

Implementation Status and Problems of River and Lake Long-Term System

-- The Achievement of the Curriculum Assessment Reform of 《Introduction to Environmental Science》

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Abstract

Since the implementation of the river and lake long system, it has gradually established a complete system and achieved initial results in the management and control of rivers and lakes. Practical experience and advantages have gradually become prominent. It not only solves many problems in the process of water control, and greatly improves the water environment, but also actively responds to the call of the country to promote the construction of ecological civilization. However, after investigation, it has been found that there are still many problems in the implementation process of the river and lake system. How to deal with these problems is related to the future of each river and lake and to our survival and development. Therefore, we must constantly improve the working mechanism, take effective response measures in a timely manner, and mobilize the public to participate in river and lake management, so that the awareness of protecting the water environment is deeply rooted in people's hearts, so as to give full play to the advantages of rivers and lakes.

Keywords

River and lake system; governance effectiveness; implementation efforts; problems and responses; public participation.

1. Introduction

In the current rapid economic development, water shortages and pollution problems are very serious, and the treatment and restoration of rivers and lakes cannot be delayed. The full implementation of the long system of rivers and lakes is an inevitable requirement for the implementation of green development and the creation of happy rivers and lakes. It is a major decision made by the Party Central Committee with Comrade Xi Jinping at the core from the harmonious coexistence of man and nature to accelerating the construction of ecological civilization. The burden of maintaining the healthy life of rivers and lakes not only falls on the shoulders of the river chief, it is also the unshirkable responsibility of each of our citizens. Starting from General Secretary Xi Jinping's call of "Every river must have a river chief", after 3 years of unremitting efforts, all parts of the country have fully implemented the river-length system and the lake-length system. The appearance of rivers and lakes has undergone great changes. And protection work has achieved remarkable results. Regarding the river and lake chief system, although the whole country has established the river chief system and the lake chief system has achieved remarkable results, there are still some weak links and deficiencies on the whole.

This article uses a combination of online research and offline interviews to explain the views of people from all walks of life on the river and lake long system. The online survey collected a total of 120 questionnaires, and the offline interviews collected a total of 6 questionnaires, and they learned more about the surrounding river and lake long system beyond the questionnaire. For example, the Xidayang Reservoir in Tang County has changed its environment since the implementation of the river and lake long system. And by consulting information, the research content is more perfect.

This survey mainly focuses on the following five aspects: understand the public's participation in the river and lake long system; understand the results achieved since the implementation of the river and lake long system; understand the implementation strength of the river and lake long system since the implementation; understand the current situation of the river and lake long system Remaining problems; to investigate the solutions to the problems that still exist in the river and lake long system. At the same time, based on the status quo of "resource water shortage in the north and engineering water shortage in the central and western regions," the scope of this survey is mainly distributed in the central and western regions. Among them, Hebei, Hubei, and Henan provinces are the majority. In this survey, a total of 75 questionnaires were collected in Hebei Province, and 10 questionnaires were collected in Hubei Province and Henan Province. (See Figure 1)

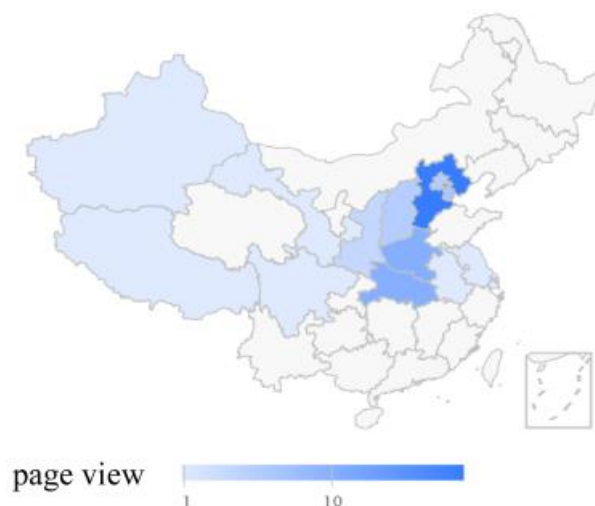


Figure 1. distribution of respondents

2. The Current Situation of the Implementation of the River Chief System

2.1. Urge the River Chief to Perform His Duties and Fulfill the Responsibility of the River Chief System in Place

2.1.1. In-Depth Investigation of the River Chief's Work

In recent years, the river and lake long system has evolved from "named but not real" to "named but real". Judging from some local documents and measures, due to the relevant provisions of the central policy, the river chief system has become more and more standardized. For example, "The performance of the river chief in the office of the river chief in Guangzhou has been severely criticized." [1] The town (street) and village (residential) where the river chief at the grassroots level performed poorly was criticized and criticized. Relevant districts are required to intensify the rectification of problems in the water environment management work, and promptly supervise and remind river leaders at all levels to perform their duties and consolidate responsibilities, grasp each level, implement each level, and form a linkage between

upper and lower levels. The work pattern of co-management is to effectively manage, protect, and control the river course.

The survey found that nearly half of the public have not seen the river chief to carry out patrolling work, 24.17% of the public did not pay attention to the situation of the long river patrol, only 23.33% of the public occasionally saw the river patrol, and 5% of the public said their river chiefs patrolled the river frequently. (See Figure 2) It can be seen that the implementation of river cruises in various regions is not satisfactory. To this day, the phenomenon that "the river chief does not know which river he manages[2]" still exists. We need to put more focus and attention on the implementation of river chief's work and urge the river chief to perform his duties.

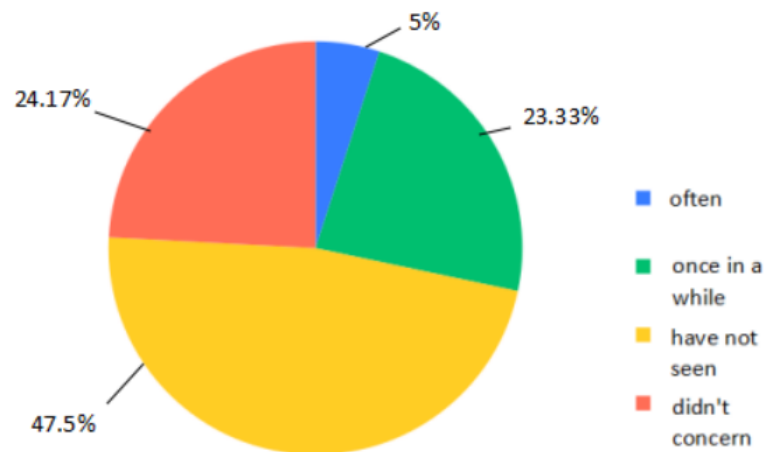


Figure 2. River patrol in the public area

In response to the problem of the lack of awareness of individual river chiefs to perform their duties, 71 of the 120 interviewees believed that the public should be called on to involve the whole people, and the strategy of monitoring and reporting rewards should be implemented to stimulate the public's enthusiasm; 59 people think that the land, public security, urban management, Hydraulics, and various departments should jointly govern, coordinate and cooperate, and strengthen law enforcement; in addition, it is necessary to refine the accountability list, improve the investigation mechanism, and improve laws and regulations. (See Table 1)

Table 1. Measures taken by the public who believe that certain river chiefs who have low awareness of performing duties

Options	Reply situation
Departments of land, public security, urban management, water conservancy, etc. jointly take enforcement actions to increase law enforcement	59
Actively call on ordinary people to participate and implement the strategy of rewarding rewards for supervision and reporting	71
Further refine the list of responsibilities and improve the accountability mechanism for accountability	46
Improve local laws and regulations on water environment governance and management	31

2.1.2. In-Depth Investigation of the Implementation of the River Chief System

Deepening and implementing the "River Chief System" is an effective measure to promote the improvement of water environment quality [3]. According to the survey, judging from the establishment of local river chief system public signs, 25.83% of the public do not have river chief system public signs in their areas. The establishment of river chief public signs is not only a requirement of the system, but also for the convenience of the public. Supervise and report responsibilities, so that the public has a better understanding of the river and lake chief system. Therefore, the fact that there are no public signs for the long system of rivers and lakes in many rivers and lakes, undoubtedly shows that there are loopholes in the implementation of the long system of rivers and lakes, which prevents the public from participating in the supervision and reporting work, and the public's sense of participation in river and lake governance is extremely low; There are 36.67% of the public who do not understand the river chief system public signs; only 37.5% of the public places have many such public signs. Although the setting of the river chief system can not be used as an accurate standard to measure the implementation of work, it still represents an important factor for measurement. (See Figure 3)

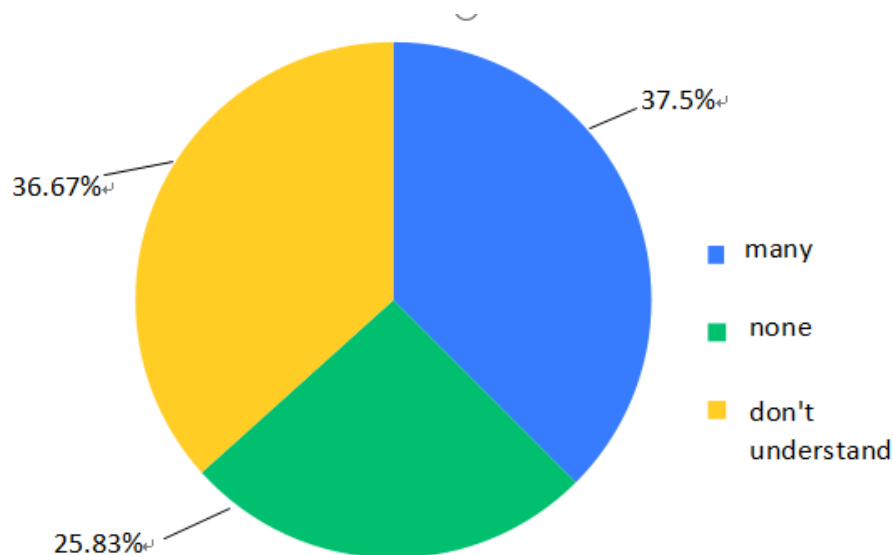


Figure 3. The installation of the river chief public notice board in the public area

In the work of the river chief system, the river chief in the area where the 84 interviewees are located has implemented the work of strengthening the prevention and control of water pollution and formulating the implementation plan of water environment management, but the work done in the investigation of river water quality and pollution sources and water restoration Lacking. (See Table 2) Although water restoration and pollution source investigation are arduous, they are of great significance to the sustainable development of rivers and lakes. Under the condition that treatment funds allow, the investigation of pollution sources and water restoration should be gradually increased. Start with the investigation of some water pollution sources and gradually expand the scope of treatment to achieve the goal of final treatment in each river.

Table 2. Work implemented by the river chief in the public area

Options	Reply situation
Strengthen water resources protection and shoreline management and protection of rivers and lakes	68
Strengthen the prevention and control of water pollution and formulate implementation plans for water environment management	84
Strengthen water ecological restoration	62
Supervise	70
Carry out investigations on the water quality and pollution sources of Baogan River	39

2.1.3. Fully Implement the River and Lake Long System to Maximize Its Effect

Strengthen social supervision and realize the countermeasures and suggestions from the long system of rivers and lakes to the "long" governance of rivers and lakes [4]. Its ultimate goal is to achieve ecological management of water resources, improve the water environment, and then protect the environment on which humans depend. In terms of how to efficiently ensure the implementation of the river chief system, (see Table 3) 107 interviewees believed that the most effective measure to ensure the implementation of the river chief system is to strengthen social supervision. Through the implementation of the river and lake chief system, the river and lake chiefs are subject to supervision from the whole society. In addition, strengthening government leadership and improving working mechanisms also play an important role in the implementation of the river chief system. Basin management agencies can actively use the platform function of the river and lake long system, and use supervision as an important starting point to promote law enforcement in rivers and lakes, and carry out supervision of law enforcement in rivers and lakes in the basin [5]. At the same time, to build a happy river and lake in an all-round way requires the active participation of the whole people. Water governance is an inescapable responsibility for each of us. While consolidating the responsibilities of the long lake leader and fully fulfilling his duties [6], we promote public participation in the supervision of the river. In matters related to lake governance, the long-running system of rivers and lakes will play the largest role in the supervision and improvement of society, the active leadership of the government, and the continuous improvement of working mechanisms. The water resources of rivers and lakes have been fully protected, and the improvement of water quality has achieved remarkable results.

Table 3. The public considers the most effective measures to ensure the implementation of the river and lake long system

Options	Reply situation
Strengthen government leadership	94
Strengthen assessment and accountability	77
Strengthen social supervision	107
Improve working mechanism	88
Other	0

2.2. Results Have Been Achieved Since the Implementation of the Long River System

The implementation of the river chief system is conducive to the improvement of the water quality of rivers and lakes and the improvement of the river environment. According to Zhoukou Daily, the reporter learned recently that the water quality of rivers in Shenqiu County

has improved significantly, and the water quality of major rivers has reached 100%. In this survey, more than half of the interviewees believe that the implementation of the river and lake long system has played a certain role in the protection and governance of water resources, but the effect is not obvious; 33.33% of the public believe that the implementation of the river and lake long system has started. Obvious results have been achieved, and the water quality of rivers and lakes has been improved; a small part of the public believes that the environment of rivers and lakes is the same as before or has not paid attention to the changes in the water quality of nearby rivers and lakes. (See Figure 4) Compared with three years ago, nearly half of the rivers and lakes in the area where the respondents are located have improved significantly. 41.67% of the residents have changed in the rivers and lakes, but the changes are not very obvious. Few people think that in the past three years River and lake governance has not been effective, and the river and lake environment has not been improved. (See Figure 5)

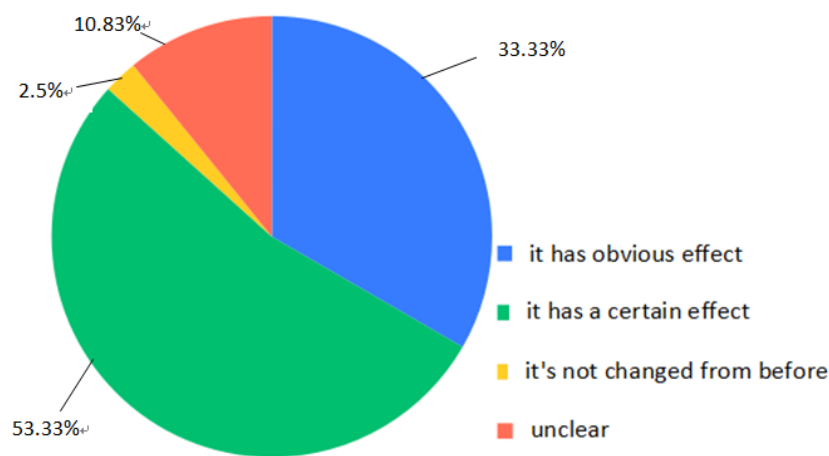


Figure 4. Whether the public believes that the formulation and implementation of the river and lake long system is effective for the protection and governance of water resources

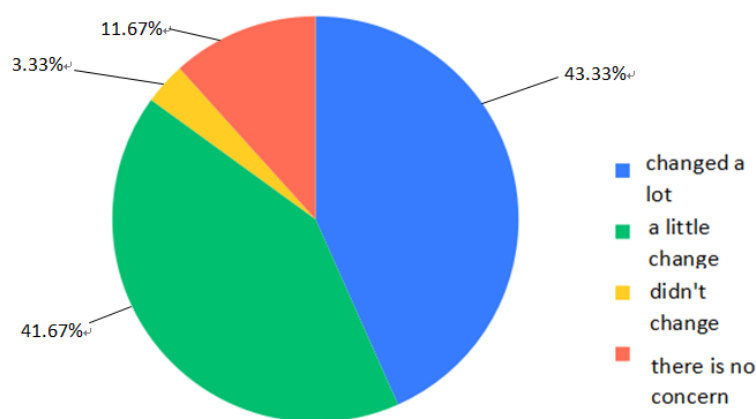


Figure 5. Changes in the environment of rivers and lakes in public areas compared with three years ago

The water quality improvement process of Xidayang Reservoir, which is responsible for providing domestic water for Baoding, Hebei Province, is a successful case. In 2015, the reservoirs affected the ecological balance due to the reproduction of large areas of aquatic plants. The existence of green algae and other aquatic plants caused eutrophication of water

quality, resulting in water pollution, and many aquatic organisms became extinct. After five years of rectification, it has now been significantly improved. The water quality of the reservoir is fresh and the surrounding environment is beautiful. In addition, the region is gradually developing the tourism industry, and while managing the environment, it also enjoys the economic benefits brought by the governance results. However, while significant results have been achieved, there is also a phenomenon of poor environmental protection awareness among individual residents. Barbecuing by the river and washing clothes in the reservoir water also occur from time to time. Residents must pay more attention. But in general, the implementation of the long-term system of rivers and lakes did have a certain effect. Since then, the rivers and lakes have masters and the management effect has gradually improved. People are also highly satisfied with the water environment of the river. (See Figure 6) The original dirty and smelly river and lake environment has gradually improved and become a recreational place for the people to relax. It is getting closer and closer to the goal of smooth rivers, clear waters, green shores and beautiful scenery.

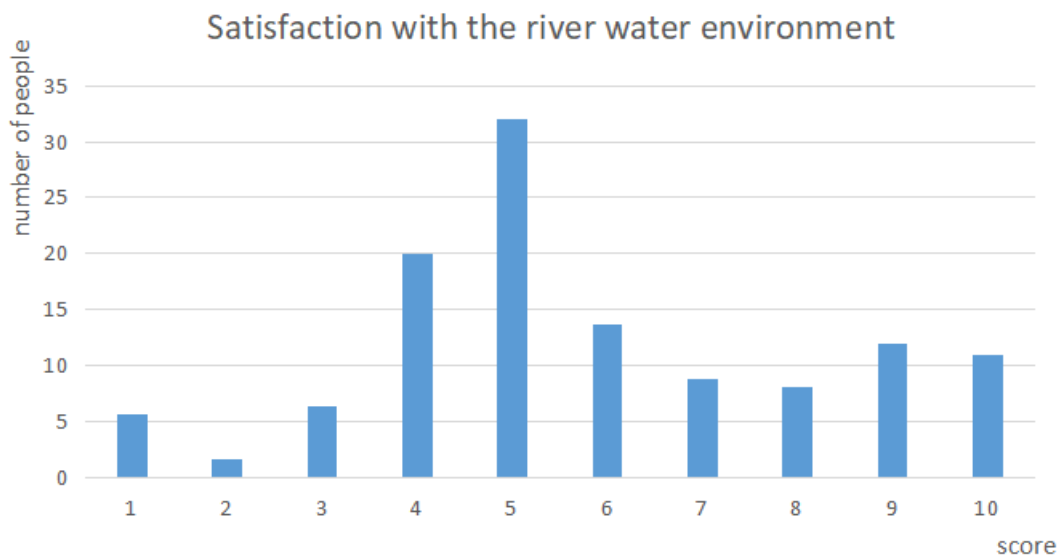


Figure 6. Public satisfaction with the water environment of rivers and lakes

3. The Problem Still Exists, and the Loophole Still Needs to Be Corrected

3.1. Effect of Water Environment Governance

In response to the survey on the public's satisfaction with the effectiveness of water environment governance since the beginning of the long-term system of rivers and lakes, people's satisfaction with the water environment is averagely rated at 5.96 points based on the ten-point system, which shows that people are relatively satisfied with this. However, there is still much room for improvement in the implementation of the long-running system of rivers and lakes, and it is still necessary to find and manage existing problems in the rivers and lakes to make up for the defects of the long-running system.

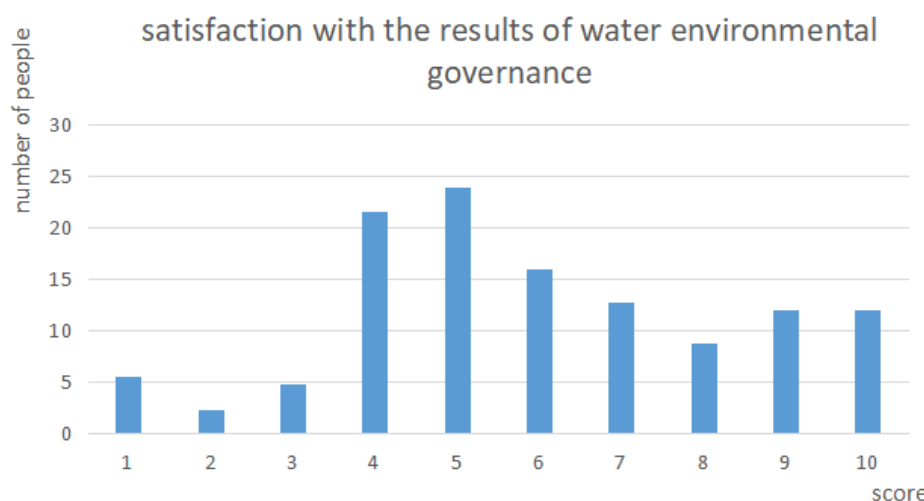


Figure 7. Public satisfaction with the effectiveness of water environment governance since the river chief system was launched

3.1.1. Trace Back the Problems of Rivers and Lakes and Promote River and Lake Governance

For a long time, China's improper management of water resources such as rivers and lakes has aggravated the waste of water resources and water environmental pollution. In addition, illegal sand mining of rivers, illegal occupation of river dikes, and lake reclamation have led to increasingly serious rivers. Lake ecological environment problems. And because people's awareness of environmental protection is weak and they turn a blind eye to signs such as "No dumping of garbage", a large amount of domestic garbage and construction waste are dumped into river banks and embankments. This is the most serious problem that the public believes exists in rivers and lakes; 62 received interviewers believe that the discharge of domestic sewage and industrial wastewater into rivers and lakes is also an important cause of pollution of rivers and lakes; 52 members of the public believe that agricultural pollution should also be concerned. The excessive use of pesticides, fertilizers, and insecticides makes it impossible for plants to completely absorbed chemical substances are discharged into the river through penetration and rain washing. (See Table 4) Due to the destruction of water quality, the high content of nutrients such as nitrogen and phosphorus leads to eutrophication of the water body, and frequent outbreaks of ecological hazards such as red tides and cyanobacteria have not only caused a large amount of water resources to lose their use value, but also caused serious environmental problems. Pollution affects biodiversity and human health and safety.

Table 4. Existing problems of rivers and lakes in the area where residents live

Options	Reply situation
Domestic garbage and construction waste are dumped on river banks and embankments at will	88
Sewage discharged from sewage outlets of enterprises or rivers	62
Agricultural pollution	54
No above problem	22

3.1.2. Investigate Its System Defects and Realize the Long-Term Governance of Rivers and Lakes

Seventy-five of the interviewees believed that there is a lack of coordination and cooperation mechanism for inter-regional rivers, and the difficulty of river management is a problem that still exists in the river and lake long system. The upper and lower reaches and the left and right

banks of rivers are mostly managed by different regions. The management standards and requirements of different regions may be different, and the upstream flow section has a greater impact on the downstream flow section. In some areas, improper upstream governance will cause downstream remediation efforts. If problems arise, it is difficult to define specific responsibilities and affect the effectiveness of river management.

Secondly, 71 people believe that there are too many problems left over from the history of water conservancy and the large demand for governance funds is also a major problem. The construction of water conservancy projects cannot be done once and for all. Instead, it requires irregular maintenance and repair to solve existing problems and eliminate known safety hazards. However, this repair process not only requires a lot of manpower and material resources, but also requires a solid financial foundation, so all Maintenance and management also face great challenges. Due to insufficient funds, rivers in some areas have not been treated for many years, silt has accumulated, and buildings have been seriously aging and disrepaired, affecting the basic ecological functions of rivers and lakes.

69 members of the public believe that residents' weak environmental awareness will also affect the governance of rivers and lakes. Many residents have poor living habits, especially those in villages and towns. They dumped garbage directly into rivers and lakes for convenience, resulting in poor water quality and environmental degradation, aquatic organisms drastically reduced or even disappeared, affecting biodiversity and undermining the stability of the ecosystem.

Lack of law enforcement, weak crackdowns, untrue work by He Chief, and poor awareness of performing duties are also reasons. Some river chiefs have never patrolled the river, and problems in the river can not be discovered and reported in time, which will have a bad impact on the river and lake, causing the river and lake to fail to meet the standards. In terms of higher-level inspection and supervision, Guangdong Province has issued some assessment methods to increase the "water quality compliance rate at the junction of municipal rivers" [7], which puts a certain pressure on local river chiefs and makes this work better in implementation of more powerful. (See Table 5)

Table 5. The public believes that there are still problems in the river chief system

Options	Reply situation
Cross-regional river management is difficult, and management standards vary from region to region. It is difficult to define specific responsibilities	75
There are many problems left over from history, large amount of investment in governance and protection, and insufficient governance funds	71
Slow delimitation of shorelines in rivers and lakes	41
Enforcement management is difficult and law enforcement is lax	74
There are many sewage outlets set up in violation of regulations, and the water quality discharge standard is low	57
The participation of grassroots managers and the masses in management is not high	69
other	8

4. Problems Need to Be Solved Urgently, and Governance Still Needs Efforts

4.1. Focus on the Focus of Work And Strive to Achieve Results

Regarding the performance of the heads of rivers and lakes, the masses hope that the heads of rivers and lakes will focus on pollution control and water environmental protection. (See Figure 8) First, a preliminary judgment will be made on the health of rivers and lakes, and the treatment of heavily polluted rivers and lakes will be adopted [8]. Check the sewage outlets set up in violation of regulations, improve the urban sewage pipe network, increase environmental protection publicity, increase citizens' awareness of the hazards of sewage directly entering the river, and use current science and technology to filter and process sewage in batches to meet water quality standards. As for rivers with good ecological conditions, strict protection measures are adopted to avoid pollution. Secondly, to maintain the normal operation of the river, we must start from the root cause, vigorously promote and cultivate the protection of water resources by residents, arrange the greening of both banks, and improve the dredging and repair of the river bed [9]. Clear waters and green mountains are as valuable as mountains of gold and silver. Only by implementing the focus of the work of rivers and lakes can we effectively solve the current water resource problems, realize the long-term development of water governance, and create clear waters and green mountains for the people.

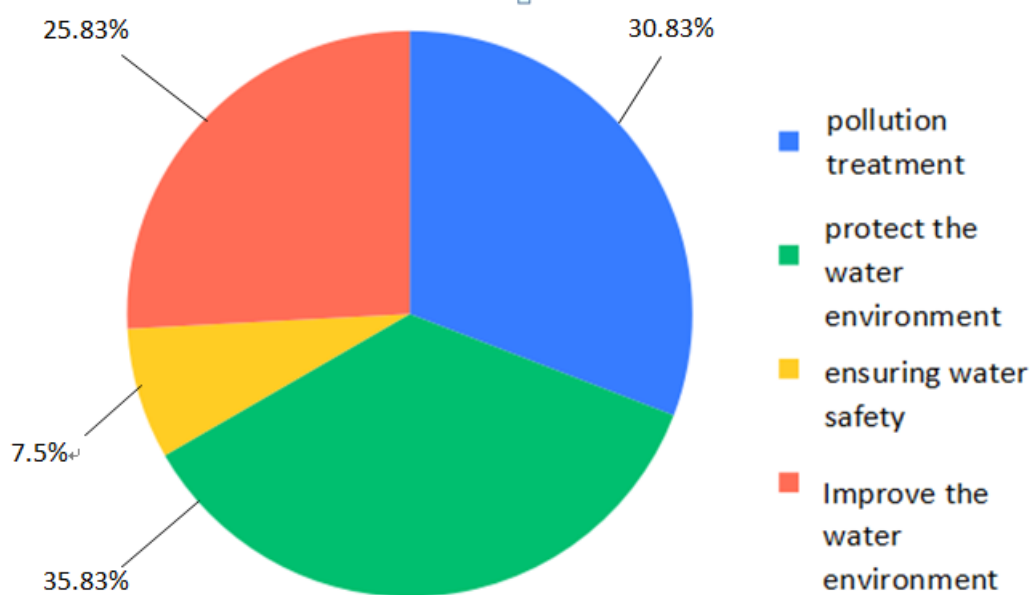


Figure 8. The focus of the public's perception of the river chief system

4.2. Focus on Implementing Policies in Line with Rivers and Lakes

Discharge of industrial wastewater and residues, domestic garbage and sewage into rivers, pollution from livestock and poultry breeding, pollution from agricultural non-point sources... Water pollution has many causes. In the process of pollution control, for rivers in different places, in addition to common measures such as controlling pollution sources, the most important thing is to proceed from reality. The so-called "teach students in accordance with their aptitude" can only be better solved problems by implementing targeted measures. For example, the black and smelly rivers in some cities and towns are caused by the low takeover rate of domestic sewage from urban residents in marginal areas and the direct discharge of a large amount of domestic sewage into the river. Some are caused by construction projects that interrupt the flow of river water, and some are caused by the superposition of multiple reasons.

Therefore, "one river, one policy" and policy in accordance with the river are the basic roadmap from the river chief system to the realization of "river governing".

Most of the public recognized the measures adopted by the river. However, since it is necessary to "implement policies by river", the content of each "policy" must be solid and can withstand scrutiny, that is, governance plans and technologies must be reviewed and checked by environmental protection and water conservancy departments, and be supervised by the masses. "One river, one policy," and policy implementation due to the river cannot be used as an excuse for inaction and chaos. For example, in real life, some places simplifies the treatment of black and smelly rivers, dredging and dredging silt, and regularly changing the water, it has become a water control achievement. The dyke of a thousand miles collapsed in an ant nest. If things go on like this, it will not only not fundamentally solve the pollution problem of the river, but will also make others seek convenience and "imitate it", and it will not benefit the overall situation of the national water pollution prevention and control. The survey shows that nearly one-sixth of the interviewees think that the in-river policy is too energy-intensive and the investment cost is too high, and that the in-river policy is of little significance. (See Table 6)

Table 6. Whether the public believes that the river chief system should be based on river policies

Options	Reply situation
Each river has its own characteristics, and policies should be based on the river	88
The river chief system can be fully promoted, and it takes too much energy due to river policy	19
This is something the government should consider, it has nothing to do with me	6
do not know	7

4.3. Intensify Law Enforcement for Small and Medium-Sized Enterprises to Curb Pollution Sources

The unchecked and arbitrary discharge of industrial wastewater and waste residues of small and medium-sized enterprises will cause chemical pollution of the water body and cause excessive heavy metals and toxic and harmful substances in the water. Therefore, industrial pollution must be curbed from the source. Nearly 70% of the interviewees believe that law enforcement should be strengthened to severely punish small and medium-sized enterprises that discharge substandard water. However, small and medium-sized enterprises are lacking in capital and technology. In the process of industrial wastewater treatment, due to different product production processes, the quality and quantity of wastewater produced are also different. It is necessary to centrally treat wastewater of similar quality and discharge it uniformly after reaching the standard. This process takes time and effort. Therefore, individual interviewees believe that the economy should be developed first, and environmental inspections can be appropriately relaxed. (See Table 7) To this end, the government can provide subsidies so that economic development can be achieved while small and medium-sized enterprises have appropriate funds to invest in environmental protection.

Table 7. For small and medium-sized enterprises, whether the public believes that environmental inspections should be increased

Options	Reply situation
Yes, we should increase law enforcement	84
Yes, but afraid of law enforcement across the board	31
No, we should develop the economy first	3
Don't understand the connection	2

4.4. Pay Attention to the Coordination and Cooperation of Different Administrative Regions and Clarify the Responsibilities of the River Chief

The governance of river basins in different administrative regions has always been a huge problem facing the river and lake long system. The economic conditions, political conditions, local culture and the quality of the people of different administrative regions are very different, and these differences have largely affected the efforts to control local river pollution. Therefore, 48.33% of the public believes that it is a feasible way to distinguish between the boundaries and the responsibilities for situations where different administrative regions cannot coordinate and cooperate, and when problems cannot be defined responsibilities. 31 interviewees believed that it is possible to establish a joint meeting system for river chiefs at all levels, to implement it at all levels, and to work together to manage it. The river chiefs in different administrative regions establish a meeting system in their work, which is conducive to the governance of the river basin, and at the same time allows the river chiefs to communicate and learn from each other. Or set up a special department to exercise jurisdiction. (See Table 8)

Table 8. The effective solutions that the public considers to address the flow problems in different administrative regions

Options	Reply situation
For the rivers that span the two provinces, the central government has established a special department to exercise jurisdiction	31
Establish a scientific and accurate monitoring and evaluation system to clarify their respective responsibilities	58
Establish a joint meeting system for river chiefs at all levels, implement them at all levels, and work together to manage	31

5. Advocate Public Participation in River and Lake Governance

5.1. Public Participation and Current Status of Public Participation

Public participation refers to the social actions of the public, social organizations, units or individuals as the main body, within the scope of their rights and obligations. As our country's environmental problems are becoming more and more serious today, public participation is an important way to solve environmental safety problems. Therefore, guiding and encouraging the public to participate in the full implementation of the river and lake chief system and cultivating the civil forces for river management and protection are important guarantees for the river chief system to take root and achieve practical results [10]. But at present, the situation of China's public participation in water pollution control in the river basin is not very satisfactory, and the advantages of public participation have not been effectively utilized [11]. The survey

shows that 58.33% of the people are completely ignorant of the river and lake long system, 40% of the public only know a little bit, and only 1.67% of the public know very well. (See Figure 9)

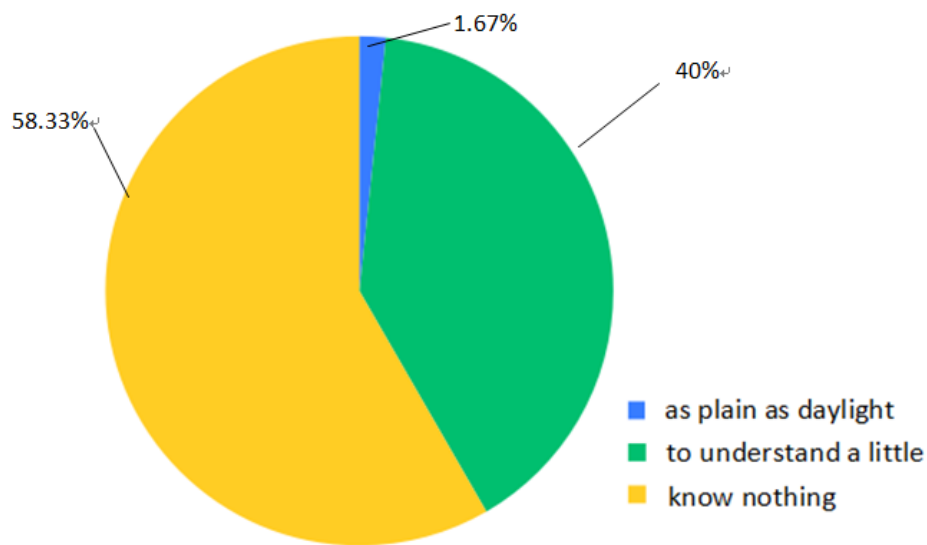


Figure 9. The public's understanding of the river chief system

The problem of citizens caring about river pollution but not taking actual actions is also quite serious. The vast majority of citizens have not participated in the work related to the long-running system of rivers and lakes. The participation of individual citizens is only at the superficial level, and the passive phenomenon is serious. Mainly, lack of substantial participation. (See Figure 10) Compared with foreign developed countries, in our country's current relevant laws and regulations, there are only principled public participation in the resolution of environmental conflicts and scattered protection of environmental public participation rights. There is a lack of practical methods and channels for public participation in environmental protection [12]. The water control problem is imminent, it is particularly important to improve relevant laws and regulations and establish a reasonable public participation in the water pollution control mechanism of the river basin.

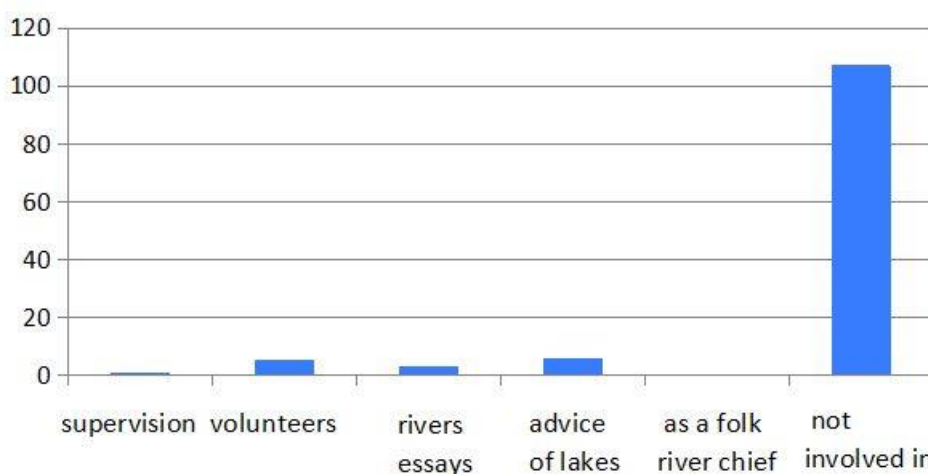


Figure 10. Public Participation in the Work of the Long-River System

Regarding the pollution of rivers in this area, 58.33% of people would choose to report it in time, and 38.33% would care about pollution, but they would not report; only a few members

of the public would choose to ignore the pollution. (See Figure 11) It can be seen that most of the public are still very concerned about the pollution of rivers and lakes, but are unwilling to perform their duty of monitoring and reporting. In response to this phenomenon, we can increase social publicity, recruit volunteers, or implement measures such as supervision and reporting with rewards to achieve universal participation. It is also possible to set up fixed propaganda slogans in places where people gather in government, schools, markets, parks, etc., to create a strong atmosphere for everyone to participate in the work of the river and lake long system, and to enhance the public's sense of participation.

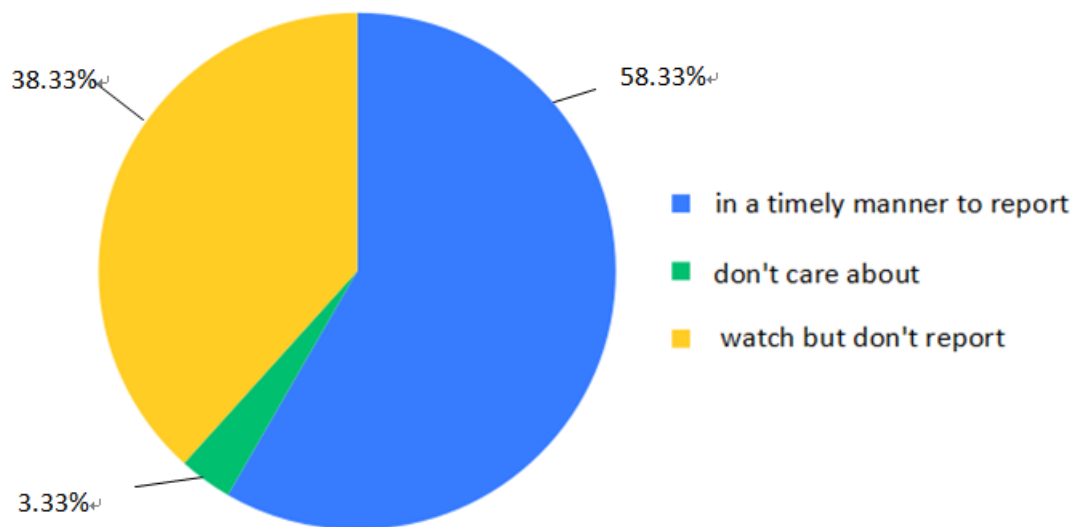


Figure 11. What the public did after discovering pollution in this river section

5.2. The Whole People Participate in the River Chief System and Jointly Improve the Water Environment

According to the survey, people generally recognize the implementation of the river and lake long system policy, and believe that protecting the river is the responsibility of every citizen, and protecting the river can guarantee the quality of life. This is because water environmental protection is not only related to the maintenance of the vital interests of the people, it is related to the smooth construction of a beautiful China, and it is also related to the early realization of the Chinese dream of the great rejuvenation of the Chinese nation [13]. However, some citizens think that the residents have little impact on the river and the pollution problem should be solved fundamentally. The long-term system of rivers and lakes is to "control in parallel", to prevent industrial waste water and domestic garbage from being discharged into rivers and lakes, to control existing pollution of rivers and lakes, and to promote ecological restoration and protection of rivers and lakes. (See Table 9) Since the implementation of the long system of rivers and lakes, although the problem of river and lake water pollution in some areas has not been completely eliminated, the water quality has also improved. It is precisely because of the above reasons that the river and lake long system has been greatly recognized by the citizens, and more and more people are beginning to take the initiative to understand the river and lake long system and contribute to the prevention and control of water pollution.

Table 9. Public views on support for the river chief system

Options	Reply situation
Governing the river is a matter of the government, and has nothing to do with self-employed	3
I think the residents have little meaning to the river, mainly because the discharge of industrial waste water pollutes the river	4
Protecting rivers only requires the participation of people in river-related industries	2
Protecting the river is the responsibility of every citizen, and protecting the river can guarantee the quality of life	111

5.3. Establish A Public Participation Mechanism and Develop and Strengthen Civil Forces

Public participation, in a broad sense, refers to all activities that citizens try to influence public policy and public health. It is composed of three basic elements: the subject of participation, the scope of participation and the way of participation. [14] Public participation is an important part of the work of the river chief system and an important force for protecting and managing rivers and lakes. Nearly 82.5% of the public hold a positive attitude towards participating in the river chief system and think it is useful, 15.83% of the public think it is not very useful, and 1.67% of the public think that it is not useful to involve ordinary people. (See Figure 12) It can be seen that the public's participation enthusiasm is not very high, and the public's power has not been properly used. Therefore, the establishment of a public participation mechanism is particularly important for the implementation of the river chief system. To effectively awaken the power of the public, the implementation of the "river chief system" content will be changed from a passive and formalized development to the public's promotion of various actions. Give full play to the wisdom of the masses, broaden the channels for mass participation, increase the depth of public participation, and develop and strengthen the civil river and lake governance forces. Build a river and lake governance system led by the government, with enterprises as the main body, and social organizations and the public participating together to jointly manage and protect our water environment. [15]

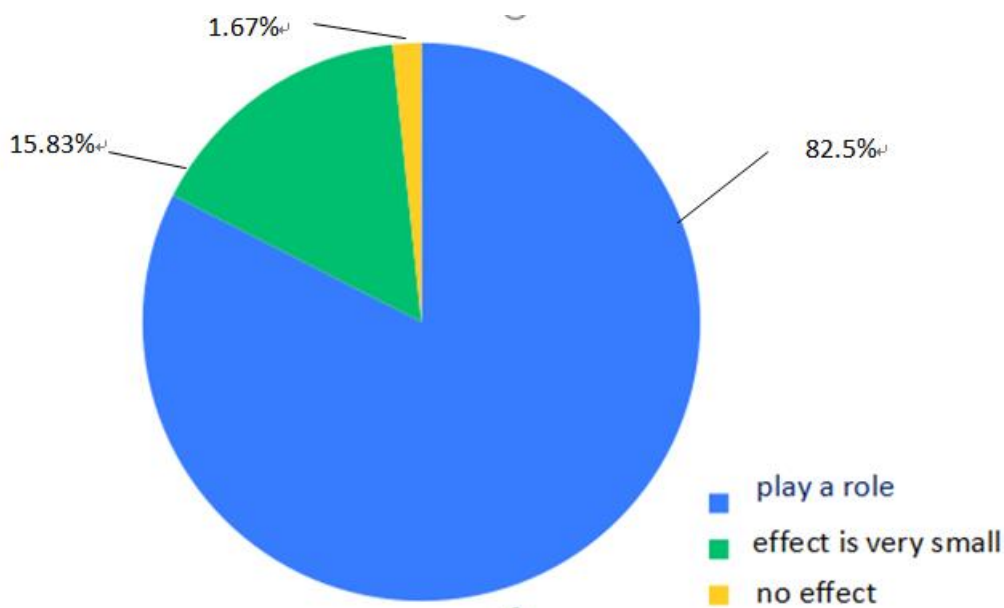


Figure 12. Respondents believe that the role of ordinary people in the river and lake chief system

6. Conclusion

Since the implementation of the river and lake long system, the water environment around us has been significantly improved, the clear water and blue sky are getting closer and closer to us, and the results are obvious to all. However, we have also discovered many problems in the implementation of the system. River pollution still exists, and the drawbacks of the river and lake chief system are also exposed. We should clearly realize that there is still a long way to go for river protection and river and lake long system. We must not only see the initial results of governance, but also the existing problems of the river and lake long system. And while the river and lake chiefs perform their duties, they need to call on the whole people to participate. There are no bystanders in water control. While enjoying the incomparable convenience brought by the improvement of rivers and lakes to their lives, the public should also regard river and lake governance as their own responsibility. Work with the public to improve the river and lake long system. Through everyone's joint efforts, let the river and lake long system run in the sun!

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