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Dilemma of Multisubject Co-Governance of Global Marine Ecological Environment and Implementation Path

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Abstract: The governance of the global marine ecological environment is closely related to human life and needs to adopt a multisubject co-governance system. There is a lack of understanding of the need for co-governance by multiple subjects for global marine ecological environment protection. Global marine eco-environmental multisubject governance is characterised by fragmentation, lack of coordination, and other issues. It should be recognised that global marine ecological environment protection is a task for all to protect humankind's common heritage erga omnes. At the same time, the idea of a global marine ecological environment protection led by an ocean community with a shared future should be established. A global marine ecological environment multisubject co-governance model is set up by establishing a global marine ecological environment governance model alongside a multisubject co-governance committee.

Keywords: marine ecological environment; multiple subjects; co-management; ocean community with a shared future



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1. Current Status of Global Marine Ecosystem Governance

1.1. Current Situation of Marine Ecological Environment Pollution

With the increasing exploitation and exhaustion of land resources, deep-sea exploitation has become inevitable for human beings. The ocean is the largest natural ecosystem on earth and key to human survival and development. There is no doubt that the 21st century is the century of the ocean. With the rapid development of the marine economy, each country's marine ecological environment faces more risk than they can bear. Advances in technology and ocean transportation have aided deep human exploration of marine life. It has resulted in an increased number of marine surveys, deep mining of the seabed and remote areas, a sharp drop in fishery resources, and the rapid expansion of global maritime trade, which has led to an increased use of the oceans outside the national jurisdictions [1]. Surveys show that human use of the oceans outside national jurisdictions has gone beyond traditional navigation and fishing activities. It has extended to marine genetic resources, bioexploration, deep-sea mineral exploration, scientific research and exploration, seismic experiments, etc. [2]. Although some progress has been made in international marine governance since the 1994 United Nations Convention on the Law of the Sea (UNCLOS) came into force, it still faces enormous challenges. Human activities in international waters that pose actual or potential threats to the marine environment include illegal, unreported, unregulated, and disruptive fishing practices, invasive species, excessive mineral mining, oil pollution from ships, waste dumping, and microplastic pollution. They lead to warm waters, increase water acidity, and reduce marine biodiversity. The "tragedy of the commons" occurs in the ocean [3], and there is a worsening trend that is threatening marine life, coastal and island regions, and national economies

According to statistics, the oceans absorb 93 percent of the extra heat stored by warmer air, sea, land, and melting ice; moreover, increased carbon dioxide concentrations in the atmosphere contribute to artificial climate change and ocean acidification [4]. According to the National Oceanic and Atmospheric Administration (NOAA) data, the concentration of carbon dioxide in the atmosphere rose 32.62 percent from 1959 to April 2021 [5]. Ocean

acidity has increased by an average of 30 percent and is expected to increase by 170 percent by 2100 to a pH of around 7.75 [6]. The warming and acidification of seawater directly affect marine biodiversity. The distribution of most marine species will shift to the polar and deeper waters, resulting in the redistribution of the fishing potential of fish and invertebrates [7]. Pollution from land has a significantly negative impact on the oceans. For example, there are nearly 10,000 land-based sources of pollution in the seas in China, with an average of one pollution source per 2 km of coastline, which is a serious issue. Marine-based industrial development, including the ever-changing marine science and technology, has also brought new ocean-related problems while promoting the development of marine natural resources. Many claim that “mankind is destroying the ocean” [8].

In a theoretical sense, the damage caused by human activities to the marine ecosystem mainly includes pollution damage and exploitation damage. Pollution damage, also known as input damage, is damage caused by inappropriate human discharge and the input of environmental pollutants into the ocean. These include ship oil pollution, which accounts for 12 percent of marine pollution. Exploitation damage, also known as removal damage, refers to damage caused by improper removal or development of a substance or energy from the ocean [9]. However, in reality, these two kinds of damage are often inseparable and have no strict boundary. The interaction between human activities and the marine ecological environment, especially the uncertainty and unpredictability of the impact itself, increases the damage degree of marine ecological environment pollution. Given this, the United Nations Division for Ocean Affairs and the Law of the Sea issued Resolution 70/235, “First Global Integrated Ocean Assessment”, in January 2016. According to the assessment report, both pollution damage and development damage have caused irreversible damage to our marine ecosystem, and the carrying capacity of the marine ecosystem and its ability to clean itself are nearing their limit [10]. Therefore, no matter the perspective, be it human self-protection or marine ecological environment protection, there is an urgent need to control these two kinds of damage.

1.2. The Current Situation of Multisubject Governance of Marine Ecological Environment

Oceans cover approximately 71% of the earth’s surface, playing a significant role in climate regulation, biodiversity conservation, and sustainable development of the earth. The marine ecological environment itself has unity and mobility, and its governance has raised great concern in the world. As early as the 1950s, to combat the pollution of the oceans by oil discharged from ships, the International Convention against Oil Pollution at Sea was adopted at the London Conference on 12 May 1954. The International Maritime Organization has been responsible for the implementation of the Convention. Since the Convention’s adoption, relevant international organisations have formulated and adopted a series of treaties on marine environment protection. They include the 1969 Convention on International Intervention in Oil Pollution Accidents on the High Seas, the International Convention on Civil Liability for Oil Pollution Damage, the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters and its 1996 Protocol, the 1973 International Convention for the Prevention of Pollution from Ships and its 1978 Protocol, the 1982 UNCLOS, the 1990 International Convention on Oil Pollution Preparedness Response and Cooperation, the 1995 Convention on Biological Diversity, and more. In 1972, the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) first discussed and defined marine pollution [11]. Since then, many international conferences, such as the United Nations Conference on the Human Environment and the Third United Nations Conference on the Law of the Sea, which discuss marine environment issues, have laid the institutional foundation for marine ecological environment governance.

In recent years, to strengthen the governance of the global marine ecological environment and achieve sustainable development goals, the United Nations and its relevant institutions have adopted a series of resolutions. For example, the UN General Assembly

(UNGA) adopted the UN 30 year Agenda for Sustainable Development on 25 September 2015, in which Article 14 aims for the sustainable utilisation and development of the oceans and their resources. On 9 June 2017, the United Nations convened another important meeting to support implementing the 14th Sustainable Development Goal (SDG) on oceans and seas, adopting a declaration entitled *Our Ocean, Our Future: Call for Action* [12]. It was the first time the United Nations convened a meeting on advancing a single goal in the 2030 Agenda for Sustainable Development, which has been hailed as a historic conference on ocean governance. The resolution of 10 May 2018, “Towards a Global Pact for the Environment”, which was adopted by the UNGA, was sponsored by the Clubdes Juristes and supported by jurists, stakeholders, and representatives of environmental groups from more than 40 countries and regions around the world, to establish a framework for the development of a global environmental convention to consolidate the effectiveness of global environmental governance and open the negotiation process for a treaty [13].

At present, the main modes of multisubject governance of marine ecological environment include unilateral governance by the governing countries, bilateral or multilateral agreements between the governing country and other governments or international organisations, contractual cooperative governance between intergovernmental and non-governmental international organisations, and the “Unilateral Authorization” governance model, which demonstrates an expansion of the competencies of EU institutions towards its member states. However, the EU approach, largely regarded as a success, has also been criticised as tending towards unilateralism [14]. In any case, it is clear that the international governance of the marine environment, which used to be characterised solely by state actors or a coalition of state actors, is beginning to shift to a global governance model as a result of the inclusion and increasingly deeper involvement of nonstate actors, such as nongovernmental organisations (NGOs) and multinational corporations.

It is worth pointing out that with the rapid development of the international shipping industry, cooperation on the marine ecological environment has been continuously promoted and deepened, and some achievements have been made in the control of marine oil pollution. For example, oil pollution caused by ships was reduced by about 60% in the 1980s, and oil spillage has also decreased significantly in the past 20 years [15]. However, despite this, marine ecological environment governance is still problematic. Even in recent years, the progress in marine pollution control cannot keep pace with the pollution rate, and some marine ecological environment governance problems have not been fundamentally and effectively curbed. For example, pollution from land-based sources, oil pollution from ships, acidification of seawater, and pollution from seabed activities will be spread to the whole ocean through ocean currents, which will do irreparable damage to the global marine ecosystem. Bilateral or multilateral agreements for the governance of marine ecological environments are often regional, one-sided, and postpreventive. For example, the Action Plan for Environmental Protection, Management, and Development of the Marine and Coastal Areas of the Northwest Pacific Ocean, in which China participates, is an integral part of the United Nations Environment Programme regional seas project that includes Russia, Japan, Korea, and China. The program aims to manage the ocean and its resources in the Northwest Pacific region to achieve human health, ecological integrity, and sustainable development for future generations. Although the program has played a positive role in protecting marine ecosystems in the Northwest Pacific, the regional nature of the program makes it “powerless” in the face of global marine ecosystem issues [16]. The main reason for this is that the global marine ecological environment does not need unilateral or multilateral local or regional governance, but a high degree of joint and common governance at the international level; this is the only way to avoid the marine “tragedy of the commons”.

This paper analyses the existing problems in marine ecological environment governance and focuses on realizing the path of global marine ecological environment shared governance by multisubjects.

2. The Dilemma of Achieving Multisubject Co-Governance of Global Marine Ecological Environments

2.1. Lack of Awareness of the Necessity of Global Multisubject Co-Governance

There is no doubt of the strategic position of oceans in the 21st century. Though global, governance of the marine ecological environment is still dominated by countries or international intergovernmental organisations, with global NGOs playing a limited role. This stage is characterised by the diversification of the members of marine ecological environment governance. However, there is a lack of a mutual coordination mechanism among the various subjects, especially among countries and international intergovernmental organisations.

Multisubject co-governance is closely related to Hermann Haken's synergetics and Ostroms' polycentric governance theory. For the former, synergy occurs between subsystems when external energy or aggregation of matter reaches a critical value, while the core of Ostroms' polycentric governance theory is that it is possible for a group of interdependent individuals to "organize themselves for autonomous governance"; by contrast, "multisubject co-governance" combines the core connotations of synergy and polycentricity, linking multiple subjects at a node and producing better results than fragmented subjects [17].

The international marine ecological environment governance system is mainly based on the United Nations as the centre and the regional countries as the system's main body. For example, as of 2020, the number of parties to the UNCLOS was 168; the number of parties to the 1994 agreement relating to the implementation of Part XI of the Convention of 10 December 1982 was 150; and the number of parties to the 1995 agreement for the implementation of the provisions of the Convention of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks reached 91 after the addition of Cambodia, on 6 March 2020 [18]. To effectively govern the marine ecological environment, the international framework and guidelines established by international organisations and agencies for this purpose mainly include the 21st century agenda adopted by the United Nations Conference on Environment and Development in 1992. The agenda contains 21 sustainable development action plans on global governance, the seventeenth chapter of which specifically discusses the ocean, marine protection, and the exploitation and utilisation of seabed resources [19]. Since then, more documents on global governance have dealt with ocean governance. These include Guidelines for Integrated Coastal Zone Management issued by the World Bank in 1993, Code of Conduct for Responsible Fisheries by the United Nations Agriculture and Food Organization (FAO) in 1995, Global Plan of Action for the Protection of the Marine Environment from Land-Based Activities by the United Nations Environment Programme in 1995, a review of the Convention on Biological Diversity 2000 on the existing instruments for implementing the Convention's integrated management of marine and coastal areas and their implementation, Implementation Plan of the World Summit on Sustainable Development in 2002, the outcome document of the 2012 United Nations Conference on Sustainable Development entitled "Our Future", 2030 Sustainable Development Plan in 2014, and the Agenda for Action for Addis Ababa of the Third International Conference on Financing for Development by the United Nations. This is in addition to regional organisations' document such as the European Commission's Demonstration Programme on Integrated Coastal Zone Management, which was launched in 1996 to promote sustainable development of the EU coastal zone [20], and An Agenda for the Future of Our Oceans, which is the first joint statement document on global ocean governance at the EU level [21]. Of course, the main actors involved also include global NGOs who have contributed to the global marine ecosystem governance, such as the World Conservation Union (IUCN), the only international organisation in the field of natural environment protection and sustainable development that is a permanent observer to the United Nations General Assembly, which adopted the Intersectoral Integrated Plan for Coastal Areas in 1993.

In summary, from a horizontal perspective, there is no lack of relevant action program documents for marine ecosystem governance worldwide; from a vertical perspective,

relevant documents are issued almost every year, and their contents cover different dimensions of marine ecosystem governance. However, the discussion of global governance has so far been limited to various proposals for improving its governance. For example, Markus Jachtenfuchs and NicoKrisch, in their article “The Application of the Principle of Subsidiarity in Global Governance” [22], make a good argument about the role of the principle of subsidiarity in global governance but do not address the principle of application to marine ecological environment governance with the participation of multisubjects in the global governance framework. Some scholars still focus on their neighbours or local areas for marine ecosystem governance [23]. However, the unity of the ocean determines the limitations of such regional multisubject governance. Indeed, as early as 1967, in a speech to the United Nations General Assembly, Arvid Pardo argued that “all aspects of ocean space are interrelated and should be treated as a whole”. [24]. It is undeniable that the space for marine ecological resources and the use of resources require “comprehensive governance” by countries or regions. With the ocean taken as a whole—the high seas, international seabeds, resources, etc.—and the common heritage of humankind, there is a need for multisubject participation in the global governance of the ecological environment. In other words, marine ecological environment governance needs to be carried out under a global governance framework. Countries or regions need to raise awareness of the need for multisubject global marine ecological environment protection to speed up its realisation.

2.2. Concept of Global Marine Ecosystem Governance Lags Behind

Thought is the forerunner of action, and ideas determine the direction of practices. However, because some countries emphasise the supremacy of their own or group interests, adopting a policy system based on confrontation or exclusion, there is bound to be conflict with the reality that solving global marine ecological environment problems requires cooperation among all subjects. Moreover, in the distribution of the achievements of global governance, looking horizontally, there are problems of unreasonable, unbalanced, and unequal distribution among countries and a lack of consideration of sustainable development for future generations. Thus, it is difficult to share the achievements of global governance across generations. These are all issues that need to be addressed in the reform of the global governance system [25].

Global marine ecological environment governance is a key topic in global governance. The concept of co-governance of global marine ecological environments is the premise and foundation for multiple subjects to participate in the governance of marine ecological environments and the construction of a negotiation mode. The key to solving this dilemma lies in replacing the traditional idea with the modern concept of an ocean community with a shared future [26].

In recent years, a series of “black swan” incidents represented by Britain’s exit from the European Union and the “antiglobalisation” measures taken by the United States have made the neoliberal and individualistic global governance values established in the West since the 1980s nearly bankrupt. Although neoliberalism originated in the field of economics, it has been practiced in social, political, cultural, and social labour movements [27]. Neoliberalism is based on individualism and over emphasises “self-interest”. In this regard, some scholars have pointed out that neoliberalism has from the beginning viewed globalisation as a historical process of ensuring wealth creation and profit distribution across national borders through global resource allocation by weakening arbitrary interventions imposed by sovereign governments [28]. This concept is manifested in the zero-sum game, winner-takes-all national strategy and way of doing things and, in the marine ecological environment, the excessive plundering of marine resources for the sake of transient achievable benefits that cause irreversible damage to the global marine ecological environment. In this regard, Professor David Lane of Cambridge University believes that one of the inherent flaws of neoliberalism is that it “creates environmental unsustainability” [29].

For these reasons, the last century witnessed many marine pollution incidents. From the Exxon Valdez oil spill in 1989 to the Gulf of Mexico oil spill in 2010, then Japan’s

Fukushima nuclear power plant incident in 2011, and the oil spill accident on the Penglai 19-3 oil field jointly developed by Conoco Phillips and CNOOC, each pollution event was large scale, wideranging, and caused serious damage to the marine ecological environment. On 13 April 2021, the Japanese government disposed of the nuclear wastewater from the Fukushima nuclear plant accident by discharging it into the sea, which has had far-reaching implications on the marine environment. The liberal values that underpin the marine ecological environment governance have a natural latent effect of latency. Therefore, the concrete manifestation is the damage prevention mode of marine ecological environment governance. Damage prevention mode in marine ecological environment governance aims to “prevent” the damage of marine ecological environment when the damage cannot be determined, has already occurred, or the damage is further expanded. However, this kind of prevention cannot completely change the current marine ecological environment governance situation nor can it reverse the damage that has already occurred. Therefore, the backward nature of marine ecological environment governance is also one of the causes of frequent marine ecological environment pollution incidents.

It is worth noting that it is difficult to effectively deal with the existing crisis of marine ecological environment governance because of the neoliberal underpinnings of marine environment governance. After all, human marine resources are limited, and the safety of the marine ecological environment is closely related to human development. Therefore, human activities greatly impact the marine ecological environment, and various marine ecological environment face an increasing risk of damage. For example, the “dead zones” in near-shore waters caused by seawater eutrophication have continued to expand over the past five decades. To date, there are more than 400 “dead zones” worldwide, covering an area of 240,000 square meters [30]. As far as local waters are concerned, the ability of the ocean to rid itself of pollution is approaching its limit. Suppose we want to realise the sustainable development of limited marine ecological environments and achieve intragenerational equity and regional equity. In that case, the original dominant value of international governance must be abandoned for transformative global governance values. Based on this, the participation of multiple marine ecological environment governance subjects must not remain the neoliberal-dominated damage prevention type of marine ecological environment governance concept. Instead, it should be based on an ocean community with a shared future, targeting the existing marine ecological environment situation to provide a conceptual basis for the construction of multisubject marine ecological environment governance mechanisms.

2.3. Unilateralisation or Regionalisation of Marine Ecological Environment Governance

Global multisubject marine ecological environment governance is a holistic and integrated approach to marine environment governance. However, the current marine ecological environment governance is underpinned by “new regionalism” such as unilateralisation or regionalisation. Throughout the world, marine ecological environment governance mainly includes unilateral governance by sovereign states, bilateral cooperation among governments, regional governance by multilateral agreements between organisations and governments of coastal countries, and regional governance by intergovernmental organisations. James H. Mittelman conducted a typological analysis of contemporary “new regionalism” and proposed a typology of subnational microregional governmental cooperation, transnational subregional governmental cooperation, and supranational macroregional governmental cooperation [31].

It is worth emphasising that unilateral or regional governance by sovereign governments is still the basic form of marine ecological environment governance. For example, Costa Rica announced a new marine protected area on the country’s Pacific coast, home to 37 high-value marine species, three turtle-hatching sites, and three areas of importance for dolphins, whales, and other aquatic mammals. The country also launched a National Wetlands Policy (2017–2030) and recently outlined a long-term National Sanitation Policy to prevent further water pollution [32]. The Regional Agreement on Access to Informa-

tion, Public Participation, and Justice in Environmental Matters in Latin America and the Caribbean was adopted on 4 March 2018 and came into force on 22 April 2021, per Article 22(1). There are currently 12 contracting parties. According to Article 2 of the present agreement, one of the objectives is to guarantee the creation and strengthening of capacities and cooperation, contributing to the protection of the right of every person of present and future generations to live in a healthy environment and to sustainable development [33].

Furthermore, the Palagos Marine Reserve in the Mediterranean, the South Shelf Marine Reserve in the South Orkney Islands, and the network of marine reserves in the high seas of the Atlantic Ocean have been established [34]. It is clear that when facing global marine environmental governance issues, establishing marine protected areas is one of the best options for maintaining the health of the oceans and avoiding further marine degradation. The United Nations and its subsidiary bodies and relevant specialised agencies also play a significant role in promoting global marine ecological environment governance. The United Nations Environment Programme, the United Nations Development Programme, the United Nations Commission on Sustainable Development, the Office of Legal Affairs of the Administrative Department of the Law of the Sea, the World Food and Agriculture Organization, the International Maritime Organization, and the International Seabed Authority play active roles. Under the coordination and management of the “Ocean and Coastal Area Network”, they have made great contributions to maintaining marine biodiversity and sustainable development.

By dividing marine areas into different spaces, regional international organisations, such as the Arctic Council and the Indian Ocean Tuna Commission, govern specific problems in different sea areas. However, regional organisations have natural disadvantages, such as fragmenting the integrity of the world’s oceans and forming a situation of self-interest-based self-administration and exacerbating fragmentation of governance [35].

Of course, spontaneous nongovernmental marine environmental organisations, NGOs, and multinational corporations have also played key global marine ecological environment governance roles. These international NGOs include the Marine Stewards Committee for the Conservation of Marine Ecosystems, International Marine Conservation and Coastal Cleanup Organization, the Inuit Arctic Circle Council, which governs the polar seas, Scientific Committee for Antarctic Research, Greenpeace International, and the International Union for Conservation of Nature and Natural Resources. According to the 2018 Conservation of the Earth Report published by the International Union for Conservation of Nature (IUCN), more than 7 percent of the world’s marine areas is well protected, a rise of 3.2 percent over 2016. In the case of China, according to the latest survey report by the China Marine Environmental NGO Capacity Development and Network Building Project, as of 2017, there were 191 organisations in the field of marine environmental protection in China, including 18 foreign-related marine environmental protection organisations [36]. Apart from Beijing, these organisations are mainly located in Hainan, Guangdong, Fujian, Shandong, and other major coastal provinces in China that are committed to the conservation of marine resources, environmental protection, and the protection of biodiversity in China’s coastal waters.

There is no denying that countries worldwide are committed to strengthening marine-protected areas to achieve the sustainable development goals, but the borderless state of the ocean is original, permanent, and unavoidable [37]. It is still the tip of the iceberg compared to the overall marine ecological protection. The main reason for this is the emergence of populist and nationalist tendencies in the international community, which has led to a certain shift in globalisation and the return of the diluted role of government in many countries, which has been given a new mission by populism and nationalism. For example, individual countries have insisted on unilateralism and continuously adopted “antiglobalisation” measures, no longer emphasising multilateralism, and even unwilling to participate in the World Environment Convention. Thus, worldwide, pessimistic arguments such as the “collapse”, “end”, and “death” of the existing international order gradually

established after the Second World War have become rampant, and the international community is struggling to fulfil its “obligation erga omnes” in environmental protection.

Some countries have chosen to withdraw from relevant international treaties or form regional interest chains based on their interests, showing a negative turn of unilateralisation or regionalisation, which is not conducive to the promotion of global marine ecological environment governance. As mentioned above, the global marine ecological environment governance should realise the joint participation and co-governance by multisubjects, which is the optimal choice for the governance of marine ecological environment. The substantive multisubject coordination mechanism is the premise and foundation of multisubject participation in global marine ecological environment governance. Considering this, some countries are paying attention to strengthening regional environmental cooperation in Northeast Asia and jointly formulating and implementing the Northwest Pacific Action Plan and East Asian Maritime Plan. However, the distribution of member states of each action plan is still concentrated in the region, which has no essential significance for the protection of the global marine ecological environment. Based on this, the fragmentation of the marine ecological environment governance system also requires the international community to strengthen global multisubject co-governance mechanisms. This is the only way to create the possibility of and realise co-governance of the global marine environment by multiple subjects.

2.4. The Lack of Coordination in the Global Marine Ecological Environment of the Multisubject Co-Governance Committee

As mentioned earlier, the states as the subject of global marine ecological environment governance, intergovernmental organisations, and NGOs are diverse, but the role of each governing subject is not balanced. Thus, the status and role of state actors and nonstate actors are different. The sovereign state is the dominant force, while the NGOs, as auxiliary forces, mostly play their role through intergovernmental organisations and are relatively weak. Moreover, developed countries have strong roles and influence in setting topics, formulating and implementing rules, while developing countries have a relatively weak position [38]. As sovereign states, regional governance and global governance have different values, interests, and rulemaking and governance modes. Therefore, the governance of the global marine ecological environment still exists in the out-of-the-corner pattern of pollution, while in governance, even in some areas, there is a lack of governance rules, the lack of effective integration, and a co-governance consultative governance model.

Despite this, the international community has made considerable efforts to improve the marine ecological environment through relevant legislature designed to protect against marine ecological environment system damage globally. Chapter XII, Article 194, Paragraph 2 of the UNCLOS is a general provision for protecting marine ecological environment systems from damage. However, in practical operation, protection against marine ecological environment system damage often goes beyond marine ecological environment governance, incorporating sea power and maritime rights and interests disputes. However, if the international system wants to create an optimal design, various subjects' interests, demands, and values must be considered. While a series of bilateral, multilateral, and regional treaties, with the 1982 UNCLOS at their core, have shaped the new international maritime order, the diversification of governing subject inevitably results in the decentralisation of power from one centre to multiple centres. However, there is no platform for consultation, collaboration, and interconnection for multiple centres. Because the marine ecological environment system's damage is characterised by crossregional coverage, a long incubation period, and irreversible damage results, global marine ecological environment governance needs a coordinated multisubject co-governance committee to serve as a practical platform for building an ocean community with a shared future. In other words, such an organisation can integrate the unilateral marine ecological environment governance plans centred on a few countries or regional marine ecological environment governance plans dominated by some countries into a comprehensive and interrelated plan.

Although the international community generally agrees that an ecosystem approach is needed to improve ocean governance, its application value in practice is still limited. To a large extent, this is due to considerable implementation difficulties, including the lack of appropriate data and scientific and analytical tools to support the process. Therefore, to realise multisubject co-governance of the global marine ecological environment, the key point is not limited to the construction of the marine environmental rule of law itself. The main difference between global governance and previous international governance is that the former is based on the global governance mechanism, rather than the government in a traditional sense. It breaks from the previous single-governance model, emphasises diversity, pluralism, and polymorphism of actors, and forms a complex structure that is flexible and coordinated [39]. Certainly, the key to dealing with the current global marine ecological environment governance is establishing an appropriate platform to realise the co-governance of global marine ecological environment with the participation of multisubjects.

3. Path to Realisation of Multisubject Co-Governance of Global Marine Ecological Environment

3.1. Protection of Global Marine Ecological Environment Is the Natural Requirement of Humankind's Common Heritage

The ocean belongs to all humankind. Global marine ecological environment protection is underpinned by protecting the common heritage of humankind and the awareness of the need for multisubject co-governance of global marine ecological environment protection. The fulfilment of this mission requires the joint participation of all humankind: global cooperation. In 2012, former UN Secretary-General Ban Ki-moon said the theme of World Oceans Day is “Our Oceans, Our Responsibility”, emphasising our individual and collective duty to protect the marine environment and carefully manage its resources. Safe, healthy, and productive seas and oceans are integral to human well-being, economic security, and sustainable development [40].

International law is essentially the international legal system that governs relations between states. It is based on reciprocity, protects interests, considers the legitimate rights and interests of other countries, shoulders international responsibilities, and seeks to achieve win-win results through international cooperation, consultation, and collaboration. Article 136 of the 1982 UNCLOS established the principle of a common heritage of humankind, which emphasised that all persons could benefit from such places in a peaceful manner and for peaceful purposes. It also excluded unilateral application by countries, groups, enterprises, and individuals [41]. This mode breaks from the conventional thinking and path dependence of traditional governance and provides a theoretical basis for multisubject co-governance of global marine ecological environment protection.

Over the years, China has attached an importance to and actively participated in global marine ecological environment governance. In essence, the concept of “sharing common resources” as emphasised in the principle of the common heritage of humankind in UNCLOS coincides with China’s global governance concept featuring “extensive consultation, joint contribution, and shared benefits”. In recent years, there have been differences on the subject and scope of application of the principle of the common heritage of humankind in the world, but scholars generally agree that marine environment resources are part of the common heritage of mankind [42]. Though multisubject co-governance of global marine ecological environment governance is based on the UNCLOS, it should achieve “extensive consultation, joint contribution and shared benefits”, not only because the marine ecological environment resources are the common heritage of humankind but also because strengthening the protection of the marine environment is humankind’s “obligation erga omnes”. It is worth emphasising that the principle of the common heritage of humankind means that the protection of the global marine ecological environment is humankind’s “obligation erga omnes”. From 1973 to 1982, during negotiations on the Convention on the Law of the Sea, insufficient attention was paid to maritime issues outside national jurisdiction. The focus was on maritime rights and interests, while marine ecological environment

protection was relatively secondary. With the development of marine transportation and international trade, disputes about marine trade environment have increased, and the international community is paying more attention to the marine ecological environment. Based on this, the scope of the “obligation erga omnes” concept in international law has gradually expanded from international crimes to protecting the human environment. Marine ecological environment protection has become an absolute international legal obligation recognised by every country to perform certain acts or omissions per the basic norms of international law, which is necessary to safeguard the basic moral values of humankind and the common interests of the world. Therefore, as an important “obligation erga omnes” in the 21st century, global marine ecological environment protection reflects the basic value of human society and safeguards the international interests of the international community [43]. Moreover, this obligation is not premised on bilateral or multilateral reciprocity, which is consistent with the core idea of the common heritage of humankind. Thus, we should first realise that the global marine ecological environment is the common heritage of humankind, and humankind has inalienable “obligation erga omnes” to the marine ecological environment. In this way, awareness can be raised on the need for multisubject co-governance of global marine ecological environment protection.

3.2. Establishing the Concept of Global Marine Ecological Environment Governance Led by the Concept of an Ocean Community with a Shared Future

Pollution damage and exploitation damage caused by human activities are pushing the bearing capacity of the oceans to the limit. Marine ecological environment problems have transcended national and regional limitations and become global problems. It is thus necessary to establish an advanced concept of global marine ecological environment governance with multiple subjects. However, the current global marine ecological environment governance system is West-centric and embeds the values and intentions of major Western powers. Therefore, it is difficult to create shared values for a global community. The liberalism-based international governance has been unable to meet the existing needs of global marine ecological environment governance to deal with environmental issues, coordinate intergenerational equity, and promote the sustainable development of marine ecological environment. In the face of these problems, neoliberalism and individualism must be abandoned, the rigid boundaries of administrative divisions between countries broken, and the “obligation erga omnes” fulfilled as citizens of the earth. This is why the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development on 25 September 2015, along with a set of 17 bold global goals to end poverty, protect the planet, and ensure prosperity for all, including SDG14 on the conservation and sustainable use of the ocean’s resources. It called on each country, private organisation, and individual to develop green and sustainable consumption and production patterns to protect the environment. Thus, protecting and restoring our environment is at the heart of the 2030 Agenda for Sustainable Development. To achieve these targets, the overall theme of the fifth session of the United Nations Environment Assembly was “Strengthening Actions for Nature to Achieve the Sustainable Development Goals”. The session was held online on 22–23 February 2021 and called for strengthened action to protect and restore nature and nature-based solutions to achieve the SDGs in its three complementary dimensions: social, economic, and environmental [44]. Human beings live in a global village, in the same space and time where life history and reality converge, increasingly becoming a community with a shared future. The concept is extensive and its essence includes five pillars, “lasting peace, universal security, common prosperity, openness, inclusiveness, cleanliness and beauty”, which all have rich connotations of international law [45].

On 10 February 2017, the 55th UN Commission for Social Development approved a resolution that called for more support for economic and social development in Africa by embracing the spirit of building a human community with a shared future. It can be said that the UN has once again adopted ideas initiated by China, following the “Five Cardinal Principles of Peaceful Coexistence”, the “Three World Theory”, and the concept of a “Harmonious World”, which reflect China’s initiative. There is no doubt that the concept

breaks national, race, cultural, and ideological barriers. It provides a new perspective and feasible action plan to focus on the future and destiny of humankind and realise “the free union of man”. Of course, the concept of a community with a shared future for humankind is also open and inclusive. It is not about building a community with a shared future for humankind with China at the centre but building a beautiful home for humankind that embodies the international view of power, common interests, sustainable development, and global governance, featuring “inclusive development and shared rights and responsibilities”. China will always be a builder, an important contributor, and a major defender of this homeland.

The concept of a community with a shared future for humankind is multidimensional, covering political, economic, social, cultural, and ecological aspects of the international community. The development of science and technology has accelerated economic integration, increased globalisation, and increased interdependence. However, with the rise of nationalism and populism, there is also a strong undercurrent of antiglobalisation, such as the US government’s recent withdrawal from the Paris Climate Change Agreement and later rejoining under the Biden regime. The issues of survival and environmental protection and how to live in harmony with nature have engendered extensive thinking in the international community. The realisation of the concept of a community with a shared future for mankind needs a practical platform, and the construction of a regional community with a shared future for humankind and new organisations and new mechanisms are indispensable platforms. On this basis, the blue planet we live on is not divided into isolated islands by the oceans. Rather, it is linked by a shared future where people of all countries share weal and woe. This shows that global marine ecological and environmental governance should be based on the common destiny of humankind, sustainable development of the marine environment, and the common interests of all countries. Only by sharing the same breath and issues and building a global model of marine ecological and environmental governance can we truly form an ocean community with a shared future for the sustainable development of the marine ecological environment. Based on this, under the guidance of an ocean community with a shared future, the existing global marine ecological environment governance should shift from damage prevention to risk prevention.

As mentioned above, protection against damage to the marine ecological environment has the colour of “mending the damage after it is too late”, the concept of risk-prevention marine ecological environment protection requires multisubjects to carry out risk assessment for a series of planned marine activities, including the exploration of marine resources, the application of marine science and technology, and the possible effects of dumping on the marine ecological environment. In the past, marine ecological environment governance was that if there is an undetermined risk of marine ecological environment damage caused by human activities in the ocean [46], the resulting current situation of serious marine ecological environment pollution would also damage the intergenerational equity.

The declaration “Our Oceans, Our Future: A Call to Action” adopted by the United Nations General Assembly in July 2017 calls on states to take a preventive approach and enhance the resilience of the oceans to better protect and sustainably use marine biodiversity. The declaration emphasises taking a risk-prevention approach to protecting the marine ecological environment while implementing SDG 14 of the 2030 Agenda for Sustainable Development. In short, for the sustainable development of humankind and common maritime interests and seeking a new trend in global governance that features “extensive consultation, joint contribution and shared benefits”, global marine environment governance should be guided by the concept of an ocean community with a shared future for global marine environment protection.

3.3. Establishing a Global Mechanism for Coordinating Marine Ecological Environment Governance

According to the French scholar Godane, governance is not a concept put forward by a certain person, nor is it the concept of a specialised discipline, but a collective product, more or less with the characteristics of negotiation and hybridity [47]. As discussed above, the

realisation of a community with a shared future for humankind requires new organisations and new mechanisms, which is an indispensable platform for practice. As a subordinate concept of a community with a shared future for humankind, an ocean community with a shared future has regional characteristics. It is particularly necessary to build a global coordination mechanism for marine ecological environment governance to implement the concept of a community with a shared future for the oceans. Due to the unifying nature of the ocean, global marine ecological environment pollution often affects many countries and subjects along the coast; therefore, it is not just a governance problem for one country or region. In the face of the current regionalised and fragmented of marine environmental governance system, coordinating the multisubject marine ecological environment governance and establishing a global multisubject co-governance coordination mechanism is important.

The governance model should be considered first to transform the global marine ecological environment governance from regional governance to global multisubject governance. Although the Montevideo project has made great progress, it is still fragmented. Territorial and maritime disputes may lead to ecological environment protection issues. Taking biodiversity and natural resource protection in the South China Sea as an example, some scholars believe establishing a multisubject co-governance coordination mechanism for the marine ecological environment requires shelving sovereignty disputes [48]. This view reflects the consultative governance model of shelving disputes, pursuing joint development, and safeguarding the marine ecological environment. Compared to the traditional dialogue and consultation model, it is worth pointing out that a network governance coordination model can also be considered to introduce a monitoring and evaluation mechanism with public participation to prohibit individual subjects from predatory exploitation of the ocean. This model breaks away from the traditional hierarchical governance model within a country and the discrete state of divided governance rather than shared governance among various governance actors in the international community.

The establishment of a consultation mechanism should be based on the parallel structure of the international community. The marine regional governance mechanism as a bureaucratic mechanism has played an important role at the domestic level. However, due to the existence of too many administrative levels, there is information asymmetry, resulting in a poor governance coordination and slow response. In addition, a strict division of labour leads to “strict barriers” between departments, making it difficult to realise communication and cooperation among various subjects truly. Therefore, this kind of hierarchical governance mechanism is unsuitable for the complex, dynamic, and pluralistic marine environment [49]. By contrast, because the international community belongs to a parallel structure dominated by states, hierarchical mechanisms cannot be applied. However, some developed countries regard the international community’s interests as an exclusive zero-sum relationship; therefore, they believe that there would be disagreements and conflicts between countries competing for interests. Without the concept of “harmony without uniformity” and “obligation erga omnes” and upholding the hegemonic logic of putting national interests first, it is difficult to achieve “harmony between human and sea” and “harmony between man and nature” to address global ecological environment governance issues. For that reason, the governance mechanism of the global marine ecological environment governance should be based on the parallel structure of the international community rather than the hierarchical or vertical structure, establishing a dialogue and consultation mechanism featuring extensive consultation, joint contribution, and shared benefits.

Finally, it is also necessary to consider the balance of rights and the duality of identities of multisubjects in the marine ecological environment. For the former, some scholars point out that the construction of a global coordination mechanism for shared governance by multisubjects needs to take into account power preferences and that achieving an “ideal balance of rights” is an important prerequisite for providing an environment for international law to create a sense of legal obligation. Such a balance can create “added value” for international law and thus encourage compliance with the UNCLOS [50]. Thus, co-

governance of the marine environment from regional to global governance is necessary to overcome geopolitical barriers and achieve a balance of rights among multiple governance subjects. As for the latter, it should be said that in the global marine ecological environment governance, there is a duality of “profit-seeker” and “governor” identities for all governance subjects. If actors overemphasise their “profit-seeking” identities in an interdependent world, it would bring about noncooperation and create a bad image in the international community. Therefore, the successful realisation of global ocean governance also needs to deal with the contradiction of identity duality of governance actors [51]. For this reason, each governance subject should abandon the discrete governance concept of fragmented governance and actively learn marine life community, gather the points of convergence, and merge them into one, while pursuing their interests, taking corresponding international responsibilities, and fulfilling their “obligation erga omnes” for environmental protection.

In summary, it is undeniable that the construction of a coordination mechanism for the participation of multisubjects in the governance of the global marine ecosystem is not easy. Therefore, the construction of a coordination mechanism for the co-governance of the global marine ecosystem should be based on the UNCLOS and the implementation of regional marine project plans as a model, on top of which the balance of interests and points of convergence for the shared governance of marine ecosystem by multisubjects should be analysed and a high degree of joint, integrated planning and management should be realised, based on unilateral governance by countries and regional subgovernance. However, governance does not mean possession and ownership, and the coordination mechanism of a global marine ecological environment with multisubjects should also be based on the concept of an ocean community with a shared future, through friendly consultation and reaching consensus on global cooperation to solve marine ecological environment problems jointly.

3.4. Establishing the Global Commission for the Co-Governance of Marine Ecological Environment with Multisubjects

At present, the governance of marine ecological environment by multisubjects has become a reality, but various subjects involved are constrained by many factors that include different governance objectives, methods, and contents, a lack of effective synergy among various subjects or power centres, and competition and conflict among them. For example, according to the UNCLOS, the oceans are divided into nine regions, and several regions have their international organisations for the oceans. In addition, various ocean actors, including countries, international organisations, and NGOs, have different worldviews, values, and interests, while various regional ocean organisations have a certain degree of exclusivity. Therefore, the diverse and fragmented international ocean governance has not yet formed a truly meaningful global ocean governance system. Moreover, various power centres or subjects of governance also lack a platform for common discussion, interconnection, and win-win cooperation based on the concept of an ocean community with a shared future.

Based on analyses, the fate of the world should be jointly held by all countries; international rules should be jointly written by all countries; global affairs should be jointly governed by all countries; and the fruits of development should be jointly shared by all countries. Promoting the reform of the global governance system is a common cause of the international community. Only by working through extensive consultation, joint contribution, and shared benefits can we build consensus and take concerted actions to reform the global governance system. It should be said that the historical role of the law of the sea has always been to balance competing international interests. The approach to achieving this balance in the face of new challenges and potential threats remains the same: realistic achievability based on cooperation, consultation, and mutual compromise [52].

The realisation of an ocean community with a shared future requires a corresponding practice platform, and the construction of regional communities of human destiny and new organisations and mechanisms is essential. For this reason, no single country, organisation,

or institution can take on the responsibility of global marine ecosystem governance on its own to form a holistic and clear approach to solve the multiple problems facing the ocean. A study conducted by Di Jin (2019) mentioned that fragmented sea governance approaches are ill-suited to handling the multifaceted interrelationships between the marine ecosystem components and anthropogenic activities [53]. By contrast, integrated management practices, such as marine spatial planning (MSP), integrated coastal zone management (ICZM), and ecosystem-based management (EBM), are relatively progressive and advanced approaches [54]. However, fragmentation continues even with the new initiatives, largely because of a lack of institutional and policy reforms [55]. In this regard, Marjo Vierros believes that MSP can take on this responsibility [56]. The plan can integrate current human behaviour in marine ecosystem management without compromising controversial values to achieve sustainable development of the global marine ecosystem. However, although the scholar argues that the MSP can enable stakeholders to make full use of the sea area and prevent existing or potential conflicts at sea, it lacks sufficient theoretical analysis and practical operational recommendations and is therefore not feasible. Christer Jönsson and Anders Johnsson provide a comprehensive analysis of the role of the IPU in global governance, covering mainly cooperation with the WTO, counterterrorism actions, and refugee protection. They point out that marine ecosystem governance is an integral part of global governance [57], but their article does not provide an in-depth analysis on how to achieve a co-governance path for multisubjects in the global marine ecosystem.

By contrast, Chinese scholars Liang Jarei and Qu Sheng took ocean governance in the South Pacific region as an inspiration and posited that the key to global marine ecosystem governance lies in strengthening coordination and cooperation among organisations, building global ocean governance partnerships, and strengthening the effective docking of regional ocean governance concepts with global ocean governance concepts [58]. It should be said that they have attempted to construct a relatively complete theoretical system for global marine ecosystem governance, but only based on a large number of existing regimes and treaty provisions, and failed to note that since World War I, there has been an increasing number of international conventions with global scope but without any substance or representativeness. Some scholars believe that there are three main points of marine ecological environment governance: firstly, to build a cross-regional trust and rules guidance mechanism for the marine environment; secondly, to deepen the “regional sea” system in international regions; and thirdly, to improve the “strong system” of regional governance of the domestic marine environment [59]. Although these scholars focused on the construction of the relationship between multisubjects and the deepening of the existing system of marine ecology, it is obvious that the goal of co-governance by multisubjects of marine ecology cannot be achieved because it is confined by the existing framework but lacks the overall construction of marine ecology governance rules. Thus, the plurality of global marine governance subjects inevitably causes the power to be dispersed from one centre to many centres, and there are potential governance conflicts. For example, for the restoration of marine ecosystems, countries far from the marine commons and countries near the sea have different environmental governance needs.

However, it is worth pointing out that global ocean governance also needs leaders to overcome difficulties to solve common human problems. Decentralisation and the lack of leaders are structural contradictions in global ocean governance. There are many difficulties in managing the whole-ocean governance process and coordinating the interests of governance subjects. Based on this, we can consider establishing a global international organisation for global marine ecological environment governance, the global commission for the co-governance of marine ecological environment with multisubjects, which is dedicated to coordinating and solving the many problems in marine ecological environment governance. The main mission of the commission is to coordinate and integrate the regionalised and fragmented marine ecological environment governance systems in the initial stage and build a healthy “blue ocean economy”. The latter’s mission is to carry out planned and purposeful governance of the marine ecosystem as the common heritage

of humankind globally to achieve sustainable development of the global ecosystem. In this regard, a multisubject committee on shared governance can be established under the authority of the UN General Assembly, and the members of this committee can include states, intergovernmental organisations, international nongovernmental organisations, and multinational corporations. At the same time, specific subsidiary bodies, including a council, a secretariat, a compulsory dispute settlement body, and an executive board, should be set up, drawing on the structure of international institutions such as the World Trade Organization and the International Seabed Authority. Given the possible intertwining of interests, conflicts and contradictions among various governance subjects, and even behaviours that are contrary to the value goal of co-governance under an ocean community with a shared future, it is possible to draw on the dispute settlement mechanism of the World Trade Organization to establish a corresponding compulsory dispute settlement body and to resort to legal means to resolve disputes that occur in the process of co-governance. Meanwhile, an executive board would be set up to enforce the judgment delivered by the dispute settlement body, and members who refuse to enforce the judgment would apply for sanctions or authorised retaliation by the Council. A logical roadmap of the specific concept is shown in the diagram below (Figure 1).

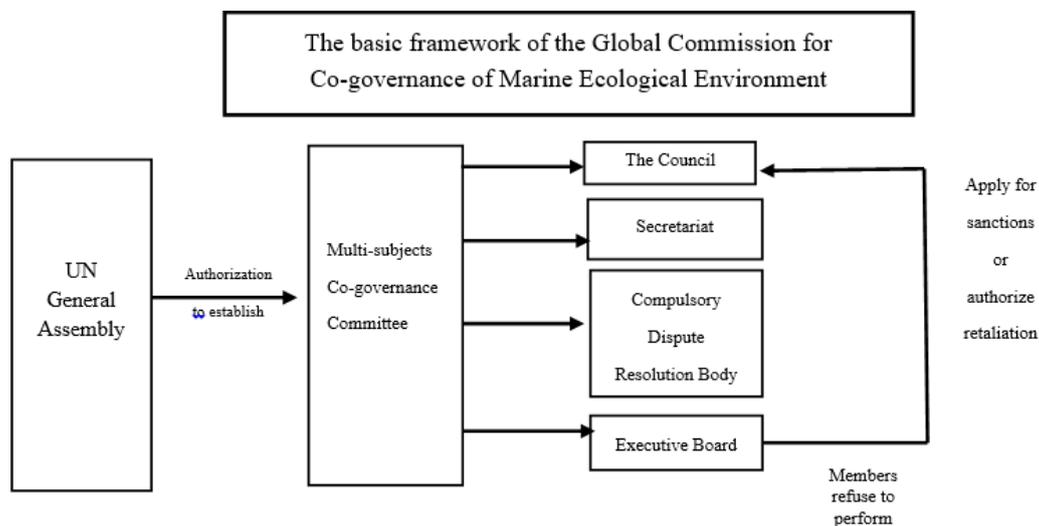


Figure 1. The basic framework of the Global Commission for Co-governance of Marine Ecological Environment.

Considering the current fragmentation, ineffectiveness, and absence of a uniform global governance system for the marine environment, the author believes that if the proposed global commission for the co-governance of marine ecological governance is successfully set up under the auspices of the United Nations General Assembly, it could benefit the world in a time when it is much needed. However, it could serve as an ice-breaker and may be feasible for all the coastal states to accept, as a starter, reaching out at a uniform and mutual agreement to ensure that the global marine ecological environment is being governed by a well-planned and safer system under the proposed global commission of the United Nations. The main idea of this proposal is to let the global stakeholders realise that the world should join hands together to mutually protect the marine ecological environment before it may become too late. To this end, a reference can be made with the establishment of framework for a pan-Arctic network of marine protected areas (MPAs) by the Arctic Council in 2015 [60], which logically responded and provided a global solution to the urgency of safeguarding and restoring marine ecosystem function, biodiversity, and sustenance of the available natural resources to make them sustainable for the future generations [61]. Similarly, research conducted by Christina Kelly et al. (2010) also demonstrated that the negative impacts of fragmented sea governance still exist under the new governance measures mainly due to the fact that the different organisations are

still working separately [54]; thus meriting the need for one uniform commission under the United Nations.

4. Conclusions

The global marine ecological environment multisubject co-governance is an inevitable requirement of human beings for the continuous deepening of marine development and utilisation, marine ecological environment protection, and the rightful meaning of building an ocean community with a shared future. The key to the realisation of the global marine ecological environment is not only the accurate recognition of the current situation of marine ecological environment damage but also how to combine the international political, economic, and social situation to make rational analysis, break through the ideological barriers of master and subordinate, different camps, and separate policies, and realise the optimal institutional model design for global marine ecological environment protection under the non-zero-sum game of multicorporate governance. Only when the international community is fully aware of the limitations of the traditional marine ecological environment governance concept and the inadequacy of unilateral or regional marine ecological environment governance can it truly realise the necessity of global marine ecological environment co-governance by multisubjects guided by the concept of an ocean community with a shared future. At the same time, only through the global marine ecological environment governed by multisubjects can we effectively achieve the sustainable development of the marine ecological environment, protect the common heritage of all humankind, achieve intergenerational equity, and build a community with a shared future and other major goals, and an open, inclusive, clean and beautiful world with lasting peace, universal security, and common prosperity.

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