Study on the Participation of Environmental Protection NPO in Air Pollution Prevention and Control

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Abstract. Environmental NPO can effectively make up for the absence of government in the prevention and control of air pollution, and play an important role in environmental protection rights protection, citizens' awareness of environmental protection, environmental conflict regulation and environmental protection international cooperation. At the same time, there are some problems in the participation of environmental protection NPO in the prevention and control of air pollution. In this study, 36 environmental protection NPOs were selected from East, central and Western China by using probability random sampling method, and analyzed by means of triangulation and in-depth interviews. There were some problems in the current environmental protection NPOs' participation in air pollution prevention and control, such as low professional level, lack of organizational resources, laws and regulation lagged, lack of external supervision and voluntary participation. Therefore, it is necessary to further strengthen the professional capacity building of environmental NPO, improve the laws and regulations system, optimize the internal self-discipline mechanism and external supervision mechanism, and construct the integrity evaluation system and information disclosure system, so as to effectively play the role of environmental NPO in environmental protection, and promote the construction of a community of human destiny to deal with climate change.

1. Introduction
Environmental NPO is a non-profit organization participating in environmental protection. It is a public welfare social group composed of environmental protection workers and volunteers. It has the function of connecting the government and society. Environmental NPO has the characteristics of non-profit, public welfare and voluntary, which can effectively integrate social forces and make up for the absence of the government [1]. It plays an important role in environmental protection, environmental protection rights protection, environmental awareness cultivation, environmental conflict regulation, decision-making consultation and international exchange and cooperation [2, 3]. In recent years, with the continuous development of global economy and society, environmental problems are increasing, and air pollution has the widest influence and the greatest harm among environmental pollution problems. According to the 2019 global air quality report released by Air Visual, the death toll due to air pollution is as high as 7 million, and 90% of them are breathing unsafe air. Although the governments of various countries have made great efforts on the prevention and control of air pollution, due to the problems of "government vacancy" and "voluntary failure", the government cannot cover all aspects of environmental p
rotection. At the same time, there are some problems in the participation of environmental protection NPO in the prevention and control of air pollution. Therefore, scientific response is urgently needed.

2. Method
The data were collected by means of probability random sampling, questionnaire survey and in-depth interview. In terms of sample selection of environmental protection NPO, the study takes China Environmental Protection NPO as the analysis object, mainly based on two aspects: first, China's environmental protection NPO organization is still in the development stage, there are many practical problems in participating in air pollution prevention and control; second, as the country with the largest population in the world, air pollution has an important impact on citizens' health and global environmental governance. At the same time, according to the 2019 global air quality report data, all regions in China show different degrees of air pollution, as shown in Figure 1 and Table 1 [4]. Based on this, the study selected 12 environmental protection NPOs from the central, Eastern and Western China as the research objects, and carried out in-depth analysis. From the nature of the sample organizations, there are 24 grassroots NPO environmental protection organizations not registered in relevant government departments, and 12 environmental protection NPOs with independent legal entity are officially registered. At the same time, in the selection of analysis methods, theoretical deduction, triangulation and case analysis are used to explore the sample NPO environmental protection organizations.

Figure 1. Global map of estimated PM2.5 exposures by country/region in 2019.
Table 1. Average air pollution (PM2.5) of representative cities in eastern, central and western China in 2019.

| PM2.5 (μg/m³) | 2019 | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Beijing       | 42.1 | 54.1| 53.1| 51.4| 47.6| 36.8| 38.4| 35.8| 22.1| 35.2| 39.8| 45.4| 46.0|
| Shanghai      | 35.4 | 49.3| 41.6| 50.9| 40.0| 33.0| 29.3| 26.1| 24.5| 21.7| 31.1| 27.4| 49.2|
| Guangzhou     | 28.9 | 45.5| 24.8| 27.9| 23.2| 20.3| 15.6| 18.0| 22.4| 28.4| 37.6| 41.5| 41.2|
| Shenzhen      | 23.4 | 35.6| 18.7| 21.2| 18.7| 15.8| 9.6 | 13.7| 16.4| 23.8| 32.6| 36.1| 37.4|
| Chendu        | 42.4 | 76.6| 55.7| 44.0| 39.6| 32.7| 24.0| 22.5| 28.2| 29.5| 31.0| 47.9| 77.1|
| Chongqing     | 37.1 | 74.6| 47.5| 46.5| 29.7| 30.4| 22.6| 19.7| 23.0| 29.0| 23.3| 36.3| 62.3|

Note PM2.5 (g/m³) exceeding 35.4 will cause irritation and respiratory problems.

3. Results

3.1. Existing problems of environmental protection NPO participating in air pollution prevention and control

Through field investigation and in-depth interviews, it is found that the current environmental protection NPO participation in air pollution prevention and control mainly has the following problems, as shown in Figure 2.

**Figure 2.** Influencing factors of environmental NPO participation in air pollution prevention and control.

3.1.1. The level of specialization is low. The level of specialization is the main challenge for environmental protection NPO to participate in air pollution prevention and control, and is also an important determinant of obstacles in the development of environmental NPO. Through investigation, it is found that the overall professional level of environmental NPO is low, and it is mainly reflected in the specific business of air pollution prevention and control. There are quite a number of environmental NPOs participating in air pollution prevention and control at present, however, from the perspective of participation quality, there are not many environmental protection NPOs that really participate in and effectively participate in air pollution prevention and control. In terms of participation efficiency, the short-term phenomenon of environmental protection NPO participating in air pollution prevention and control is obvious. The service provided is mainly government-oriented, not close to the needs of residents. It cannot solve the problems reflected by residents in a timely and effective manner, and some organizations have strong administrative color. At the same time, there is still large demand of professionals related to air pollution prevention and control in environmental NPO, to meet the increasingly complex and professional need about air pollution prevention and control.
3.1.2. **There is shortage of organizational resources.** For environmental protection NPO, the acquisition of living resources is the basis for their organizations to participate in the prevention and control of air pollution. Only when they have the basic resources for participation, such as funds, talents and office space, can participate in the prevention and control of air pollution. In the market-oriented social network, only those organizations with basic living conditions and viability can further develop and improve organization activities [5]. In the survey of sample organizations, it is found that at present, the vast majority of environmental protection NPO is on the edge of survival, lack of survival resources and social needs, and even many environmental protection NPOs are hardly known in the society, lack of organizational funds, office space and full-time staff. At the same time, the source of funds such as social donations of environmental protection NPO is narrow and low in quantity. In the current situation of insufficient income sources and relatively single channels, environmental NPO has difficulties in participating in the prevention and control of air pollution.

3.1.3. **Laws and regulations lag behind.** With the continuous development of environmental protection NPO, its participation in the process of air pollution prevention and control has gradually emerged. The main reasons are that the participants, functions, roles and boundaries are not suitable for the relevant laws and regulations, and the laws and regulations for environmental NPO to participate in air pollution prevention and control are lack of pertinence. On the whole, China's legal construction of environmental NPO coverage is not high, and mainly focuses on the registration and management of non-profit organizations. There are no corresponding laws and regulations to support the operation, supervision and performance evaluation of environmental NPO. On the other hand, there is no supporting legal text for environmental protection NPO participation in air pollution prevention and control throughout the country. And there is relatively small number of the laws from the terms of number. The level of law is not high in the terms of legal level. The specific content has relatively too many access standards for environmental protection NPO, has too many restrictions on their participation activities, and lacks pertinence.

3.1.4. **External supervision is absent.** At present, there are too many regulatory bodies for environmental protection NPO by government departments. There are registration departments, business management departments and affiliated units to manage them. However, the "multi supervision" mode has not brought about the improvement of supervision quality and efficiency in the actual governance process. On the contrary, it shows that the responsibilities of regulatory departments are not clear, their authority is unclear, and "both manage and ignore" situation is created. It has become management vacuum for environmental protection NPO to participate in air pollution prevention and control activities. Some environmental protection NPOs wear environmental protection clothing and carry out some illegal activities under the banner of specialization. In addition, the vast majority of environmental protection NPO has not formed effective internal governance mechanism, and internal regulations in financial system, discussion system and assessment system. Even if they have, they are often mere formality, which is only used to deal with the inspection of higher authorities, and the internal governance mechanism is in vain. The internal operation is not open and transparent, which also affects its participation in air pollution prevention and control to a certain extent.

3.1.5. **Voluntary participation is insufficient.** Through the study, it is found that the lack of volunteer participation is also an important factor affecting the participation of environmental NPO in the prevention and control of air pollution. As an important participant of non-profit organizations, volunteers have direct impact on the operation of environmental NPO. In China, due to the low awareness of environmental protection NPO among ordinary citizens, environmental protection NPO does not generate professional attraction for citizens, and the voluntary participation rate and participation quality of social citizens are inefficient, which seriously restrict the participation of environmental protection NPO in the prevention and control of air pollution. In addition, due to historical and institutional reasons, some environmental protection NPO in China is formed by restructuring government departments or taking the l
ead of administrative leaders. The proportion of part-time leaders of administrative departments in environmental protection NPO is relatively high. Even some environmental protection NPO regard the personnel with high administrative position and rich social resource as the selection criteria for their direct ors and presidents in the general election. The resource dependence of "Chairman Hongding" also affects the function of non-profit organizations.

3.2. Optimization path of environmental NPO participating in air pollution prevention and control

Based on the analysis results of the problems of environmental protection NPO participating in air pollution prevention and control, this paper puts forward the optimization path of environmental protection NPO participating in air pollution prevention and control from the dimensions of ability, legal system, supervision and integrity, as shown in Figure 3.

![Figure 3. Optimal the path for environmental NPO participation in air pollution prevention and control.](image)

3.2.1. Strengthen the construction of environmental NPO specialization ability. At present, for environmental protection NPO, if they want to effectively participate in the prevention and control of air pollution and obtain more resource allocation, their professional ability plays an important role. We should further cultivate and introduce professional talents, and improve the mechanism of training and transporting specialized talents. Through improving the income and promotion space, we can attract compound and professional talents with professional background to work in environmental protection NPO. At the same time, it is necessary to strengthen the professional and professional skills training of the existing full-time staff of environmental protection NPO to improve their working ability and level. We should increase the proportion of professional staff in environmental NPO, reasonably allocate the organization members, leadership and full-time staff, and standardize the number of full-time staff in environmental NPO. In addition, the age structure of NPO full-time staff should be further optimized, and not all retired staff should be employed to promote the reform of younger staff.

3.2.2. Improve laws and regulations. We should further strengthen the construction of environmental NPO laws and regulations, improve the level of legislation, and improve the corresponding supporting measures of laws and regulations. We should gradually explore the behavior standards of environmental protection NPO, and clarify the boundary scope and role of environmental protection NPO in the prevention and control of air pollution in laws and regulations. At the same time, it is necessary not only to establish a "list of rights" in government departments, but also to standardize the "acceptance list" of environmental protection NPO in law, so as to clarify the responsibility of environmental protection NPO for illegal behaviors, and to promote their operation and development within the legal framework. In addition, on the basis of improving the laws and regulations of environmental protection NPO, we should further strengthen the enforcement of the laws and regulations of environmental NPO, and determine the main body of law enforcement and the administrative scope of law enforcement.
3.2.3. **Optimize the internal self-discipline mechanism and external supervision mechanism.** In terms of internal self-discipline mechanism, we can learn from the enterprise model, establish a "board of supervisors" system in the organization, formulate rules of procedure such as major events and strategic planning, and effectively supervise the finance, personnel and activities of environmental protection NPO. We can employ a third-party organization to supervise the internal of the NPO if necessary, and gradually eliminate the "red ceiling", transforming from "leading the governance of the community" to "democratic governance of the community". In order to ensure that the members of the organization do not use public resources to carry out illegal transactions and illegal activities, we should implement the system of environmental protection NPO members to work with certificates and formulate regulations on the restriction of organization members. In the aspect of improving the external supervision mechanism of environmental protection NPO, it is necessary to clarify the rights and responsibilities of registration management organs, business guidance departments and affiliated units, avoid "multiple management" and integrate or separate the registration rights, operation management rights and performance evaluation rights of environmental protection NPO. The operation management is undertaken by the government departments, and the performance evaluation employs a third-party organization to scientifically evaluate the operation performance of environmental protection NPOs, and gradually explore a new supervision mode of government, citizens and media, and make full use of new media means such as the network to supervise the environmental protection NPOs, so as to promote the efficiency of environmental protection NPO participating in environmental protection.

3.2.4. **Build credit evaluation system and information disclosure system.** At present, we should construct the integrity evaluation system of environmental protection NPO, improve the reward mechanism of law-abiding integrity and punishment mechanism for breaking the law and breaking the faith of environmental protection NPO, grade the integrity of environmental protection NPO, give support and reward to integrity organizations, and severely investigate and deal with the environmental protection NPO which engage in illegal activities such as soliciting sponsorship, issuing environmental impact assessment reports in violation of regulations, and random evaluation and comparison under the guise of environmental protection. At the same time, we should further strengthen the construction of the information disclosure system of environmental protection NPO, make information disclosure on the financial, personnel, activities and decisions on major issues of environmental protection NPO, publicize the revenue of sponsorship fees, consulting fees, service fees and other expenses obtained in the activities, as well as the expenditure items such as operation, management and personnel expenses, so as to construct the information disclosure platform of non-profit organizations, accept the supervision of the society and media, promote the standardization and transparency of the operation of environmental protection NPO, and let the environmental protection NPO operate in the sunshine under the legal framework.

4. **Conclusion**

To sum up, through the study of China's central, Eastern and western environmental protection NPOs, it is found that at present, China's environmental protection NPO has certain positive effect on environmental protection, especially on the prevention and control of air pollution. However, there are also some problems in the process of participating in the prevention and control of air pollution, which mainly focus on the low level of specialization of the organization itself, the shortage of activity resources, the lag of laws and regulations, the lack of organizational supervision, voluntary participation failure and so on. Improving the efficiency and quality of environmental protection NPO participating in air pollution is not only an important way of China's ecological civilization construction in the new era, but also the internal requirement of the development of environmental protection NPO itself, and the inevitable choice to promote global ecological security. Therefore, it is necessary to further expand the channel and space for environmental protection NPO to participate in air pollution prevention and control, improve their professional level, play their role effectively in environmental protection, and promote the construction community of human destiny to deal with climate change.
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