established a dual-track parallel compensation mechanism based on international conventions and domestic laws. For example, as a member of IOPC, Canada also established the Ship-source Oil Pollution Fund (SOPF) under the Marine Liability Act to provide comprehensive compensation for oil pollution damage regardless of the

<sup>4</sup> See Article 13.25 of the People's Republic of China (PRC) Maritime Law (Draft for Comment) for three cases representing the application of compensation funds for oil pollution damage from ships.

persistence of oil spills or the type of vessel. The fund also compensates for reasonable measures taken to prevent spills.

With the establishment of CSOPC in 2012, a ship oil pollution damage compensation fund system was officially implemented in China but had characteristics of incomplete participation in international conventions and the need for continuous improvement of relevant domestic laws and regulations. CLC1969 was in force for China as early as 1980, but FC1971 is still only implemented in Hong Kong SAR. Whether mainland China should participate in FC1971 is a controversial issue. From the input perspective, as the world's largest crude oil importing country (World Energy & Climate Statistics–Yearbook 2021), China would be compelled to provide a considerable amount of funds for IOPC if it fully participates in FC1971. This circumstance is extremely similar to that of the United States, which is also a major crude oil importer and does not participate in FC1971. However, from the perspective of return, the current level of claims in China is relatively low (Lin, 2007; Dong et al., 2015); hence, it is difficult to guarantee that the main body of claims would receive adequate compensation from the IOPC. Therefore, participating in FC1971 would do more harm than good to China. In contrast, those who support participation in FC1971 have asserted that the CSOPC has the disadvantage of higher apportionment cost but inferior protection capability in comparison to the IOPC (Cao and Chang, 2022). Therefore, for countries such as China, with a high oil leakage risk, from the perspective of risk-sharing and economic loss, it is more beneficial to join the IOPC rather than establish national funds (Dong et al., 2015). Joining the international compensation mechanism does not conflict with the establishment of a domestic oil pollution compensation fund. China can learn from the Canadian model to further improve the relevant system of CSOPC and advance its compensation ability. At the same time, after the improvement of claim ability, joining the FC1971 is considered to protect victims at both international and domestic levels.

Not participating in the international compensation mechanism means that China must establish a national compensation base for oil pollution damage based on domestic law. In recent years, China's laws and regulations on ship oil pollution damage compensation funds have undergone a fledgling development process, from low-level regulations to high-level laws. Since the Ministry of Finance and the Ministry of Transport jointly issued the Administrative Measures for the Collection and Use of Compensation Funds for Vessel-induced Oil Pollution Damage (Administrative Measures) in 2012, China has successively issued the rules of the Administrative Measures' implementation, issuing guidelines for compensation fund claims (trial version) and a CSOPC Claims Manual. Given the above administrative regulations, some scholars have noted that the regulatory effect of the fund system is generally not high (Li and Hu, 2018), but the Chinese Maritime Law (Draft for Comment) published in 2018 dedicated Section 5 of Chapter

13 to 'comprehensively regulate'<sup>5</sup> the oil pollution damage compensation fund, which is expected to upgrade the legal source of the fund from administrative regulations to laws (Ministry of Transport of the People's Republic of China, 2018).

### 3 The deficiencies of the Chinese ship-source oil pollution compensation fund

#### 3.1 Existing problems in the scope of fund compensation

As noted above, the damage to marine environment management caused by oil pollution from ships is embodied in short-term economic losses and medium-and long-term resource losses, and the compensation scope of the CSOPC does not fully cover the financial need to make up for both, particularly in terms of fishery losses. In practice, the concepts of fishery resource loss and fishery loss are often confused. Fishery resources<sup>6</sup> refer to all aquatic animals and plants in a certain water area, both adult and non-adult, as an integral part of natural resources, as opposed to the property owned by a specific person or organization. Therefore, the loss of fishery resources is a matter of environmental damage that must be distinguished from the loss of fishery concerning economic loss. Specifically, the differences between this pair of concepts are as follows: the victim of fishery resources loss is the resource owner; that is, the country, which is specifically represented by the fishery supervision institution collecting compensation fees for the loss of fishery resources<sup>7</sup>. However, the victim of fishery loss is the private subject engaged in the fishery industry. Conceptually, the loss of fishery resources refers to the loss of natural aquatic products, excluding profit loss, while the loss of fishery includes

5 The 2018 People's Republic of China (PRC) Maritime Law (Draft for Comment): 'A special chapter on compensation for ship pollution damage has been added, which systematically improves the existing compensation system for ship pollution damage, and comprehensively regulates the problems of oil pollution, fuel pollution, toxic and harmful substances and oil pollution damage compensation fund'.

6 China's Fisheries Law regards aquatic animals, aquatic plants or aquatic animals and plants as the content of fishery resources; however, some extraterritorial laws, such as the Canadian Fisheries Act, also regard the eggs, sperm, larvae and young fish (eggs, sperm, spawn, larvae, spat and juvenile stages) of marine animals as a part of fishery resources (fish). As the non-adult living conditions of aquatic animals and plants will also directly affect the long-term viability of related organisms, the authors contend that both adult and non-adult aquatic animals and plants must be included in the scope of fishery resources.



direct economic and profit loss (Han, 2007) caused by the decrease in fishery resources, including fishing quantity and the obstruction of fishing activities. Regarding the calculation method, unlike fishery loss, the loss of fishery resources cannot be estimated simply in monetary form. Although relevant calculation formulas have been devised, some assumptions and inferences inevitably remain in the calculation of such losses, rendering it impossible to achieve completely accurate and scientific calculations (Fang 1993). In terms of compensatory purposes, fishery loss aims to compensate employees' loss of income, while fishery resource loss aims to restore the damaged environment, referring to the proliferation and release and improvement, protection, and management of the marine ecological environment. Its fundamental purpose is to safeguard the public interests of the marine environment. It is the fundamental task of a country under the rule of law to provide legal relief for the damage that has happened or is about to happen. According to the traditional theory of civil procedure, the plaintiff can only sue with their own rights or direct interests. In public interest litigation for compensation of oil pollution caused by ships, the people with a direct interest in pollution behavior often lose very little interest, nonetheless, the pollution has a very serious impact on the public interest. Direct stakeholders often do not file lawsuits because of limited damage interests, which leads to a large number of acts damaging public interests that fail to be corrected. Therefore, it is advised to establish and improve the public interest litigation system of compensation for oil pollution caused by ships.

According to the Administrative Measures of the CSOPC, the funds available to compensate for fishery losses and fishery resources losses refer to 'direct economic losses caused to fishery and tourism in the third order of compensation and 'expenses incurred by measures taken to restore marine ecology and

natural fishery resources in the fourth order of compensation.<sup>8</sup> In other words, at present, the CSOPC excludes compensation for indirect and pure economic losses and the expenses of measures to reasonably restore marine ecology and natural fishery resources (Hu, 2016). Judging from the current practice, the above three kinds of compensation are closely related to the sustainable development of fisheries as an integral aspect of marine environmental governance, meaning that the current system design excluding them is imperfect (Stephenson et al., 2021).

For the expenses of measures to reasonably restore marine ecology and natural fishery resources, the Chinese Maritime Code (Draft for Comment)<sup>9</sup> and the Judicial Interpretations on Compensation for Vessel-Source Oil Pollution<sup>10</sup> include the cost of reasonable restoration measures to be taken for environmental pollution damage in the scope of pollution damage, and the provisions of the Administrative Measures have deviated from the current legal system. The IOPC stipulates that the cost of reasonable restoration measures for the environment includes actual and future reasonable restoration measures.<sup>11</sup> The Administrative Measures and Claims Manual do not align with international conventions and common measures that are effective for China. The restoration of marine and natural fishery resources differs from the original stipulation in the traditional tort law. Because of the dynamic balance of each component of the ecosystem and the complexities of evaluating the damage received (Li, 2004), accurately determining an appropriate compensation amount to completely restore the marine ecosystem and resources to their pre-pollution state is challenging, as it is expected to take an enormous amount of money and time to achieve relative restoration. Failure to compensate for the cost of the measures that must be taken will lead to insufficient time for claimants to determine recovery plans and proposed compensation amounts, rendering them unable to

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7 Provisions of the Ministry of Agriculture on the Calculation Method of Fishery Loss in Water Pollution Accidents: 'The compensation fee for the loss of natural fishery resources is collected by fishery supervision and management institutions and is used for the proliferation and release and improvement, protection and management of fishery ecological environment'.

8 Article 17 of A Notice of the Ministry of Transport and the Ministry of Finance on Issuing the Detailed Rules for the Implementation of the Administrative Measures for the Collection and Use of Compensation Funds for Vessel-induced Oil Pollution Damage, the Vessel Oil Pollution Damage Compensation Fund shall be accepted in the sequence of applications. Among them, claims for the same accident shall be paid or compensated in the following scope and order ... (3) direct economic losses caused to fisheries and tourism, etc. (4) expenses incurred by measures already taken to restore Marine ecology and natural fishery resources.

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9 Article 13.2 of the Maritime Law (Draft for Comment): 'Pollution damage refers to 1. Loss or damage caused by pollution outside the ship due to spillage or discharge of pollutants specified in this chapter. However, in addition to the loss of profits caused by such damage, the compensation for environmental damage shall be limited to the cost of reasonable recovery measures taken or to be taken, including reasonable monitoring, evaluation and research expenses'.

10 Judicial Interpretations on Compensation for Vessel-Source Oil Pollution: '(4) the cost of reasonable restoration measures taken or to be taken for the polluted environment'.

11 International Oil Pollution Compensation Funds Claims Manual, Article 3.6.1: 'Under the 1992 Conventions compensation for impairment of the environment is limited to loss of profit from such impairment and costs of reasonable measures of reinstatement actually undertaken or to be undertaken'.

obtain full and fair compensation, which is not conducive to the advancement of marine environmental governance.

According to the interpretation of the Supreme People's Court, both pure economic and indirect losses are distinguished from direct economic losses on the grounds that they are not incurred by entities or individuals in industries, such as fishery and tourism which have a direct causal relationship with vessel-induced oil pollution incidents.<sup>12</sup> Under the cases of CSOPC,<sup>13</sup> fishery losses, including breeding and fishing losses such as damage to farmed oysters, shrimp, and fish killed by oil, in addition to direct economic tourism losses, such as the costs of replacing and swimming pool floats and cable, are considered to have a direct causal relationship with the pollution. Moreover, in case 2018 (2), the CSOPC refused to compensate for the 'operating loss of scenic spot' as part of the claimant's direct economic losses (CSOPC, 2019), although the loss of income was acknowledged to be caused by the indirect effect of spills.

In IOPC's Claims Manual, the term pure economic losses is defined as the loss of earnings caused by oil pollution suffered by persons whose property has not been polluted and the costs of reasonable measures, such as marketing campaigns, which are intended to prevent or reduce economic losses. This provision is related to the indirect effect of spills such as damages to a region's reputation that lead to losses in the tourism sector, or to coastal restaurants that are unable to sell local fish, rather than the incident's direct effect, including economic damages that stem from physical injury to property and natural resources. In contrast, indirect losses refer to damage to property other than that related to the ship's oil pollution accident and the resulting loss of income. The Judicial Interpretations on Compensation for Vessel-source Oil Pollution<sup>14</sup> include indirect and pure economic losses in the scope of compensation for oil pollution damage from

ships. The IOPC also stipulates that both types of losses belong to its compensation scope.<sup>15</sup> The Administrative Measures of the CSOPC provide compensation for direct economic losses,<sup>16</sup> which is further interpreted by the Implementation of the Administrative Measures to mean only the actual losses of property value incurred by entities or individuals in industries such as fishery and tourism, which have a direct causal relationship with vessel-induced oil pollution incidents (Ministry of Transport of PRC, 2020). The Administrative Measures have derailed domestic laws and regulations and common international measures by neglecting to delineate pure economic and indirect losses. Admittedly, both types of losses are not incurred as a direct result of contamination caused by ships; however, in terms of marine environmental governance, oil pollution will not only damage the marine environment but also destroy the source of income of fishermen and fishery enterprises that depend on marine resources. If the property damaged from oil pollution and the resulting degraded income are not properly compensated, fishery practitioners who have difficulty catching enough marine products in polluted waters may take risks to compensate for their economic losses *via* illegal means such as illegal, unreported, and unregulated fishing. From this perspective, the lack of compensation for indirect and pure economic losses could also cause damage to fishery resources outside the polluted sea areas and aggravate behaviors that violate the fishery management system, leading to further marine environmental degradation caused by other reasons such as plastics and sewage (Vidas, 2010).

### 3.2 Problems in existing fund compensation methods

As one of the few regions in the world that have not joined FC1971, Mainland China's current arrangement of primarily relying on state funds for compensation is similar to that of the

12 Article 4 of Implementation of the Administrative Measures for the Collection and Use of Compensation Funds for Vessel-induced Oil Pollution Damage: 'Direct economic losses as mentioned in item (3) means the actual losses of property value incurred by entities or individuals in industries such as fishery and tourism which have direct causal relationship with vessel-induced oil pollution incidents'.

13 CSOPC Case 2017 (04); CSOPC Case 2018 (02); CSOPC Case 2018 (03).

14 Article 9 of Judicial Interpretations on Compensation for Vessel-source Oil Pollution: 'The scope of compensation for oil pollution damage from ships includes: (1) the costs incurred in taking preventive measures to prevent or mitigate oil pollution damage to ships and further loss or damage caused by such preventive measures; (2) damage to property other than the ship caused by an oil pollution accident and loss of income caused thereby; (3) loss of income arising from environmental damage caused by oil pollution and (4) the cost of reasonable restoration measures taken or to be taken for the polluted environment'.

15 Articles 1.4.8, 1.4.9 and 1.4.10 of the IOPC Claims Manual.

16 Article 17 paragraph 1 of Administrative Measures for the Collection and Use of Compensation Funds for Vessel-induced Oil Pollution Damage: 'Claims for compensation funds for vessel-induced oil pollution damage shall be accepted in order of the application time. In particular, claims involved in the same accident shall be compensated for in the following scope and sequence: 1. emergency expenses incurred for reducing oil pollution damage; 2. expenses incurred for controlling or removing pollution; 3. direct economic losses caused to the fishery industry and tourist industry; 4. expenses incurred for measures taken to recover marine ecology and natural fishery resources; 5. expenses incurred during the surveillance and monitoring activities conducted by the Management Committee of the Compensation Funds for Vessel-induced Oil Pollution Damage and 6. other expenses approved by the State Council'.

United States. Nevertheless, as a damage compensation system accepted by most countries and regions in the world, the IOPC also has strong significance as a reference for China's related system construction. Compared with the IOPC and OSLTF in the United States, the CSOPC still has many problems with its compensation methods.

The regulatory reach of OPA1990 includes oil of any kind or in any form other than constituent portions of oil specifically listed as a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (Sump, 2010).<sup>17</sup> Similarly, Judicial Interpretations on Compensation for Vessel-source Oil Pollution, a legal document enacted prior to the establishment of the CSOPC, excludes non-persistent cargo, and oil from the term 'oil'.<sup>18</sup> Accordingly, the Administrative Measures of the CSOPC exempt non-persistent oil from the collection of the compensation fund.<sup>19</sup> Non-persistent cargo oil is excluded from the scope of compensation based on two considerations. First, the international instruments applicable in China, including CLC1969 and the International Convention on Civil Liability for Bunker Oil Pollution Damage (Bunker Convention) only stipulate regulations concerning persistent oil.<sup>20</sup> Second, the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (1996 HNS Convention),

which applies to pollution and non-pollution damage caused by non-persistent oil cargo, has not come into force (Dong, Zhu, 2019).<sup>21</sup> However, from the perspective of protecting marine ecology, non-persistent oil is equally worthy of attention.

Non-persistent oil, including gasoline, light diesel oil, and kerosene, refers to oil that will dissipate rapidly through evaporation. Non-persistent oil pollution at high concentrations can impart acute toxicity to marine organisms resulting in the mass death of marine life in a short period of time (ITOPF, 2022). The non-persistent cargo oil pollution from the *Sanchi* collision caused major marine environmental disasters in China. In 2018, the oil tanker *Sanchi*, carrying 136,000 tonnes of condensate, which is a form of non-persistent cargo oil, sunk in the East China Sea (Chen et al., 2020). The condensate that leaked from the *Sanchi* contained toxic components, such as hydrogen sulphide and thiol and sulphur oxides which are toxic and harmful to human health through inhalation or skin contact. Furthermore, the combustion and decomposition processes of the aforementioned substances produce pollutants such as nitrogen and significantly raise the risk of explosion and fire hazard. Though the *Sanchi* incident is considered to be the worst condensate spill incident in history (Tong and Zhou, 2018), excluding the persistent cargo oil pollution caused by *Sanchi* from the compensation scope prevented the application of CLC1969 and the Bunker Convention, reducing the victims' likelihood of receiving full compensation (Yu and Zhang, 2018). In this sense, the CSOPC could have an essential role in providing compensation for losses like cleaning costs and loss of income when the conventions in force are not applicable and while China's participation in HNS conventions is still pending. Notably, the revised Claims Manual of CSOPC indicates that lawmakers recognize this problem.<sup>22</sup>

In contrast to the proportional compensation approach adopted by the IOPC Fund, the CSOPC Fund adopts a

17 § 1001(23) of Oil Pollution Act 1990: 'Oil means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes other than dredged spoil, but does not include petroleum, including crude oil or any fraction thereof, which is specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601) and which is subject to the provisions of that Act'.

18 Article 31(2) of Judicial Interpretations on Compensation for Vessel-source Oil Pollution: 'Oil means any hydrocarbon mineral oil and the residuum thereof, limited to persistent oil carried on board a vessel as cargo and persistent or non-persistent fuel oil carried in the bunkers of such a vessel, not including non-persistent oil carried on board a vessel as cargo'.

19 Article 9 of Administrative Measures for the Collection and Use of Compensation Funds for Vessel-induced Oil Pollution Damage: 'Non-persistent oil substances that are carried by sea and received within the sea areas of the People's Republic of China, and persistent oil substances passing the sea areas of the People's Republic of China are exempted from compensation funds for vessel-induced oil pollution the owner of the goods shipped persistent oil substances received by the owner of the same goods within the territory of China, the owner of the goods only needs to pay compensation funds for vessel-induced oil pollution damage once'.

20 Article 1(5) of the International Convention on Civil Liability for Oil Pollution Damage, 1969: 'Oil means any persistent oil such as crude oil, fuel oil, heavy diesel oil, lubricating oil, and whale oil, whether carried on board a ship as cargo or in the bunkers of such a ship; Article 1(5) of International Convention on Civil Liability for Bunker Oil Pollution Damage Bunker oil means any hydrocarbon mineral oil, including lubricating oil, used or intended to be used for the operation or propulsion of the ship, and any residues of such oil'.

21 Article 1(5)(a) of International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996: 'Hazardous and noxious substances (HNS) means: (a) any substances, materials, and articles carried on board a ship as cargo, referred to in (i) to (vii) below: (i) oils, carried in bulk, as defined in regulation 1 of Annex I to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended'.



sequential compensation mode. According to Article 17 of the Administrative Measures, claims for the same accident are compensated in a certain order, among which 'direct economic losses caused to fishery and tourism' and 'expenses incurred by measures taken to restore marine ecology and natural fishery resources' rank third and fourth. Presently, the amount of a single compensation is generally not more than 30 million RMB.<sup>23</sup> As the shipowners responsible for pollution cannot afford to compensate those who have suffered losses (Van, 2021), lower-order compensations may not be fully paid. Judging from the compensation cases published by the CSOPC, only the second settlement of Case 2017 (04) supported the claimant's request when fishery economic loss was the only claim. However, the fishery economic loss and natural fishery resources restoration measures fee in Case 2018 (02) have not been settled yet due to 'the thin evidence materials and the order of payment of oil pollution funds. Similarly, the claims for fishing losses made by hundreds of fishermen were also rejected by the CSOPC following the Trans Summer oil spill in 2020. It is criticized that compensation is difficult to obtain through the CSOPC. For example, after the 27 April 2021 Qingdao Ship Pollution Accident, the Qingdao Maritime Safety Administration (MSA) only received 70% of the amount of compensation applied for in one year (Han, Gao, Chen, 2022). Therefore, China's oil pollution fund has not yet achieved efficient and rapid operation, and claimants do not always obtain the protection of their rightful interests. In the protection of marine environmental public interest, there are still the following problems: First, the substantive law is insufficient (Gong, 2019). Chinese law does not clearly stipulate that citizens enjoy environmental rights. It only stipulates that those directly harmed are entitled to compensation for damages, which precludes the right of relevant parties to claim compensation for damage caused by the Marine environment<sup>24</sup>. Second, the procedural law is not yet

sound as China's Civil Procedure Law only provides for the principle of public interest litigation<sup>25</sup>. The relevant legal documents stipulate that organs and organizations prescribed by law may bring a lawsuit to the people's courts for acts that harm the public interest, such as environmental pollution and infringement of the legitimate rights and interests of numerous consumers<sup>26</sup>. The current situation of China's litigation law makes it difficult to effectively protect the public interest of the marine environment when it is infringed.

## 4 Legal advice regarding current challenges

Based on this research, to contend with the complexity of marine environmental governance, China should improve its current legal system for marine oil pollution, strengthen overall judicial practice and cohesion to promote domestic legislation and international law, reference and internalize new achievements and experiences in the international maritime legislation and accelerate the construction of a marine oil pollution damage compensation system with Chinese characteristics. From the macro level, improved methods for this problem can follow the three proposed paths below. In addition, expanding the scope of fund compensation and range of the definition of oil and establishing the emergency are two notable approaches from the perspective of specific institutional design.

22 Claims Manual of CSOPC (2022 Revised Version): 'Ship oil pollution accident refers to the oil pollution damage caused by the leakage of durable cargo oil, non-durable cargo oil, fuel oil, etc., and its residues (such as sludge, oily mixture, oily sewage, etc.) from a ship, or one or a series of events that form the threat of serious and urgent oil pollution damage although there is no leakage'.

23 Article 18 of the CSOPC Administrative Measures: 'The compensation or compensation amount of the compensation fund for any ship oil pollution accident shall not exceed 30 million yuan. The Ministry of Finance may, together with the Ministry of transport, adjust the compensation limit of the fund in accordance with the demand for compensation for oil pollution accidents and the scale of the accumulated compensation fund for oil pollution damage'.

24 See *supra* note 3

25 Article 58, paragraph 1 of Civil Procedure Law of the People's Republic of China: For conduct that pollutes the environment, infringes upon the lawful rights and interests of vast consumers, or otherwise damages the public interest, an author number relevant organization as prescribed by law may institute an action in a people's court.

26 Article 58, paragraph 2 of Civil Procedure Law of the People's Republic of China: Where the people's procuratorate finds in the performance of functions any conduct that undermines the protection of the ecological environment and resources, infringes upon consumers' lawful rights and interests in the field of food and drug safety or any other conduct that damages social interest, it may file a lawsuit with the people's court if there is no authority or organization prescribed in the preceding paragraph or the authority or organization prescribed in the preceding paragraph does not file a lawsuit. If the authority or organization prescribed in the preceding paragraph files a lawsuit, the people's procuratorate may support the filing of a lawsuit

## 4.1 Three levels of improved compensation methods

In the first place, the top-level design of the system and legal system of ship oil pollution damage compensation should be improved. At the domestic level, Chinese lawmakers are advised to promote the revision and improvement of the domestic legal system regarding ship oil pollution damage. It is suggested that specific provisions concerning marine ecological environment protection should be added to the Civil Code to establish a basic legal foundation for ship oil pollution damage compensation. A chapter on 'ship oil pollution compensation should be added to the Maritime Law to clarify the specific path of ship oil pollution compensation and the limitations of liability. The Marine Environmental Protection Law must stipulate the specific requirements of ship oil pollution insurance and the oil pollution damage compensation fund system to unify the standards of judgment regarding such cases. At the international level, policymakers should re-examine the feasibility and necessity of joining the 1992 Fund Convention and 2003 Protocol to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992. Referencing the development of the oil pollution compensation model in Canada will improve China's ability to navigate major oil pollution incidents caused by ships.

Furthermore, compensation capabilities should be further strengthened. Currently, the CSOPC's compensation capabilities are not on the same level as other international funds. Regarding compensation limits, the IOPC has maximum compensation of about 2 billion yuan, the United States' oil pollution fund has a compensation limit of about 6.3 billion yuan and Canada's SOPF has a compensation limit of about 500 million yuan in addition to compensation from the IOPC. In comparison, the CSOPC's current compensation limit of 30 million yuan is below the level of major international or domestic funds. Therefore, the CSOPC can refer to the practice of the IOPC by increasing its compensation limit to successfully manage the need for higher compensation for major ship oil pollution accidents. The CLC1992 provides that for any ship oil pollution accident; the sum of the compensation paid by the IOPC plus the shipowners in accordance with the CLC shall not exceed 203 million Special

Drawing Rights (SDR). If a large oil tanker causes oil pollution damage, the ship-owner's liability limit is 89.77 million SDR; thus, the compensation paid by the IOPC shall not exceed 113.23 million SDR, which is equivalent to nearly 1 billion yuan<sup>27</sup> (Zhou and Zhu, 2019). Consequently, it is thus advised that the current compensation limit for a single accident in China should be raised from 30 million yuan to 1 billion yuan in congruence with China's national conditions. In addition, to raise the compensation limit, a more flexible compensation mechanism based on different types of oil is also needed. The consequences of pollution damage caused by different types of oil also differ in four respects. First, the expenses incurred in taking measures to prevent or mitigate oil pollution damage from vessels and the further loss or damage caused by preventive measures; second, property damage caused by an oil pollution accident outside the ship and the resulting loss of income; third, income loss caused by environmental damage from oil pollution; fourth, the cost of reasonable restoration measures taken or to be taken for the polluted environment. Therefore, different compensation limits should be established according to the type of oil, providing more flexibility in determining the amount of damage caused by different types of oil. To ensure the ability to compensate for the higher fund demand, the Ministry of Finance in collaboration with the Ministry of Transport can adjust the limit of the compensation fund according to such factors as the demand for compensation and the size of the accumulated compensation fund for oil pollution accidents; however, in judicial practice, the Ministry of Finance has not actively exercised this power. With the rapid development of the economy, the principal payment of funds is limited to the owners or their agents who receive persistent oil substances from sea transportation in the waters of China's jurisdiction, and the levy standard is only 0.3 yuan per tonne,<sup>28</sup> which cannot meet the real demand. The funding of China's ships oil pollution compensation fund is limited to a single source, and the levy standard is notably low. The total amount of the compensation fund for oil pollution damage is inadequate, and financial or corporate tax burdens can be moderately reduced by increasing social contributions, the operating income of the fund itself, and fines for environmental administrative penalties.

27 Article V(1) of the International Convention on Civil Liability for Oil Pollution Damage: 'The owner of a ship shall be entitled to limit his liability under this Convention in respect of any one incident to an aggregate amount calculated as follows: (a) 4,510,000 units of account for a ship not exceeding 5,000 units of tonnage; (b) for a ship with a tonnage in excess thereof, for each additional unit of tonnage, 631 units of account 2, in addition to the amount mentioned in sub-paragraph (a); provided, however, that this aggregate amount shall not, in any event, exceed 89,770,000 units of account'.

28 Article 6 of Administrative Measures for the Collection and Use of Compensation Funds for Vessel-induced Oil Pollution Damage: 'The levy rate of compensation funds for vessel-induced oil pollution damage is 0.3 yuan per tonne for persistent oil substances. The Ministry of Finance may determine and adjust the levy rates or decide to suspend the collection of compensation funds for vessel-induced oil pollution damage together with the Ministry of Transport in light of factors such as the compensation demands for vessel-induced oil pollution damage, the quantity of persistent oil substances arriving at ports, the cumulative amount of compensation funds for vessel-induced oil pollution damage and bearing capability of goods owners'.

Thereafter, the internationalization process of China's ship oil pollution system should be promoted. Actively promoting the construction of the rule of law on ship oil pollution with Chinese characteristics can effectively improve the ability to protect the nation's marine environment, promote the overall development of the shipping economy, balance the interests of all stakeholders, safeguard social fairness and justice, demonstrate an international image of equal responsibility and build a maritime community with a shared future. Marine oil pollution is not limited to oil pollution accidents that occur in waters and should include oil that directly affects national waters entering from the high seas. Policymakers must urgently strengthen research regarding legal systems concerning international ship oil pollution damage compensation and promote the internationalization process of the marine oil pollution system in China to form a more expedient, standardized, equitable, and fair marine ecological environmental protection legal system and actively advance the nation's marine environmental governance.

Ultimately, the system of public interest litigation dealing with the compensation for oil pollution caused by ships should be improved. Civil public interest litigation is a special form of civil litigation, the environmental public interest litigation caused by ships oil pollution has more particularity, prosecution review, distribution of the burden of proof, and the exercise of court functions and other specific judicial procedures, it is difficult to apply the general provisions of our civil procedure law (Zhang, 2019). In order to solve the problem of public interest litigation on oil pollution caused by ships, it is necessary to revise relevant laws, timely promulgate relevant judicial interpretations, and refine relevant legal issues. To be specific, the following measures can be taken: First, strengthen the construction of marine environmental pollution courts. Judging from the public interest litigation cases of oil pollution from ships accepted by the court, most of the professional and technical problems involved in such cases are the same or similar, and the methods of damage recognition, the principle of liability, the scope of compensation and the responsibility are basically the same (Fu, 2017). Setting up environmental protection courts to hear public interest litigation cases on marine environmental pollution will help unify law enforcement standards, improve the quality of cases, reduce judicial costs and give full play to judicial functions. The second is to standardize the legal procedures of public interest litigation on oil pollution by filing and reviewing public interest litigation on oil pollution caused by ships, limiting the plaintiff's right to dispose of public interest litigation on oil pollution caused by ships, establishing an injunction system against pollution from ships, and appropriately reducing the cost of public interest litigation on oil pollution caused by ships. It thus is expected to establish a more standardized, fair, and just legal system for marine ecological and environmental protection, and actively promote national marine environmental governance.

## 4.2 Expanding the scope of fund compensation

The compensation scope of the CSOPC is expected to include indirect and pure economic loss and the cost of reasonably required resource recovery measures. It is noteworthy that whether a fund needs to compensate for pure economic losses remains controversial internationally. Those who support compensating for pure economic losses, such as the IOPC, clearly stipulate that compensation is also payable for the loss of earnings caused by oil pollution suffered by persons whose property has not been polluted, under certain circumstances.<sup>29</sup> Those who oppose paying for pure economic losses, such as Scotland in the UK, strictly adhere to the legal principle that damage must be directly caused by pollution. In the *Braer* oil spill incident, the Scottish Supreme Civil Court noted that the fund is only responsible for immediate claims but not distant claims.<sup>30</sup> In contrast, the judicial practice in the United States demonstrates an evolution from an initial refusal to the gradual acceptance of pure economic losses. The *Robins Dry Dock Rule*, established by the United States Supreme Court in 1928,<sup>31</sup> stipulated that in maritime tort cases, compensation must be based on physical damage to a property interest (Xie, 2002), thus denying pure economic loss; however, with the development of US maritime transportation and increasing oil trade volume, cases of pure economic losses suffered by the parties are gradually rising, and this principle has generated considerable trouble for US judicial practice. Consequently, some circuit courts began to agree to follow the traditional tort analysis method of predictability or proximate cause, and the *Robins Dry Dock Rule* was shaken. With the introduction of the *Trans-Alaska Oil Pipeline Management Act* and *OPA1990*, this principle was finally ruled out. This example of US legislative progress indicates that under the background of active maritime transportation and oil trade, it is the general trend to admit pure economic losses. However, because there is no physical damage to property in pure economic loss and the causal link may be far away, abusing such losses could lead to an endless array of plausible claims like falling dominoes. To avoid the abuse of compensation for pure economic losses, the IOPC stipulates that the cost of such compensation should be reasonable and is

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29 Article 1.4.9 of the IOPC Claims Manual: 'Under certain circumstances compensation is also payable for loss of earnings caused by oil pollution suffered by persons whose property has not been polluted (pure economic loss)'.

30 See *Brauer v. Central Trust Co.*, 77 A.D.2d 239, 433 N.Y.S.2d 304 (N.Y. App. Div. 1980)

31 See U.S. Supreme Court, *Robins Dry Dock & Repair Co. v. Flint*, 275 U.S. 303 (1927)

granted only for additional costs resulting from the need to counteract the negative effects of pollution. Under such criterion, marketing campaigns of too general a nature are not accepted when the claim is seeking pure economic compensation.<sup>32</sup>

As noted above, China is the largest crude importer in the world. Moreover, as one of the most developed countries in maritime transportation, China owns seven of the 10 busiest ports in the world (Ship hub, 2022). From this perspective, China has a great similarity to the United States in the 1980s; when US maritime shipping was undergoing burgeoning development, eight of the 30 busiest ports in the world were located in the country (JFIR, 2022). Behind active maritime shipping and accompanying oil pollution, another national condition of China is that many individuals' livelihoods depend on the marine environment, particularly those who engage in coastal tourism and fishery industries. In 2021, Chinese coastal tourism and marine fisheries accounted for 60.5% of the added value of the marine industry, a total increase of 2,059.4 billion yuan (Ministry of Natural Resources of PRC, 2022). The Claims Manual of the IOPC offers instances in which the oil pollution from ships would seriously damage such individuals' property and livelihoods, as a fisherman may be prevented from fishing when nets have been contaminated or the area of the sea where fishing is usually undertaken is polluted. Similarly, an owner of a seashore hotel or restaurant may suffer losses because the number of guests falls during a period of pollution when the nearby public beach is contaminated. Under the Chinese national condition, excluding pure economic losses deprives the rights of people who are vulnerable to loss of livelihood to be fairly and sufficiently compensated. Therefore, the CSOPC can refer to IOPC regulations when bringing such losses into the scope of compensation, as there must be a reasonably proximal condition between the pollution and alleged damage.

### 4.3 Establishing emergency fund

To meet different types of claims under a specified compensation limit, the IOPC adopts a 'proportional compensation model', in which when the total amount of claims determined exceeds the compensation limit, the amount of compensation paid to each claimant is reduced proportionally to ensure equal treatment of all claimants.<sup>33</sup> This model has been reflected in the Chinese Maritime Law (Draft for Comment).<sup>34</sup> However, according to the Administrative Measures and Claims Manual of the CSOPC, the 'priority compensation model' prioritizes full compensation of emergency expenses incurred for reducing oil pollution

damage. From the perspective of marine environmental governance, the current compensation mode of CSOPC suffers from several defects. First, the fairness of compensation is insufficient. (Li and Hu, 2018). In practice, the claims of large-scale emergency disposal and clean-up units are often met, while individuals and small and medium-sized enterprises in relatively weak positions and countries that claim marine ecological losses do not receive full compensation; Second, the current ranking is not proportional to the amount of compensation. Taking Case 2017 (02) as an example, the natural fishery resources and marine ecological restoration costs, which accounted for 75.85% of the total claims, only rank fourth (Pan, 2018) but represent a consideration, which is closely related to marine environmental governance and is most in need of financial support. Although there are many disadvantages to the sequential compensation mode, some scholars argue that this model basically aligns with the first shift in China's oil pollution control. In particular, if priority is given to the compensation of emergency costs of cleaning up and reducing damage, the costs of the pollution cleaning enterprise suing the MSA for not receiving payment will be avoided.<sup>35</sup> This will encourage the MSA to quickly organize urgent action after pollution occurs (Hubei Higher People's Court, 2018). Considering the stability of laws and the effectiveness of marine environmental protection measures, the emergency fund under the US legislation could provide a useful reference in this regard.

The OSLTF of the United States has two major components, the principal fund, and the emergency fund. The emergency fund is available for federal on-scene coordinators to respond to oil discharges and for federal natural resource trustees to initiate

<sup>32</sup> Article 3.5 of the IOPC Claims Manual.

<sup>33</sup> Article 1.2.3 of the IOPC Claims Manual: 'If the total amount of a claim has been determined to exceed the limits of compensation available under the 1992 Civil Liability Convention and the 1992 Fund Convention, the amount of compensation paid to each claimant will be reduced proportionally. When there is a risk of such a situation, the 1992 fund will have to limit claims to ensure that all claimants are treated equally. If the uncertainty of the total amount of claims has been determined to be reduced, the proportion of compensation can be increased in the future era.'

<sup>34</sup> Article 13.28 of the Chinese Maritime Law (Draft for Comment): 'If the amount of the confirmed claim for compensation for pollution damage filed with the compensation fund for oil pollution damage exceeds the compensation limit specified in article 13.27 of this chapter, each claimant shall be compensated in proportion to the amount of pollution damage determined.'

<sup>35</sup> For example, in the 2016 *Zhongheng 9* sinking accident, the cleaning company filed a lawsuit against the local MSA for compensation for completed clean-up and disposal work.

natural resource damage assessments. The OSLTF's emergency fund is capitalized by an annual \$50 million apportionment from the OSLTF and is primarily used to pay for federal removal and natural resource damage pre-assessment activities (Song, 1999). One key function of OSLTF's emergency fund is its immediate provision of funding for emergency response for actual discharges or substantial threats of discharge (Hemmingier, 2021). By establishing the emergency fund, the OSLTF enables US Coast Guard to respond immediately and prevent the deterioration of a spill, and the automatic appropriations of the emergency fund increase the fund demand and establish higher requirements to the determination of the lawmakers and government to achieve marine environmental governance. Though facing fiscal pressure, the US Congress firmly endorsed the emergency fund by adding to the OSLTF's emergency fund and eventually establishing it as a 'no-year' fund so that any unexpended amounts rolled over to future years (David, 2010).

Although the CSOPC prioritizes emergency costs, it does not pay for the clean-up and disposal operations in advance, resulting in a dilemma for marine environmental governance. The MSA is not available to immediately fund actions to begin mitigating environmental damage at once (for instance, removing oil, assessing natural resource damage, and controlling the expansion of spills), which reduces the enthusiasm of relevant units to participate and aggravates the damage to the marine environment during the optimal time to take action. Furthermore, the emergency costs may exhaust the fund, leading to insufficient compensation for losses of marine ecology and natural fishery resources. By separating the CSOPC's emergency fund from the principal fund, the MSA will be capable of immediately supporting oil spill emergency response to minimize the damage of oil pollution caused by ships (Ling et al., 2013). Moreover, the emergency fund could serve as an amendment to CSOPC's priority compensation model, as it allows the remaining principal fund to advance the compensation order of expenses incurred for measures taken to recover marine ecology and natural fishery resources and actively safeguard the marine public interest.

## 5 Conclusion

Ship oil pollution is a major complication in marine environmental governance. To compensate the victims of ship oil pollution, international organizations and individual countries have set up various compensation funds for ship oil pollution damage, forming three main paths: the IOPC, the United States, and the Canadian model. As a national oil pollution compensation fund independent of the IOPC, the CSOPC has had a positive influence in shaping China's ship oil pollution control; however, from the perspective of marine environmental governance, the CSOPC continues to present many deficiencies, which are embodied in the incomplete scope of compensation and improper compensation methods and has not fulfilled its due role in the protection and

development of marine environmental governance. Given the above defects, the relevant measures of the IOPC and OSLTF can be referenced to expand the scope of compensation and definition of oil and add an emergency fund to enhance the role of the CSOPC in marine environmental protection to improve the compensation system of ship oil pollution damage in China and advance marine environmental governance. Abundant natural resources, a fine human environment, and a healthy natural ecology are essential conditions for human survival and the common interest of all mankind. Therefore, on the basis of efficient utilization of resources, reduction of marine environmental pollution, and focus on the development of quality and efficiency, efforts to build a resource-saving, environment-friendly society have become a global consensus. The improvement of the Chinese compensatory fund system for oil pollution damage caused by ships will not only help to provide legal remedies for the injured parties concerned but also effectively protect the public interests of the sea, thus providing full support for the governance of the marine environment.

## Author contributions

Fu B-C and Li H-R contributed to the conception and design of the study. Li H-R wrote the first draft of the manuscript. Fu B-C and Li H-R wrote sections of the manuscript. Fu B-C completed review and editing. Fu B-C found the funding acquisition. All authors revised every version of the manuscript. All authors contributed to the article and approved the submitted version.

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