

From Information Dissemination to Action Synergy: A Study on the Action Path of Social Organizations' Participation in Marine Environmental Governance

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Keywords: Social Organizations, Marine Environmental Governance, Information Dissemination, Network Construction, Action Synergy, Environmental Participation Pathway

Abstract: Against the background of increasingly severe global marine environmental problems, social organizations, as important non-state actors in the pluralistic governance system, are gradually playing a more and more critical role in marine environmental protection. Starting from the logical path from information dissemination, network construction to action synergy, this paper discusses how social organizations can realize the transformation from issue advocacy to substantive governance participation. Through sorting out the development and evolution of social organizations in marine environmental governance, this paper analyzes their specific mechanisms and practical paths in the stages of disseminating issues, connecting resources, and collaborative actions, and reveals their multiple functions in raising public environmental awareness, promoting policy changes, and implementing specific governance projects. The paper also analyzes the challenges faced by social organizations in terms of institutional environment, capacity building and depth of participation, and puts forward policy recommendations to optimize their participation paths. The study shows that the construction of a multi-level participation mechanism of information-network-action can help stimulate the vitality of social governance and promote the formation of a more synergistic, efficient and sustainable pattern of marine environmental governance.

1. Introduction

With the aggravation of global climate change, marine pollution and ecosystem degradation, marine environmental governance has increasingly become a core issue of concern for the international community and governments [1]. Under the impetus of national policy orientation and international environmental agreements, the traditional government-led “top-down” governance model is gradually showing the limitations of decentralization of authority and responsibility, and insufficient implementation efficiency, which has led to the evolution of marine environmental governance towards a pluralistic and shared governance model [2]. In this process, social organizations, as an important social force between the government and the public, have shown unique advantages in environmental publicity, resource integration, public participation and policy advocacy by virtue of their flexibility, locality and professionalism, and have become a key link between institutional governance and social mobilization [3].

In recent years, social organizations have not only assumed the roles of information disseminators and public advocates, but also gradually shifted to the identities of network coordinators and action implementers in marine environmental issues [4]. Especially in the context of the widespread application of digital technology and social media, social organizations have strengthened the issue setting through information dissemination, expanded their influence through network construction, and deepened their participation practice through coordinated actions, gradually forming a set of “dissemination-connection-coordination” as the core participation path [5]. A set of participation paths centered on “communication-connection-coordination” has gradually been formed. This path not only reflects the redistribution of power and responsibility among governance subjects, but also reflects the paradigm shift of governance logic from instrumental management to collaborative construction [6].

Although the role of social organizations in marine environmental governance is becoming more and more prominent, there is still a lack of systematic research on the internal mechanism, structural characteristics and practical dilemmas of their participation path [7]. Existing literature mostly focuses

on the single function description of social organizations in environmental governance, but lacks a dynamic analysis of the whole process from communication to action, and pays less attention to how information dissemination is embedded in the synergistic mechanism to play a bridging role [8]. It is necessary to explore the multi-dimensional practice of social organizations in marine environmental governance from the perspective of action path, and to reveal how they realize the logic of transformation from information mobilization to institutional synergy [9].

This paper takes “from information dissemination to action synergy” as the main research line, combs through the evolution of the path of social organizations' participation in marine environmental governance, and focuses on the analysis of their mechanisms and challenges in disseminating issues, connecting resources and promoting synergistic governance, with the aim of providing theoretical support and practical references for the promotion of more effective participation of social organizations in marine environmental governance [10]. The paper is divided into three parts: the first part discusses the role change and motivation of social organizations in marine environmental governance; the second part refines the path of their participation, and analyzes it from the three levels of information dissemination, network construction and action synergy; and the third part reflects on the institutional and practical bottlenecks in the current path, and puts forward optimization suggestions and future outlook [11].

2. The Emergence and Role Transformation of Social Organizations in Marine Environmental Governance

With the increasing prominence of marine ecological problems, the single-body governance model of the state and the government has gradually exposed the drawbacks of lagging response, inefficient resource allocation, and insufficient public participation [12]. Under the dual background of the change of global environmental governance concepts and the promotion of domestic ecological civilization construction strategy, social organizations as non-state actors have begun to emerge in the field of marine environment. Their rise not only stems from the boundaries of the government's governance capacity, but is also closely related to the awakening of civil environmental awareness. Especially in coastal areas, a group of non-profit organizations and grassroots environmental groups, which have long been concerned about marine ecological protection, have gradually accumulated action experience, social trust and issue resources, and built up a relatively solid social foundation by organizing beach cleaning, popularization of science and volunteer services. Formula for Environmental Impact (E):

$$E = \frac{P}{M} \quad (1)$$

Scatter Plot with Regression Line as shown in Figure 1.

The change in the role of social organizations is first manifested in the diversification of their functional positioning. From information intermediaries, policy advocates and public mobilizers at the beginning, they have gradually expanded to project implementers, resource integrators, governance participants and other multiple identities. This shift reflects the tendency of social organizations to move from the periphery to the center of the governance chain. In the early days, social organizations tended to regard themselves as “gatekeepers of the environment”, emphasizing the supervision of government actions and the guidance of public awareness. However, in recent years, more and more organizations have begun to take the initiative to participate in the practice of marine environmental protection, such as undertaking scientific research support tasks, participating in the consultation of local legislation, and leading ecological restoration projects. This change of identity not only enhances their influence in the governance system, but also puts forward higher requirements for their own organizational capacity and professional level, showed in Figure 1.

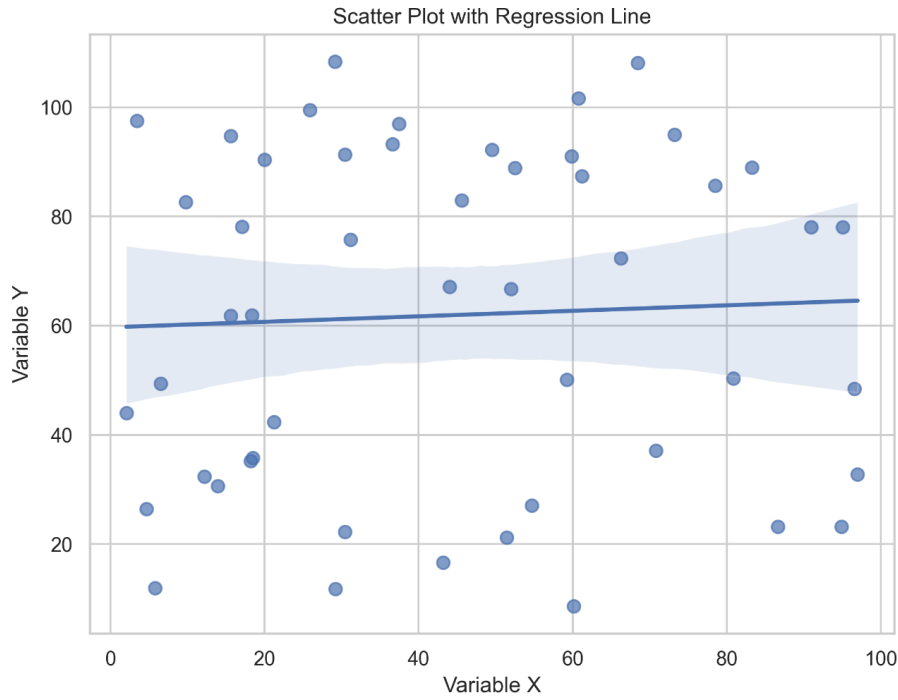


Figure 1 Scatter Plot with Regression Line

The involvement path of social organizations is becoming more institutionalized and networked. In the process of modernization of national governance, the policy attitude of government departments towards social organizations has gradually shifted from prudent observation to limited support and even cooperation, and has been incorporated into the governance synergy system through the purchase of services, project cooperation and platform construction. Social organizations are no longer loosely independent individuals, but have formed a collaborative governance structure through alliances, networks and platforms. In some cross-regional marine conservation actions, social organizations in different regions have established a networked mechanism for information sharing and action linkage by sharing resources, knowledge and strategies. This evolution from single action to joint mechanism has greatly enhanced the systematic and collective influence of social organizations in the governance structure. Formula for Collaborative Efficiency (C):

$$C = \frac{N \times R}{T} \quad (2)$$

The development of digital technology has also accelerated the evolution of the role of social organizations in marine environmental governance. With the help of social media, big data, remote sensing monitoring and other digital tools, social organizations are able to grasp environmental dynamics more accurately, organize public participation more efficiently, and shape public discourse more powerfully. By building marine pollution databases, publishing ecological risk maps, and launching online initiatives, some organizations have not only strengthened their authority on issues in their professional fields, but also promoted the convenience and routine of public participation. Digital empowerment is prompting social organizations to shift from traditional “action-oriented” organizations to “data-driven” and “platform-oriented” organizations, giving them new structural advantages and scalability in the governance system. This has given them new structural advantages and expansion capabilities in the governance system , the Heatmap of Correlation Matrix, showed in Figure 2 :

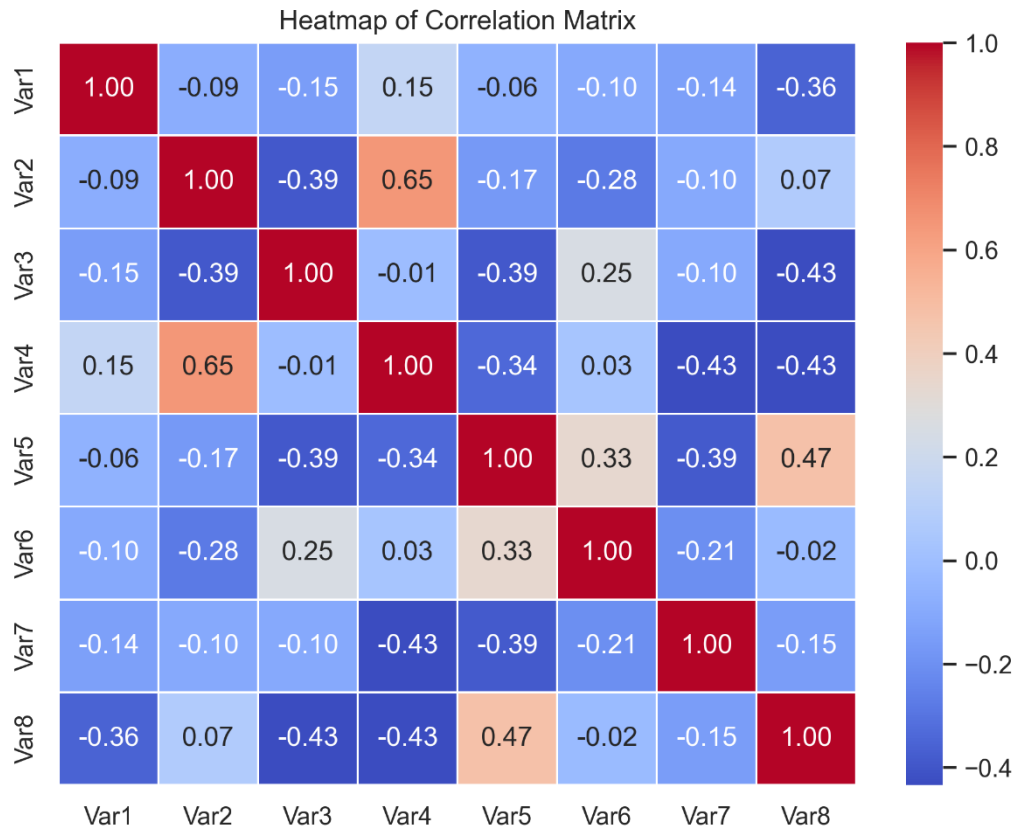


Figure 2 Heatmap of Correlation Matrix

3. From Information Dissemination to Action Synergy: Analysis of the Participation Path of Social Organizations

In the process of marine environmental governance, the participation of social organizations does not happen overnight, but shows a dynamic path of evolution from shallow to deep and gradual embedding. From the initial dissemination of information to the subsequent construction of networks, and ultimately to the action synergy under the participation of multiple parties, this process not only reflects the expansion of the role and function of social organizations, but also reflects the gradual enhancement of their influence in the governance structure. Specifically, social organizations first construct authoritative information and widely disseminate it to guide public awareness and set governance issues; then establish cross-sectoral and cross-field collaborative networks to achieve resource integration and strategy linkage; and finally, social organizations deeply intervene in governance practices in collaboration with government, enterprises, research institutions and other parties, promoting the transition from issue advocacy to substantive institutional participation and action co-creation. These three links are nested in each other and evolve in a cycle, together constituting the core path framework for social organizations to participate in marine environmental governance.

3.1 Information Dissemination: Cultivation of Environmental Awareness and Issue Setting

Information dissemination is the starting point for social organizations to participate in marine environmental governance, which not only assumes the function of knowledge popularization, but also is the key mechanism to promote the transformation of public awareness, trigger social resonance, and facilitate the focus of issues. In their long-term practice of environmental advocacy, social organizations are well aware of the importance of “cognition first”, and have gradually built up a basic

understanding of the marine ecological crisis in the minds of the public through continuous information production and precise communication strategies. Compared with the macro publicity context often adopted by government agencies, social organizations prefer to make their communication content specific, emotional and life-like, for example, transforming concrete phenomena such as plastic pollution, disappearance of mangrove forests, and death of marine organisms into intuitive images, stories, and case studies, so as to enhance the public's perception and sense of immersion. This approach not only lowers the threshold of understanding environmental knowledge, but also improves the emotional resonance and value recognition of issues by ordinary individuals.

In terms of the source and construction of communication content, social organizations usually rely on multi-channel information collection mechanisms, including participating in field research, citing academic studies, obtaining public government data, and even establishing long-term observation networks through cooperation with scientific research institutions. This process not only ensures the scientific and authoritative nature of the communication content, but also gives social organizations the advantage of “foresight” in issue setting. When an environmental issue has not yet entered the mainstream media or public policy vision, social organizations can often take the lead in intervening with their front-end information perception and professional judgment, and create public opinion attention by publishing reports, organizing lectures, and putting new media content, which in turn leads to media follow-up and policy response. Social organizations occupy a favorable position in agenda guidance at the early stage of issue formation, shaping their role as “issue engine” in the information dissemination field.

The selection and strategic use of communication media is also a part of information dissemination that cannot be ignored by social organizations. Traditional offline communication, such as exhibitions, lectures, and community presentations, still plays a role in certain regions and groups of people, but with the popularization of mobile Internet and social media, online communication has become the mainstream path. Platforms such as Weibo, WeChat, Jitterbug, and B-station provide a wealth of expression tools, enabling social organizations to deliver information in a variety of forms, such as short videos, graphic explanations, and live explanations, and to achieve issue proliferation and user interaction more quickly. Some organizations also adjust their communication rhythm and content strategy through public opinion observation and data analysis to achieve real-time feedback and optimization of communication effects. Such diversity and flexibility in media use have greatly enhanced the efficiency and accuracy of social organizations' information dissemination, and strengthened their mobility and professionalism in the public communication system.

In the process of communication, social organizations pay special attention to the construction of relationships with the public, no longer satisfied with one-way information output, but through the creation of participatory scenarios and the establishment of emotional connections, to promote the transformation of information dissemination into social mobilization. By designing interactive quizzes, recruiting volunteers, and online discussion forums, the program enhances the audience's sense of participation and belonging; and by cooperating with local communities, schools, and enterprises, it embeds communication activities in people's daily life, gradually transforming environmental protection concepts into living habits. This communication mechanism based on “build and share” not only enhances the actual impact of the message, but also lays a solid foundation for subsequent public participation and the construction of social organization networks.

3.2 Network construction: multi-party connection and resource integration mechanism

In the complex picture of marine environmental governance, it is difficult for social organizations to achieve effective intervention on their own, and the expansion of their governance capacity is highly dependent on cross-organizational and cross-field cooperation. After completing the initial information dissemination and issue setting, social organizations often enter the stage of “network construction”, and gradually embed themselves into larger-scale and higher-level governance systems by linking multiple subjects, integrating heterogeneous resources and building cooperation platforms. Different from the traditional organizational expansion, the network construction of social organizations focuses more on the establishment of a decentralized and flexible cooperation

mechanism, based on trust and complementary resources, to realize the scale and systematization of governance actions. This mechanism not only enhances the organization's ability to act, but also wins more institutional space and voice in the governance structure.

Multi-party connection is the first step in the construction of social organizations' network, which involves the establishment and maintenance of relationships with government departments, scientific research institutes, enterprises, media, communities and other multi-party subjects. In practice, social organizations have entered the government's agenda by participating in policy negotiations, providing professional advice, and carrying out cooperative projects, and have taken on specific tasks in ecological restoration, marine patrols, and public education, thus realizing a change in their role from the periphery to the core. At the same time, many social organizations are actively cooperating with universities and scientific research institutes to strengthen the scientific basis of their advocacy and action through the support of professional knowledge in the areas of marine data monitoring, biodiversity surveys and risk assessment modeling. The environmental responsibility of corporations, the communication power of the media, and the local mobilization power of the community are also indispensable nodes for social organizations to build a multi-connected network. These connections not only broaden the radius of cooperation, but also enhance the synergy of the organizations in marine environmental issues.

Resource integration is the core of network construction. In governance practice, resources do not only refer to material inputs or financial funds, but also include multi-dimensional elements such as data resources, knowledge resources, human resources and social capital. Social organizations can achieve organic integration of resources of different subjects by clarifying the positioning of issues, refining the cooperation interface and designing the collaboration process. Taking a marine protection project in a coastal area as an example, the social organization coordinated the local government to provide data on sea area use and administrative permits, mobilized scientific research institutes to provide water quality monitoring technology, invited enterprises to donate materials and participate in project publicity, and at the same time, organized community volunteers to participate in beach cleanup and ecological education activities, thus building a comprehensive governance network with shared responsibilities and resources. This integrated approach not only improves the sustainability of governance actions, but also promotes the structural upgrading of the governance mechanism from "single-point action" to "platform collaboration".

It is worth noting that the sustainable operation of the network relies on institutionalized collaboration mechanisms and relational governance capacity. On the one hand, social organizations enhance the stability and response efficiency of the network through the establishment of joint meetings, information sharing platforms, cooperation memorandums and other institutional arrangements; on the other hand, inter-organizational collaboration is often faced with issues of disagreement, misalignment of goals, and unclear powers and responsibilities, which requires social organizations to have strong coordination and intermediary capabilities, and to be able to find a consensus and balance between multiple interests. Some mature organizations have also assumed the role of network governors, responsible for resource matching, conflict mediation, standard-setting and capacity training, etc., to promote the evolution of the network to a higher level. This change of role signifies that social organizations are no longer "participants" or "implementers" in the governance system, but have become, to a certain extent, organizers of the governance order and promoters of mechanism innovation.

3.3 Synergy of action: transformation from advocacy to actual involvement in governance

In the process of social organizations' participation in marine environmental governance, the stage of action synergy represents their transformation from mere advocates to direct participants in governance practice. This transformation is not only a deepening of function, but also a fundamental change in the role of social organizations in governance. From the initial dissemination of information and public advocacy to the later construction of networks and integration of resources, social organizations have gradually acquired sufficient social capital and governance experience to enable them to play a more substantive role in governance actions. This shift has not only given social

organizations the opportunity to intervene at the policy and decision-making level, but has also enabled them to play a “synergistic” role in specific environmental governance actions, and to participate in promoting the implementation of marine conservation projects through practical actions.

In the transition from advocacy to action, social organizations often collaborate at multiple levels to achieve joint action with other governance actors. In this process, social organizations no longer exist only as external supervisors or information disseminators, but are directly involved in project design, financing, implementation monitoring and other aspects. In the governance of marine pollution, social organizations may participate in the investigation of pollution sources, the promotion of pollution control technology, environmental education of local communities, and even directly undertake the implementation of some ecological restoration projects. In this transformation, the role of social organizations has gradually become more complex, it is not only a disseminator of information and public monitoring, but also involved in governance and problem solving “actors” and “practitioners”. This transformation has enabled social organizations to move from being the initiators of environmental governance issues to being the implementers and promoters of specific governance measures.

Social organizations often face challenges from multiple levels in the process of actual intervention in governance, especially the difficulties in cross-sectoral coordination and resource integration. Traditional governance bodies such as governments and enterprises usually have greater say and resource advantages in policy implementation and resource allocation, and social organizations often need to overcome bottlenecks in governance through cross-sectoral collaboration in order to occupy a place in this structure. When carrying out marine ecological restoration projects, social organizations may need to establish long-term and stable cooperative relationships with local government departments, scientific research institutions, communities and enterprises to ensure the smooth implementation of the project and avoid wasting resources. This kind of collaboration requires social organizations to have not only project management skills, but also good communication and coordination skills, and the ability to find a balance between multiple interests.

In addition to cross-disciplinary cooperation, the governance actions of social organizations also need to address the challenge of coordination between different levels. In marine environmental governance, social organizations often need to communicate and collaborate with multiple levels of governance such as local governments and international organizations. Differences in the competence, resource allocation, and policy objectives of governance subjects at different levels bring additional pressure and complexity to social organizations. Local governments may be more concerned with economic development and short-term benefits, while international environmental organizations may emphasize ecological protection and long-term sustainable development, and these different levels of demands may have an impact on the action strategies of social organizations. Under such circumstances, social organizations often need to have the ability to flexibly adjust their strategies in order to respond to the complex needs of governance actors from different levels, and to ensure that their actions do not deviate from the established governance goals, while promoting broader governance synergies.

4. Mechanism Dilemma and Optimization Path: Future Prospect of Social Organization Participation

Although social organizations are playing an increasingly important role in marine environmental governance, their participation still faces a number of institutional dilemmas, especially in the innovation of governance models and resource integration. Social organizations are often constrained by resource limitations in terms of funding, technology and personnel, making it difficult for them to achieve large-scale governance actions in a short period of time. Although many social organizations receive a certain amount of financial support through public welfare donations and government subsidies, this financial dependence limits their independence and the sustainability of their long-term actions to a certain extent. Many social organizations lack professional technical teams and monitoring tools, which makes them unable to cope with complex marine environmental issues. In the face of these dilemmas, social organizations urgently need to invest more in technological innovation, fund-

raising and talent training in order to improve their long-term influence and professionalism in marine governance.

In practice, social organizations often face structural obstacles within the governance system. The government-led model of environmental governance still dominates, while social organizations often find it difficult to gain a sufficient voice in institutional design and policy formulation. The path of participation of many social organizations in governance is still limited to the “lower” levels of project implementation and monitoring, with limited involvement in deeper decision-making processes and resource allocation. Such deficiencies in the governance structure make it difficult for social organizations to promote fundamental changes at the policy level, and limit their role as independent “actors” in the governance system. The future development of social organizations needs to strive for more voice at the policy level, and to promote a more equal and complementary collaborative relationship between the government, the market and social organizations.

In addition, the mechanism of cross-field synergy and multi-principal cooperation is not yet perfect. Although social organizations have made some progress in building governance networks, effective cross-industry, cross-regional and cross-sectoral cooperation remains a challenge. In marine environmental governance, there are a wide range of interests involved, and the goals and needs of different subjects, such as government, enterprises, research institutions and communities, often differ greatly, so how to find a suitable path of cooperation amidst these conflicting interests is a major challenge currently faced by social organizations. Enterprises may focus on cost control and commercial interests, while local governments often focus on regional economic development and short-term benefits, which conflict with the long-term goals of social organizations to promote ecological conservation. In this context, social organizations need to play the role of mediators and bridges in the game of multiple interests, and promote the formation of closer and more effective cross-sectoral collaboration mechanisms.

In the future, the governance model of social organizations needs to be further optimized, especially in promoting more efficient collaboration mechanisms and improving their own governance capacity. Social organizations should strengthen long-term strategic cooperation with other entities, such as the government, research institutions and enterprises, in order to improve the effectiveness of resource integration and synergy of actions. The effectiveness of cross-border collaboration should be enhanced through the establishment of cross-sectoral joint working groups and shared resource platforms. Social organizations should focus on data-based management and scientific decision-making in their governance projects, relying on big data, artificial intelligence and other technological means to enhance the effectiveness and sustainability of governance. Social organizations should also focus on cultivating their internal governance capacity, especially on improving their project management capacity and social mobilization capacity, to ensure that they can respond more flexibly to various challenges in complex environmental governance. These paths will help social organizations play a more active role in the future of marine environmental governance, and promote a more efficient and trusting cooperative relationship between society, government and the market.

5. Conclusion

By analyzing the participation paths of social organizations in marine environmental governance, it can be seen that the whole process of social organizations from information dissemination to action synergy not only reflects their continuous deepening and expansion in environmental governance, but also their important position in the global environmental governance system. Through effective information dissemination and issue setting, social organizations have aroused public concern for marine ecological protection; through network construction and resource integration, they have broken the limitations of single subject governance and promoted multi-party synergistic governance; finally, in the transformation from advocacy to actual involvement in governance, social organizations have gradually become key participants and promoters in governance actions.

Social organizations still face many difficulties in the process of participating in marine environmental governance, including resource constraints, policy barriers and the challenge of cross-disciplinary collaboration. In order to realize their greater potential in environmental governance,

social organizations not only need to strengthen their own professional and governance capabilities, but also need to strive for more voice at the policy level and promote cross-sectoral and cross-disciplinary in-depth cooperation. Through mechanism optimization and path innovation, social organizations can better play their role in marine environmental protection.

Looking ahead, social organizations will play an increasingly important role in marine environmental governance. As the global ecological and environmental problems become more and more serious, the governance mode of social organizations will become more diversified and flexible, especially the innovations in digital technology, cross-disciplinary collaboration and public mobilization, which will inject new vitality and impetus into marine environmental governance. In-depth cooperation between social organizations and governments, enterprises and other social forces will lay a solid foundation for sustainable marine environmental governance, and promote global marine ecological protection to a higher level of governance.

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